

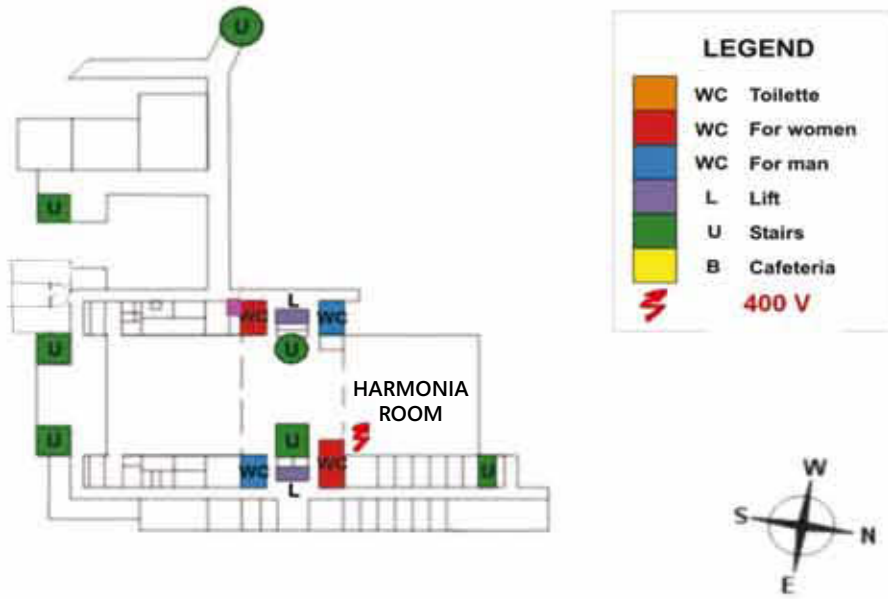
ESCOP 2013
*18TH MEETING OF THE
EUROPEAN SOCIETY FOR COGNITIVE PSYCHOLOGY*
AUGUST 29 – SEPTEMBER 1, 2013 – BUDAPEST, HUNGARY



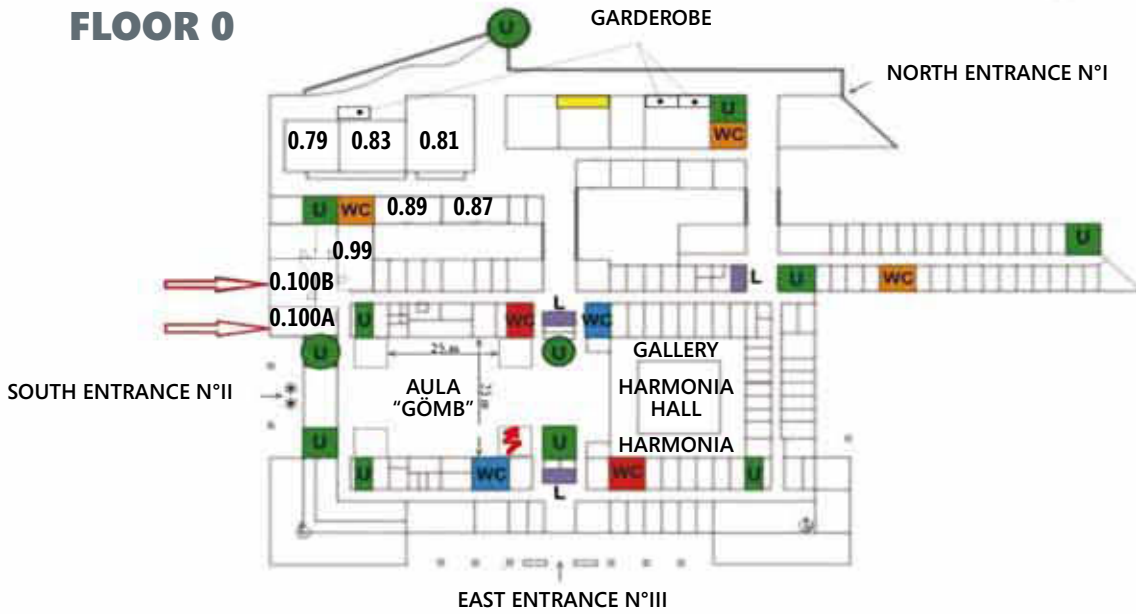
ESCOP 2013
PROGRAM BOOK

VENUE MAP

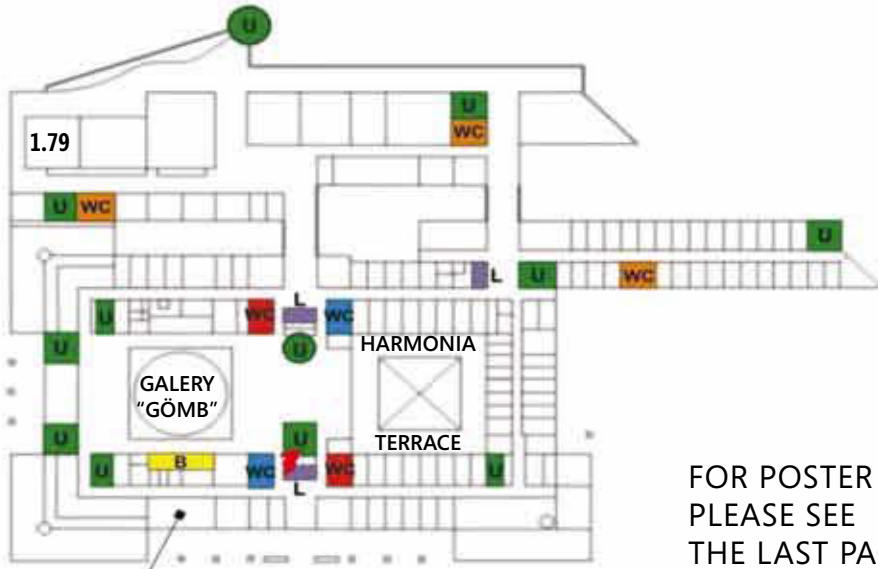
FLOOR -1



FLOOR 0



FLOOR 1



FOR POSTER MAP
PLEASE SEE
THE LAST PAGE

ESCOP 2013

18TH MEETING OF THE EUROPEAN
SOCIETY FOR COGNITIVE PSYCHOLOGY

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WELCOME

Welcome to the 18th ESCOP Conference, Welcome to Budapest!

On behalf of the community of cognitive psychologists working in Hungary and on behalf of Central European University we would like to welcome you to the 18th Meeting of the European Society for Cognitive Psychology (ESCOP) in Budapest. It is an enormous honour and pleasure for us to welcome such a distinguished and diverse group of researchers in this exciting city in the heart of Europe.

There are many people whom we would like to thank for making this conference possible. We thank NÚria Sebastian Galles and Cristina Cacciari (present and past ESCOP presidents) and all the members of the ESCOP executive committee for entrusting us with the organization of this meeting and for their help and support at all stages of the preparation. We also thank the local members of the program committee for their advice in scientific and organizational matters. Special thanks to Andrea Schröck and Réka Finta at CEU's Cognitive Science Department for dedicating so much of their time and effort to make this conference a success. We would also like to extend our thanks to the Asszisztencia team, especially Nándor Mátrai and Kinga Pálszabó, for being such an efficient and reliable partner. Finally, thanks to our many student assistants for their help.

The program ahead of us represents the best traditions in Cognitive Psychology combined with cutting edge research. The large number and variety of symposia, talks, and posters speak for themselves. They illustrate that Cognitive Psychology is still growing and able to incorporate more and more aspects of human experience and behavior. At the same time we feel that this year's program raises some crucial questions for the future of Cognitive Psychology at large. The first is how to make a better psychological science, and how to combine it with the needs of the profession. This important issue is taken up in the form of a joint APS/ESCOP symposium on 'Good data practices and replicability'. A second aspect concerns the increasing scope and multidisciplinary nature of Cognitive Psychology. The large number of contributions that take up new influences from neuroscientific, social, developmental and evolutionary perspectives demonstrate that these perspectives do not only challenge the place of traditional experimental cognitive psychology but also provide new opportunities for our understanding of cognition. Reaching out to neighbouring fields, Cognitive Psychology may be on its way to becoming the new scientia amabilis of our times.

We sincerely hope that you will find the scientific program and conversations intellectually stimulating and fun, and that you will enjoy Budapest's rich cultural history as well as its hot spas and cool spots.

Csaba Pléh and Günther Knoblich

GENERAL INFORMATION

ORGANIZING COMMITTEE

ESCOP

Cristina Cacciari, *University of Modena,*
(President from January 2013)

Andrea Kiesel, *University of Würzburg,*
Germany (Treasurer)

Michal Wierzchon, *Jagellonian University*
Krakow, Poland (Secretary)

BUDAPEST

Gergely Csibra, *CEU*

Réka Finta, *CEU*

Attila Keresztes, *BME*

Günther Knoblich, *CEU (co-chair)*

Ágnes Kovács, *CEU*

Ágnes Lukács, *BME*

Nándor Mátrai, *Asszisztencia*

Csaba Pléh, *Eszterházy College (co-chair)*

Mihály Racsmány, *BME*

Andrea Schrök, *CEU*

Natalie Sebanz, *CEU*

CONFERENCE DATES

August 29 – September 1, 2013

CONFERENCE VENUE

ELTE University Congress Center

Pázmány Péter sétány 1/A.

H-1117 Budapest, Hungary

How to access the conference venue:

- located in south Buda side, at Petőfi Bridge
- easy connection by tram No. 4-6 serving 24/24 a day

ONSITE REGISTRATION HOURS

August 28 | Wednesday 13:00-16:00

August 29 | Thursday 08:00-19:00

August 30 | Friday 08:00-19:00

August 31 | Saturday 08:00-18:00

September 1 | Sunday 08:00-11:00

NAME/ENTRY TAG

Your personal name tag provides access to the conference site and to all conference events.

Please wear it at all times; without it you may not be allowed into the conference venues.

Your name tag also contains the lunch coupons.

WIFI

Complimentary wifi access is available for participants in the Aula during the conference.

SSID: ESCOP2013 Password: 2013Escop

LUNCH (AULA GALLERY) AND COFFEE BREAKS (AULA)

August 29 | Thursday

- Coffee breaks: 09:30-10:00 & 15:30-16:00
- Lunch: 12:00-13:30
- Welcome reception: 19:30-23:00 (Aula Gallery)

August 30 | Friday

- Coffee breaks: 11:00-11:30 & 15:30-16:00
- Lunch: 12:30-13:30

August 31 | Saturday

- Coffee breaks: 11:00-11:30 & 15:30-16:00
- Lunch: 12:30-13:30

September 1 | Sunday

- Coffee break: 11:00-11:30

HOSPITALITY

Welcome Reception

Thursday | August 29, 2013 | 19:30

The welcome reception of the conference will be organized at the venue. The reception will be followed by an open air party if the weather allows. Participation at this event is included in the registration fee.

Conference Dinner on the Danube

Saturday | August 31, 2013 | 19:30

All participants of the conference are kindly invited to the Conference Dinner. The dinner will take place on Europa Boat. The ship is the biggest and most equipped fluvial event venue in Central Europe. You will be able to enjoy a most impressive view of Budapest view of the Danube from the huge terrace of Európa Ship during the dinner. After dinner there will be an opportunity to continue your conversation/party on the boat if the weather allows.

This program is available at extra cost: 45 EUR/person.

Booking can be made onsite at the registration desk till August 29 (Thursday) 16:00.

BUDAPEST USEFUL INFORMATION

Public transportation:

Budapest has fast and reliable public transportation. Tickets for one ride or for 10 rides can be bought at the entrance to any metro station.

Taxi service:

Taxis in Budapest are relatively cheap and very reliable. Nonetheless, please be careful about which carrier you take; unregistered or unmetered taxis have been known to overcharge passengers.

It is best to call a registered taxi company to request a taxi, and give them your name and location.

We recommend the following taxi operators:

City Taxi (+361) 2111 111

Budapest Taxi (+361) 4333 333

Főtaxi (+361) 2222 222

Taxi 2000 (+361) 2000 000

Reaching the airport:

The Budapest Airport has an excellent minibus service to and from the airport, and it comes directly to your address. You can purchase a one-way or a return ticket from them.

The Minibus must be ordered 24 hours in advance. This can be done by your hotel, or by calling (+361) 296 8555 directly.

Főtaxi (061) 2222 222 is the official Budapest Airport taxi service. It has fixed prices from and to the airport, so if you are taking a taxi to or from there, please ask for the fixed price.

Emergency numbers:

Emergency ambulance number: 104

Emergency number Budapest Police: 107

Banking and money exchange:

In Hungary banks are open from Monday to Friday. Working hours are usually from 9 – 15, selected branches only 9 – 18. ATM machines are practically everywhere.

If you need to change cash, please be aware that exchange rates can differ greatly, ranging from 1% to almost 10%. There is usually no commission, but you have to check the actual rate of your currency and the selling prices. These should be posted clearly at the exchange booth; please do not attempt to change money where rates are not clearly posted.

GENERAL INFORMATION

ABOUT THE SOCIETY

ESCoP is a large Society with over 500 members, across a range of European countries and beyond. ESCoP's mission is „the furtherance of scientific enquiry within the field of Cognitive Psychology and related subjects, particularly with respect to collaboration and exchange of information between researchers in different European countries”.

There are three types of membership within the Society: associated members (postgraduates or postdoctoral researchers who are developing their research career, full members and retired members. The Society encourages scientific research through the publication of the Journal of Cognitive Psychology. Other forms of communication include less formal newsletters sent to all members, this website, and an electronic mailing list. The Society also promotes research through its regular conference meetings, has a highly successful programme of summer schools. It has recently initiated research workshops to act as a catalyst for the establishment and networking of research groups in emerging areas of cognitive psychology.

The Society has a constitution and a committee who oversee the workings of the Society. From relatively humble beginnings, ESCoP has developed into a broad, successful and respected Society that promotes research in cognate subjects. A history of the executive officers of the Society has been compiled and this could be referenced here.

COMMITTEE

Cristina Cacciari, *President*, cacciari.cristina@unimore.it

Jonathan Grainger, *President-Elect*, jonathan.grainger@univ-amu.fr

Andrea Kiesel, *Treasurer*, kiesel@uni-wuerzburg.de

Michal Wierzchon, *Secretary*, michal.wierzchon@uj.edu.pl

Valérie Camos, *Member*, valerie.camos@unifr.ch

Francesca Peressotti, *Member*, francesca.peressotti@unipd.it

Marc Brysbaert, *Member*, marc.brysbaert@ugent.be

Avishai Henik, *Member*, henik@bgu.ac.il

Stephen Monsell, *Member*, s.monsell@ex.ac.uk

Janet van Hell, *Editor Journal of Cognitive Psychology*, jgv3@psu.edu

www.escop.eu

DAILY PROGRAM OVERVIEW A

Wednesday | August 28, 2013

		Room
14:30-18:30	ESCOPE-APS Symposium: Building a better psychological science: Good data practices and replicability	0.83

Thursday | August 29, 2013

		Room
09:30-10:00	Coffee break	
10:00-12:00	European Research Council (ERC) Symposium	0.83
12:00-13.30	Lunch	
13.30-15.30	Women in Cognitive Science	0.83
15.30-16:00	Coffee break	
15:30-17:45	Poster session A	Aula
18:00-18:30	Conference Opening: Csaba Pléh	Harmonia
18:30-19:30	Keynote Session 1 - Broadbent Lecture: Glyn Humphreys	Harmonia
19:30	Welcome Reception at Conference Venue	

Friday | August 30, 2013

		Room
9:00-11:00	Talk session 1	
	SYMPOSIUM: Implicit cognition: Current theories and methods	0.81
	SYMPOSIUM: Attention, expectation and prediction and their effects on early auditory processing	0.83
	Working memory	0.79
	Task Switching	1.79
	Working Memory and Visuo-Spatial Processes	0.87
	SYMPOSIUM: Working memory updating: discovering its nature from the study of different materials and task procedures as well as individual differences	0.89
	Social Cognition 1	0.99
	Numerical Cognition: Acquisition and Disorders	0.100a
	Decision Making	0.100b
11:00-11:30	Coffee break	
11:00-13:30	Poster session B	Aula
12.30-13.30	Lunch	

DAILY PROGRAM OVERVIEW A

13.30-15.30	Talk session 2	
	SYMPOSIUM: Neurocognitive correlates of cognitive control	Harmonia
	SYMPOSIUM: Perspective taking in communicative acts	0.81
	SYMPOSIUM: Predictive processes in perception	0.83
	Executive Control and Working Memory: Task Switching and Response Inhibition	0.79
	Formal aspects of language comprehension	1.79
	Action Perception	0.87
	Modality Effects on Working Memory	0.89
	Social Cognition 2	0.99
	Numerical Cognition	0.100a
	Attention: Individual Aspects	0.100b
15.30-16:00	Coffee break	
16:00-17.40	Talk session 3	
	SYMPOSIUM: Synaesthesia: how unusual perception can inform normal cognition	0.81
	SYMPOSIUM: Consciousness and metacognition	0.83
	SYMPOSIUM: Positive and negative consequences of retrieval	0.79
	Learning 1	1.79
	Acoustics in Language Processing	0.87
	Control processes in bilinguals	0.89
	Cognition and Emotion 1	0.99
	Perception, Action, Motor Control	0.100a
	Attention: Selective Attention	0.100b
17:45-18:20	Business meeting	0.79
18:30-19:30	Keynote Session 2: Nancy Kanwisher	Harmonia

DAILY PROGRAM OVERVIEW A

Saturday | August 31, 2013

		Room
9:00-11:00	Talk session 4	
	SYMPOSIUM: Revisiting visual-word recognition	0.81
	SYMPOSIUM: Sense of agency: How do we know what we are doing?	0.83
	SYMPOSIUM: Continuous issues in numerical cognition	0.79
	Perception	1.79
	Executive Control: Multitasking	0.87
	Working Memory: Interference and Maintenance	0.89
	Semantic effects in language comprehension	0.100a
	Development 1	0.100b
11:00-11:30	Coffee break	
11:00-13:30	Poster session C	Aula
12.30-13.30	Lunch	
13.30-15.30	Talk session 5	
	SYMPOSIUM: Costs of storage and binding in visual working memory	Harmonia
	SYMPOSIUM: Bringing bilinguals to the heart of psycholinguistics: A tribute to the memory of Rosa Sanchez-Casas	0.81
	SYMPOSIUM: A current view on joint action	0.83
	Factors Affecting Working Memory processes	0.79
	Social and pragmatic aspects of language comprehension	1.79
	SYMPOSIUM: Beyond reward: Characterizing the diverse functions of the neural 'reward' system in human cognition	0.87
	Executive Control and Working Memory: Cognitive Control	0.89
	Numerical Cognition: Number Processing	0.100a
	Timing and Prediction	0.100b
15.30-16:00	Coffee break	
16:00-17.40	Talk session 6	
	SYMPOSIUM: Neuro-cognitive mechanisms of conscious and unconscious visual perception	0.81
	SYMPOSIUM: Beyond 'simple' decision making: What can the drift diffusion framework tell us about cognitive control?	0.83
	SYMPOSIUM: How we make false memories: Several explicative factors	0.79
	Learning 2	1.79
	Attention	0.87
	Executive Control and Working Memory: Learning	0.89
	Cognition and Emotion 2	0.99
	Semantic aspects of language processing	0.100a
	Linguistic aspects of bilingualism	0.100b
18:00-19:00	Keynote Session 3 - Bertelson Lecture: Roi Cohen Kadosh	Harmonia
19:30	Conference Dinner on Europa Riverboat	

DAILY PROGRAM OVERVIEW A

Sunday | September 01, 2013

		Room
9:00-11:00	Talk session 7	
	SYMPOSIUM: Attentional blink like effects: A tale of the salient and the unexpected	0.81
	SYMPOSIUM: Control of emotional reactions	0.83
	SYMPOSIUM: Time as information: Temporal event prediction in humans, animals and machines	0.79
	Word recognition	1.79
	Attention: Visual Attention	0.87
	Memory: Working Memory	0.89
	Thinking	0.100a
	Development 2	0.100b
11:00-11:30	Coffee break	
11.30-12.30	Keynote Session 4: Mike Tomasello	Harmonia
12:30-12:40	Closing	Harmonia

DAILY PROGRAM OVERVIEW B

Wednesday, August 28, 2013

Rooms:	Harmonia	0.81	0.83	0.79
14:30-18:30			ESCOPE-APS Symposium: Building a better psychological science: Good data practices and replicability	

Thursday, August 29, 2013

Rooms:	Harmonia	0.81	0.83	0.79
09:30-10:00	Coffee break			
10:00-12:00			European Research Council (ERC) Symposium	
12:00-13:30	Lunch			
13:30-15:30			Women in Cognitive Science	
15:30-16:00	Coffee break			
15:30-17:45	Poster Session A (in Aula)			
18:00-18:30	Opening			
18:30-19:30	Keynote session 1 Broadbent Lecture			
19:30-	Welcome reception at conference venue (included in the registration fee)			

Friday, August 30, 2013

Rooms:	Harmonia	0.81	0.83	0.79
09:00-11:00		Implicit cognition: Current theories and methods SYMPOSIUM	Attention, expectation and prediction and their effects on early auditory processing SYMPOSIUM	Working memory
11:00-11:30	Coffee break			
11:00-13:30	Poster Session B (in Aula)			
12:30-13:30	Lunch			
13:30-15:30	Neurocognitive correlates of cognitive control SYMPOSIUM	Perspective taking in communicative acts SYMPOSIUM	Predictive processes in perception SYMPOSIUM	Executive Control and Working Memory: Task Switching and Response Inhibition
15:30-16:00	Coffee break			
16:00-17:40		Synaesthesia: how unusual perception can inform normal cognition SYMPOSIUM	Consciousness and metacognition SYMPOSIUM	Positive and negative consequences of retrieval SYMPOSIUM
17:45-18:20	Business Meeting			
18:30-19:30	Keynote session 2			

DAILY PROGRAM OVERVIEW B

1.79	0.87	0.89	0.99	0.100a	0.100b

1.79	0.87	0.89	0.99	0.100a	0.100b

1.79	0.87	0.89	0.99	0.100a	0.100b
Task Switching	Working Memory and Visuo-Spatial Processes	Working memory updating: discovering its nature from the study of different materials and task procedures as well as individual differences SYMPOSIUM	Social Cognition 1	Numerical Cognition: Acquisition and Disorders	Decision Making
Formal aspects of language comprehension	Action Perception	Modality Effects on Working Memory	Social Cognition 2	Numerical Cognition	Attention: Individual Aspects
Learning 1	Acoustics in Language Processing	Control processes in bilinguals	Cognition and Emotion 1	Perception, Action, Motor Control	Attention: Selective Attention

DAILY PROGRAM OVERVIEW B

Saturday, August 31, 2013

Rooms:	Harmonia	0.81	0.83	0.79
09:00-11:00		Revisiting visual-word recognition SYMPOSIUM	Sense of agency: How do we know what we are doing? SYMPOSIUM	Continuous issues in numerical cognition SYMPOSIUM
11:00-11:30	Coffee break			
11:00-13:30	Poster Session C (in Aula)			
12:30-13:30	Lunch			
13:30-15:30	Costs of storage and binding in visual working memory SYMPOSIUM	Bringing bilinguals to the heart of psycholinguistics: A tribute to the memory of Rosa Sanchez-Casas SYMPOSIUM	A current view on joint action SYMPOSIUM	Factors Affecting Working Memory processes
15:30-16:00	Coffee break			
16:00-17:40		Neuro-cognitive mechanisms of conscious and unconscious visual perception SYMPOSIUM	Beyond 'simple' decision making: What can the drift diffusion framework tell us about cognitive control? SYMPOSIUM	How we make false memories: Several explicative factors SYMPOSIUM
18:00-19:00	Keynote session 3 Bertelson lecture			
19:30-	Conference Dinner, Europa Boat (NOT included in the registration fee)			

Sunday, September 1, 2013

Rooms:	Harmonia	0.81	0.83	0.79
09:00-11:00		Attentional blink like effects: A tale of the salient and the unexpected SYMPOSIUM	Control of emotional reactions SYMPOSIUM	Time as information: Temporal event prediction in humans, animals and machines SYMPOSIUM
11:00-11:30	Coffee break			
11:30-12:30	Keynote session 4			
12:30-12:40	Closing			

DAILY PROGRAM OVERVIEW B

1.79	0.87	0.89	0.99	0.100a	0.100b
Perception	Executive Control: Multitasking	Working Memory: Interference and Maintenance		Semantic effects in language comprehension	Development 1
Social and pragmatic aspects of language comprehension	Beyond reward: Characterizing the diverse functions of the neural 'reward' system in human cognition SYMPOSIUM	Executive Control and Working Memory: Cognitive Control		Numerical Cognition: Number Processing	Timing and Prediction
Learning 2	Attention	Executive Control and Working Memory: Learning	Cognition and Emotion 2	Semantic aspects of language processing	Linguistic aspects of bilingualism

1.79	0.87	0.89	0.99	0.100a	0.100b
Word recognition	Attention: Visual Attention	Memory: Working Memory		Thinking	Development 2

ESCOPE-APS SYMPOSIUM: BUILDING A BETTER PSYCHOLOGICAL SCIENCE: GOOD DATA PRACTICES AND REPLICABILITY

PRE-CONFERENCE EVENT (Room: 0.83)

Chair: Cristina Cacciari

THURSDAY | AUGUST 29

10:00-12:00

EUROPEAN RESEARCH COUNCIL (ERC) SYMPOSIUM

PRE-CONFERENCE EVENT (Room: 0.83)

Chair: Nuria Sebastián Gallés

THURSDAY | AUGUST 29

13:30-15:30

WOMEN IN COGNITIVE SCIENCE (Room: 0.83)

THURSDAY | AUGUST 29

15:30-17:45

POSTER SESSION A (Room: Aula)

Action Perception

PA-001
(A-0632)

Kevin Roche, Hanna Chainay, Jeroen Smeets, Eli Brenner, Dimitris Voudouris, Rebekka Verheij

Visuomotor priming on a grasping task

PA-002
(A-0635)

C. Del Gatto, C. Imperatori, R. Brunetti

Facial feedback effect is modulated by emotional valence and by the human factor.

Attention

PA-003
(A-0124)

Bérengère Staub, Nadège Doignon-Camus, Elisabeth Bacon, Anne Bonnefond

Improved sustained attention ability in the elderly: the role of monitoring processes

PA-004
(A-0141)

K. E. Burnett, G. d'Avossa, A. Sapir

Cue-target similarity modulates exogenous attentional effects

PA-005
(A-0155)

Tamar Gur Arye Bar-Tal, Daniel Algom

Is Strategic Control Impaired under Stress: Evidence from the Stroop Effect

PA-006
(A-0156)

Vered Shakuf, Daniel Algom

Contextual Factors Affect the Selectivity of Attention: The Role of Base Rate and Correlation in Determining Garner Interference

PA-007
(A-0212) **János Horváth**
Early sensory effects of auditory distraction

PA-008
(A-0241) **Márta Volosin, János Horváth**
Preventing distraction in regular tone sequences

PA-009
(A-0310) **Justyna Sarzyńska, Dorota Żelechowska, Edward Nęcka**
Attention training for children. More effort than it's worth?

Audition

PA-010
(A-0104) **Zsuzsanna Kocsis, István Winkler, Orsolya Szalárdy, Alexandra Bendixen**
Effects of attention and cue redundancy on concurrent sound segregation as evaluated with event-related potentials (ERPs)

Bilingualism/Multilingualism

PA-011
(A-0006) **Evy Woumans, Evy Ceuleers, Wouter Duyck**
Executive control in different bilingual populations: the role of language switching

PA-012
(A-0173) **Marie Lallier, Manuel Carreiras, Guillaume Thierry, Marie-Josèphe Tainturier**
Early childhood language exposure shapes auditory temporal attentional skills in adulthood

PA-013
(A-0441) **Yulia Oganian, Markus Conrad, Hauke Heekeren, Katharina Spalek**
Bilingual word recognition is influenced by sublexical structure – evidence for early availability of language membership information

PA-014
(A-0465) **Angela Ku-Yuan Tzeng**
An ERP Study on Chinese-English Code Switching

PA-015
(A-0701) **Joanna Durlik, Marek Muszynski, Zofia Wodniecka**
Relation between inhibitory processes in linguistic and nonlinguistic tasks: evidence from Polish-English bilinguals.

Cognition and Emotion

PA-016
(A-0210) **Stephanie Mathey, Pamela Gobin**
The effect of positive orthographic neighbourhood in visual word recognition

PA-017
(A-0271) **Mónika Albu, Máté Szondy**
Relation of hot and cold executive functions with mindfulness

PA-018
(A-0304) **Natali Moyal, Noga Cohen, Avishai Henik, Gideon E. Anholt**
Emotion regulation training for subclinical worriers

PA-019
(A-0497) **Elvan Arıkan, Sonia Amado, Mehmet Koyuncu**
The Role of Anger, Happiness, and Sadness on Iowa Gambling Task Performance

PA-020
(A-0691) **Bernis Sütçübaşı, Tamer Demiralp**
Pre-stimulus EEG oscillations and ERP components in CPT and N-back performance

PA-021
(A-0698) **Marta Kwaśnik, Alina Kolańczyk**
The trampoline of attention – rebound anxiety towards positivity

PA-022
(A-0707) **L. Pecoriello, T. Huenefeldt, M. Olivetti Belardinelli**
The relationship between perceived emotional intelligence and attachment-related anxiety and avoidance in Italian adults

PA-023
(A-0755) **S. Ruiz Fernández, J. Rahona, B. Rolke, G. Hervás, C. Vázquez**
Effects of body movements on mood regulation

PA-024
(A-0764) **Anita Deak, Barbara Bodrogi, Peter Papp, Tamas Bereczkei**
The neural basis of Machiavellians' „cool syndrome“

Cognitive Development

- PA-025
(A-0117) **Renáta Németh, Gábor P. Háden, Dávid Farkas, István Winkler, Alexandra Bendixen**
Processing of concurrent sounds in newborn infants
- PA-026
(A-0118) **Rebecca Sheridan, Richard Allen, Charity Brown, Mark Mon-Williams, Amanda Waterman**
Can children monitor their food intake?: Novel insights into temporal memory.
- PA-027
(A-0518) **Edina Dombi, Karolina Janacsek, Dezso Nemeth**
Why is human communication so fluent? Investigation of interactive alignment in dialogues from childhood to late adulthood
- PA-028
(A-0564) **Balázs Fehér, Jutta Kray**
Cognitive control training with younger and older adults: The role of inhibition – and memory – related processes in the training and transfer effects of task switching
- PA-029
(A-0582) **Batsheva Hadad**
Developmental changes in cross-modal transfer of shape

Consciousness

- PA-030
(A-0358) **Zoltán Kondé, Csaba Szabó, Gergely Szabó**
Hypnotic susceptibility and waking executive efficiency
- PA-031
(A-0468) **Estibaliz San Anton, Anne Atas, Axel Cleeremans**
Different origin of the Negative Congruency Effect depending on the type of mask
- PA-032
(A-0719) **Bertels Destrebecqz**
Does the Perruchet effect indicate a dissociation between learning and awareness?

Developmental Disorders

- PA-033
(A-0061) **Lisa Henderson, Anna Powell, Gareth Gaskell, Courtenay Norbury**
Learning and consolidation of new vocabulary in autism spectrum disorder
- PA-034
(A-0384) **L Casini, C Pech-Georgel, J Ziegler**
Revisiting temporal deficits in dyslexia
- PA-035
(A-0453) **Ramona A. Luedtke, Claus-Christian Carbon**
Assessing face processing abilities: The Structured Questionnaire for Prosopagnosia (sQ-PA) and the Bamberg Visual Imagery Questionnaire (BVIQ)
- PA-036
(A-0758) **Marietta Kékes Szabó, Anna Szalkai, Ágnes Szokolszky**
Object use and play activities in autism spectrum disorder

Executive Control and Working Memory

- PA-037
(A-0067) **Stephen P. Rhodes, Robert H. Logie, Mario A. Parra**
Ageing and feature binding in visual working memory: The role of presentation time.
- PA-038
(A-0077) **Klaas Bombeke, Nathalie Schouppe, Wout Duthoo, Wim Notebaert**
The effect of alcohol and placebo on post-error adjustments
- PA-039
(A-0150) **A. Bonnefond, N. Doignon-Camus, B. Staub, N. Gavens**
Effects of age and working memory span on sustained attention ability.
- PA-040
(A-0158) **Rico Fischer, Caroline Gottschalk, Gesine Dreisbach**
Context-Sensitive Adjustment of Cognitive Control in Dual-Task Performance
- PA-041
(A-0256) **Caroline Gottschalk, Rico Fischer**
Exploring bottom-up priming of control: Transfer of attentional control associations to new task settings
- PA-042
(A-0293) **Hanne Schevernels, Ruth Krebs, Liesbet Van der Borght, Carsten Boehler**
The temporal dynamics of how picture novelty influences conflict processing

- PA-043
(A-0309) **K. Kanerva, V. Kalakoski**
The Relationship between Working Memory Capacity and Higher Order Cognition: Effects of Processing Complexity and Cognitive Task
- PA-044
(A-0313) **Maisy Best, Tobias Stevens, Fraser Milton, Christopher D. Chambers, Ian P. McLaren, Gordon D. Logan, Frederick Verbruggen**
The role of the right inferior frontal gyrus following reversal of consistent stimulus-stop mappings
- PA-045
(A-0374) **Magdalena G. Wutte, Jennifer Coull, Laure Spieser, Franck Vidal, Boris Burle**
Neural correlates of cognitive control revealed by an audio-visual conflict task
- PA-046
(A-0435) **Tomasz Smolen, Adam Chuderski, Krzysztof Andrejczyk**
Neurocognitive mechanisms of the active buffer of working memory
- PA-047
(A-0693) **Omer Linkovski, Eyal Kalantrouff, Gideon Anholt, Avishai Henik**
Interplay between repeated checking and inhibition suggests that inhibitory deficit may have a causal role in the development of OCD

Judgment and Decision Making

- PA-048
(A-0560) **Jakub Traczyk, Agata Sobków, Tomasz Zaleskiewicz**
Imagery, stress, and risk perception: The role of affect-laden imagery in risk perception.
- PA-049
(A-0705) **Fabian Simmank, Kai Fehse**
An fMRI Study on Changing Price Relations Effects

Language Acquisition

- PA-050
(A-0018) **Alona Narkiss, Ram Frost**
Literacy acquisition in L1 vs. in L2: same language but different trajectories
- PA-051
(A-0228) **K. Sauval, S. Casalis, L. Perre**
Sublexical phonological representations in young readers: Evidence from priming paradigm

Language Comprehension

- PA-052
(A-0009) **A. P. Soares, A. Costa, J. Machado, A. Silva, J. Oliveira, A. M. Gonçalves, M. Comesaña**
Subjective frequency, imageability and concreteness norms for 3,800 European Portuguese words
- PA-053
(A-0102) **Laura Barca, Filippo Benedetti, Giovanni Pezzulo**
Role of articulatory motor planning on pictures categorization: a kinematic study
- PA-054
(A-0525) **Florian Hintz, Antje S. Meyer**
Prediction and production of simple mathematical equations
- PA-055
(A-0542) **Michele Scaltritti, Sandro Rubichi, Cristina Cacciari, Francesca Peressotti**
Alone or with someone else in the Lab? Influence of a second participant in a go/no-go lexical decision
- PA-056
(A-0645) **Navin Viswanathan, Joseph D.W. Stephens**
Do listeners use visually-specified information about coarticulation in speech perception?
- PA-057
(A-0667) **Zeynep Ilkin**
Lexical Access in Sentence Comprehension: Time Course of Morphological Processing
- PA-058
(A-0708) **S. Pota, E. Spinelli, N. Grimault, F. Meunier**
F0 slope as a cue to word segmentation in French
- PA-059
(A-0723) **Cristina Izura, Natividad Hernandez-Munoz**
The role of semantics in Spanish word recognition: An insight from lexical decision and categorization tasks
- PA-060
(A-0746) **Nicola Molinaro, Pedro Paz-Alonso, Jon Andoni Duñabeitia, Manuel Carreiras**
Semantic combinatorial processing of low-typical expressions

PA-061
(A-0754) **Simona Mancini, Manuel Carreiras, Nicola Molinaro**
Birds don't speak: an eye-movement study of the morphosyntax-pragmatics interface in agreement processing

Language Production

PA-062
(A-0031) **Asya Matushanskaya, Andreas Mädebach, Jörg D. Jescheniak, Matthias M. Müller**
Enhanced attention reveals semantic interference from distractor pictures during picture naming

PA-063
(A-0253) **Els Severens, Martin Pickering, Robert, J. Hartsuiker**
Self- and other-monitoring of speech errors.

PA-064
(A-0299) **Manuel J. Ruiz, Daniela Paolieri, Lorenza Colzato, Teresa Bajo**
Recreational cocaine use is associated with a major vulnerability to semantic interference

PA-065
(A-0334) **S. Bernolet, P. Boon, M. De Letter, R. Hartsuiker**
Do amnesics show a lexical boost to syntactic priming?

PA-066
(A-0353) **Flavia De Simone, Simona Collina, Robert J. Hartsuiker**
Contextual Self-Organizing Map: Semantic Space of Italian Words (?)

Learning

PA-067
(A-0197) **Annabelle Goujon, Joel Fagot**
Learning of Spatial Statistics in Nonhuman Primates: Contextual Cueing in Baboons (*Papio papio*)

PA-068
(A-0655) **Hakan Cetinkaya, Seda Dural**
Testing the Return of Fear after a Reconsolidation Manipulation of Fear Memory

PA-069
(A-0670) **Rose Ru-Whui Lee, Ching-Yi Chen, Sheng-Kai Lin, Yao-Ting Sung, Kuo-en Chang**
Bridging the Formal and Informal Learning for CSL learners from the Perspective of Cognitive Situated Learning

Memory

PA-070
(A-0026) **Amandine Rey, Rémy Versace**
Replication of a sensory masking effect with reactivated memory components (a memory masking effect)

PA-071
(A-0135) **Hsiang-Chun Chen, Yuh-shiow Lee**
Are Explicit Reports and Eye Movement Measures of Memory Dissociated?

PA-072
(A-0143) **Mark J. Horne, Robert H. Logie, Ian Deary, Louise Brown**
Differential use of verbal coding by young and older adults in static and dynamic visual tasks

PA-073
(A-0183) **Bonin Patrick, Gelin Margaux, Bugańska Aurélia**
Are animates better remembered than inanimates?

PA-074
(A-0190) **Vittorio Maria Iacullo, Francesco S. Marucci, Giuliana Mazzoni**
Induction of false memories by increasing/decreasing memory self efficacy

PA-075
(A-0204) **Justyna Olszewska, Sara A. Bandler, Patricia A. Reuter-Lorenz**
Stimulus input modality affects the frequency of false working memories.

PA-076
(A-0438) **Maciej Hanczakowski, C. Philip Beaman, Dylan M. Jones**
A positive side of negative priming in free recall

PA-077
(A-0440) **Caroline Vagnot, Stéphane Rousset, Lionel Brunel, Rémy Versace, Denis Brouillet**
Distinctiveness and action: what consequences on recognition judgment?

PA-078
(A-0442) **Ágnes Szöllősi, Mihály Racsmány**
The opposite effect of Time-of-Day on past and future events

PA-079
(A-0460) **Azumi Tanabe-Ishibashi, Takashi Ikeda, Nobukatsu Sawamoto, Hidenao Fukuyama, Naoyuki Osaka**

Butcher bears shop: Neural basis of implicit association between faces and scenes.

PA-080
(A-0649) **Osman İyilikci, Sonia Amado**

The relationship between long-term memory and change detection

PA-081
(A-0729) **T. A. Dovhaliuk, V. O. Voloshyna, F. U. Jönsson**

Are you sure what are you touching? Metamemory study in haptic identification performance.

Motor Control

PA-082
(A-0300) **Gethin Hughes, Florian Waszak**

The relative contribution of stimulus-driven and voluntary action selection processes in beta-band activity during motor planning.

PA-083
(A-0422) **Pinet, Hamamé, Longcamp, Vidal, Alario**

Dynamics of response preparation in word typing: Evidence from EEG

Multimodal Processing

PA-084
(A-0287) **Clio Janssens, Gilles Pourtois, Tom Verguts**

Electrophysiological correlates of cognitive control in intermodal conflict resolution

Numerical Cognition

PA-085
(A-0037) **Juan-Francisco Asueta-Lorente, Jacqueline Leybaert, Alain Content**

Impact of a training on numerical abilities in low language-skilled children.

PA-086
(A-0049) **Ronit Goldman, Joseph Tzelgov, Tamar Ben-Shalom, Andrea Berger**

Two separate processes affect the development of the mental number line

PA-087
(A-0069) **Karolien Smets, Titia Gebuis, Bert Reynvoet**

Bridging the gap between numerical cognition tasks used in different age groups: the change detection task

PA-088
(A-0091) **Bieke Maertens, Bert De Smedt, Jan Elen, Bert Reynvoet**

Improving magnitude representation and numerical estimation of preschoolers by playing a number game

PA-089
(A-0138) **Belde Mutaf, Karolien Smets, Bert Reynvoet**

Comparing two ways of control for the visual cues on non-symbolic numerosity estimation task

PA-090
(A-0352) **Julia Bahnmüller, Stefan Huber, Korbinian Moeller, Hans-Christoph Nuerk**

The relationship between number line estimation and arithmetic competencies depends on age, operation and skill

PA-091
(A-0363) **Valerie Dormal, Anne-Marie Schuller, Julie Nihoul, Mauro Pesenti, Michael Andres**

Shifting visuospatial attention to keep track of arithmetic operations: evidence from left neglect

PA-092
(A-0413) **Mirjam Wasner, Korbinian Moeller, Martin H. Fischer, and Hans-Christoph Nuerk**

Related but not the same: Ordinality, cardinality and one-to-one-correspondence in finger-number associations

PA-093
(A-0585) **Oliver Lindemann, Michael Wiemers**

Spatial interference in mental arithmetic

Perception and Action

PA-094
(A-0397) **Hanna Bednarek, Radosław Wujcik**

The influence of information processing on a false horizon illusion and pilots' effectiveness

PA-095
(A-0478) **Davide R. Mussi, Barbara F. M. Marino, Lucia Riggio**

Is the affordance effect a Simon-like effect?

- PA-096
(A-0504) **Antonello Pellicano, Houpan Horoufchin, Harshal Patel, Iring Koch, Ferdinand Binkofski**
Neural correlates of conflict resolution in an object-based Simon effect: an fMRI study

Problem Solving and Reasoning

- PA-097
(A-0062) **Mariusz Urbanski, Katarzyna Paluszkiewicz, Joanna Urbanska**
Deductive reasoning and learning
- PA-098
(A-0273) **Erel Hadas, Avioz Dganit, Abramov Viki, Ben-Zur Batel, Meiran Nachshon**
Situational Fluid Intelligence
- PA-099
(A-0433) **Agata Sobków, Czesław S. Nosal**
Individual differences in intuitive abilities and their relationships with cognitive styles
- PA-100
(A-0724) **Judit Pétervári, Amory H. Danek**
How to trigger insight - guiding to and through an impasse

Social Cognition

- PA-101
(A-0087) **Iris Žeželj, Darko Komnenić**
To appear straight or successful: impact of masculinity threat and task importance on test results
- PA-102
(A-0088) **Iris Zezelj, Biljana Jokić**
Asymmetric dominance effect depending on temporal and social distance of decision
- PA-103
(A-0130) **Ramzi Fatfouta, Angela Merkl**
Slow to Anger, Quick to Forgive: Exploring the Implicit Self-Concept of Forgiveness
- PA-104
(A-0195) **Michal Nevo, Yifat Faran, Dorit Ben Shalom**
Social comprehension and aging: What we learn from description of moving triangles.
- PA-105
(A-0366) **Biervoye Aurélie, Samson Dana**
What determines adults' difficulties in mental state inference? An investigation of the effects of type of mental states and type of executive demands.
- PA-106
(A-0395) **Letizia Palumbo, Hollie G. Burnett, Tjeerd Jellema**
Emotional anticipation in individuals with Asperger's Syndrome
- PA-107
(A-0399) **Dóra Kampis, Eugenio Parise, Gergely Csibra, Ágnes Kovács**
EEG correlates of object processing in perspective taking
- PA-108
(A-0577) **Klára Várhelyi, Zsolt Unoka**
Differential sensitivity to morphing in facial judgments of trustworthiness, dominance and gender
- PA-109
(A-0580) **Eszter Beran, Peter Kardos, Peter Soltesz, Anna Rácz, Zsolt Unoka**
The effects of relationship quality on social network organization
- PA-110
(A-0612) **Tiffany Morisseau, Martial Mermillod, Ira Noveck**
How social motivation drives joke appreciation
- PA-111
(A-0623) **Mert Tekozel**
How others perceive the socially excluded target?
- PA-112
(A-0751) **Ivana Konvalinka, Markus Bauer, James Kilner, Andreas Roepstorff, Chris Frith**
Believing versus interacting: Behavioural and neural mechanisms underlying interpersonal coordination

Spatial Cognition

- PA-113
(A-0242) **Stephanie N. Pantelides, Marios N. Avraamides, Jonathan W. Kelly**
Integrating spatial information across vision and language

PA-114 (A-0254) **Daniele Nardi, Roberta Meloni, Joanna Ganczarek, Marta Olivetti-Belardinelli**
Where is uphill? The contribution of visual cues for slope detection in 2D images.

PA-115 (A-0474) **Anthi Diavastou, Alexia Galati, Marios N. Avraamides**
The speaker's assumed needs influence the interpretation of spatial descriptions: Evidence from listeners' eye-gaze in a perspective-taking task

Visual Processing

PA-116 (A-0038) **B. Andrews, D. Aisenberg, G. d'Avossa, A. Sapir**
The contribution of reading direction to the assumed light source: Evidence from English and Hebrew readers

PA-117 (A-0275) **Virginie Drabs, Fabienne Chetail, Alain Content**
Interference of consonant/vowel letter categorization on physical and nominal identity judgments

PA-118 (A-0291) **Krisztina Kecskés-Kovács, István Sulykos, István Czigler**
Category specific responses to human gender face stimuli: A visual mismatch negativity study

PA-119 (A-0301) **István Sulykos, István Czigler**
Visual mismatch negativity is sensitive to Craik-Cornsweet-O'Brien illusion.

PA-120 (A-0417) **G. Sierro, C. Cappe, M. H. Herzog, C. Mohr**
Visual backward masking performance is modulated by sex and schizotypy

PA-121 (A-0730) **Sara Spotorno, Guillaume S Masson, Anna Montagnini**
The effect of task set on fixational saccadic eye movements

THURSDAY | AUGUST 29

18:00-18:30

OPENING (Room: Harmonia)

THURSDAY | AUGUST 29

18:30-19:30

BROADBENT LECTURE (Room: Harmonia)

A-0770 **Glyn Humphreys, Jie Sui**
The salient self: how self-prioritization modulates perception

TALK SESSION 1 | 09:00-11:00**IMPLICIT COGNITION: CURRENT THEORIES AND METHODS
SYMPOSIUM (ROOM: 0.81)***Chair: Dezso Nemeth*

Implicit learning occurs when information is acquired from an environment of complex stimuli without conscious access either to what was learned or to the fact that learning occurred. In everyday life, this learning mechanism is crucial for adapting to the environment and for predicting events unconsciously. Implicit learning underlies not only motor, but also cognitive and social skills; it is therefore an important aspect of life from infancy to old age. Moreover, this kind of learning does not occur only during practice, in the so-called online periods, but also between practice periods, during the so-called offline periods. The process that occurs during the offline periods is referred to as consolidation, which denotes the stabilization of a memory trace after the initial acquisition; this can result in increased resistance to interference or even improvement in performance following an offline period. Understanding the multiple aspects and influencing factors of implicit cognition can help us to reveal the nature of memory and changes in brain plasticity. Our symposium focuses on the current experimental and analysis methods in this field. How can we measure implicit cognition in different domains? What are the advantages and disadvantages of the experimental methods? Which are the effective experimental methods and data analysis technics to separate the implicit processes from the explicit? Moreover this symposium will critically review the theories of implicit cognition and give an insight into recent theoretical advances.

- A-0530 **Axel Cleeremans**
The reach of the unconscious
- A-0283 **Ferenc Kemény, Ágnes Lukács**
Modality-free sequence learning
- A-0144 **Beat Meier**
Implicit task sequence learning
- A-0558 **Dezso Nemeth, Karolina Janacsek**
How to measure probabilistic sequence learning and its consolidation?
- A-0420 **Vinciane Gaillard, Arnaud Destrebecqz, Antoine Pasquali, Axel Cleeremans**
The process dissociation procedure in sequence learning: 10 years of research

**ATTENTION, EXPECTATION AND PREDICTION AND THEIR EFFECTS ON EARLY AUDITORY
PROCESSING
SYMPOSIUM (Room: 0.83)***Chair: Kathrin Lange*

In recent years, a growing number of studies has used rhythmic sequences to induce a temporal orienting of attention. With regard to the electrophysiological consequences of temporal orienting, the results of these studies were heterogeneous, partly diverging from typical attention-related enhancements of early, auditory processing and consisting of amplitude reductions of the associated event-related potentials (ERPs). Since these amplitude reductions resemble effects observed in studies investigating sensory or motor predictability, the question arises as to whether the two phenomena might be related. The symposium brings together researchers investigating effects of attention and prediction on auditory (and visual) processing from different perspectives: Diana Cutanda and Daniele Schön focus on effects of attention induced by auditory rhythms/entrainment, while Erich Schröger and Michael Schwartze explore how sensory predictions influence exogenous brain responses. Janos Horvath studies how the perception of action-sound coincidences – which is often regarded to depend on the prediction of the sound by the action - is influenced by attention. The intention of the symposium is to juxtapose the ERP effects of temporal attention and predictability in various settings (e.g. music, rhythms, speech, motor-related processes) and to discuss different interpretations of these effects with respect to their potential functional significance.

- A-0768 **Diana Cutanda, Ángel Correa, Daniel Sanabria**
A dual-task approach to study temporal preparation induced by auditory and visual rhythms
- A-0272 **Daniele Schön**
Musical resonance: temporal hierarchies and dynamic attending
- A-0477 **Erich Schröger, Andreas Widmann, Alexandra Bendixen, Katja Saupe, Nelson Trujillo-Barreto, Iria SanMiguel**
Strong sensory predictions for a sound modulate and even elicit exogenous brain responses
- A-0347 **Michael Schwartz, Sonja A. Kotz**
Arranging events in time: ERPs reflect optimized and impaired use of temporal structure
- A-0206 **János Horváth**
The role of attention in action-related auditory attenuation

WORKING MEMORY (Room: 0.79)

- A-0401 **Yoav Kessler, Liad Baruchin, Anat Bouhsira-Sabag**
Updating and maintenance of task-context in working memory
- A-0672 **Kristof Kovacs, Andrew R.A. Conway**
A process overlap theory of the positive manifold: Intelligence
- A-0675 **Andrew R.A. Conway, Kristof Kovacs**
A process overlap theory of the positive manifold: Working memory capacity
- A-0408 **Chen Didi-Barnea, Yonatan Goshen-Gottstein**
Accessing Our Memory: In Support of the Continuous Dual-Process Model of Recognition Memory
- A-0627 **Hagit Magen**
Low and high-level visual stimuli compete for visual-short term memory storage capacity
- A-0657 **Tomer Carmel, Dominique Lamy**
The cost of updating object-file information in short-term memory

TASK SWITCHING (Room: 1.79)

- A-0261 **Iring Koch, Iris Blotenberg, Jessica Freiherr**
The attentional dynamics of olfaction: Evidence from a bimodal switching paradigm
- A-0709 **Vera Lawo, Janina Fels, Josefa Oberem, Iring Koch**
Exploring the influence of response demands on auditory attention switching
- A-0235 **Thomas Kleinsorge, Juliane Scheil**
Task switching among two or four tasks: Effects of a short-term variation of the number of candidate tasks
- A-0581 **Charlotte Forrest, Stephen Monsell, Ian McLaren**
Does performance in task-cueing experiments reflect compound retrieval or task-set control?
- A-0618 **Heike Elchlepp, Amanda Clapp, Antonia East, Aureliu Lavric, Stephen Monsell**
Is preparation for a language switch like preparation for a task switch?
- A-0140 **Denise Nadine Stephan, Iring Koch, Jessica Hendler, Lynn Huestegge**
Task Switching, Modality Compatibility, and the Supra-Modal Function of Eye Movements

WORKING MEMORY AND VISUO-SPATIAL PROCESSES (Room: 0.87)

- A-0066 **Alessandro Guida**
Another SPARC while hunting the SNARC on short-term memory lands: What if order in verbal short-term memory was coded spatially?
- A-0170 **Steve Majerus, Lucie Attout**
Coding of serial order in verbal working memory is supported by ordinal representations shared with numerical cognition
- A-0454 **Jelena Havelka, Richard Allen, Steve Darling, Thomas Falcon, Sally Evans**
Dissociating working memory contributions to visuospatial bootstrapping
- A-0556 **Elke B. Lange, Sebastian Henschke, Ralf Engbert**
Eye movement strategies for visual-spatial memory encoding
- A-0744 **Fabien Mathy**
Short-term memory tasks coupled with online chunking: a straight measure of working memory.
- A-0673 **Gras Gyselinck**
Visual and verbal information for and in spatial models.

WORKING MEMORY UPDATING: DISCOVERING ITS NATURE FROM THE STUDY OF DIFFERENT MATERIALS AND TASK PROCEDURES AS WELL AS INDIVIDUAL DIFFERENCES SYMPOSIUM (Room: 0.89)

Chair: Paola Palladino

Working memory (WM), the limited-capacity system maintaining and processing information, is likely to work largely through the mechanism of updating. Historically, WM updating was conceptualized by Morris and Jones (1990) as the replacement of current memory content by new material. Some parts of the current content remain untouched, while other parts change, thus giving WM simultaneous stability and flexibility. However the interpretation of updating serial recall results suggested that, typically, participants do not adopt a strategy of actively updating the memory list (see Bunting, Cowan & Saults, 2006; Palladino & Jarrold, 2008).

Therefore some effort has been recently dedicated to better understand updating nature comparing different task procedures, different materials and manipulating task demand in addition to the exam of poor updating performance in groups with specific learning problem or in a developmental perspective.

I believe exploration of these issues, i.e. measurement of updating, and the specific object of updating, is timely and worthy of investigation in current WM updating research. In particular, the object of updating and its measurement are likely to be crucial when dealing with updating, both theoretically and empirically. To address these issues the symposium will discuss few studies focused on such specific research questions.

- A-0330 **S. Pelegrina, C. Lendínez, M. T. Lechuga**
The role of similarity in updating numerical information in working memory
- A-0323 **Demis Basso, Marta Botto, Paola Palladino, Marcella Ferrari**
When Working Memory Updating requires updating: Analysis of Serial Position in a Running memory task
- A-0152 **Ullrich Ecker, Stephan Lewandowsky, Klaus Oberauer**
Removal of information from working memory
- A-0045 **Cesare Cornoldi, Silvia Drusi, Chiara Tencati, David Giofrè, Chiara Mirandola**
Problem Solving and Working Memory Updating Difficulties in a Group of Poor Comprehenders
- A-0467 **Caterina Artuso, Paola Palladino**
Redintegration cost in working memory binding updating

SOCIAL COGNITION 1 (Room: 0.99)

- A-0653 **M. Falkiewicz, J. Sarzynska, I. Szatkowska, A. Grabowska**
The difficult truth effect: are deception and honesty so different?

- A-0021 **John Michael**
The Sense of Commitment
- A-0329 **Denis Tatone, Gergely Csibra**
Infants' expectations about positive contingent reciprocity
- A-0739 **P. Papp, P. Kincses, A. Deák, T. Bereczkei**
Neural correlates of Machiavellians in a fair and non-fair situation
- A-0748 **Ferenc Kocsor, Tamás Bereczkei**
From mate choice preferences to stereotypes – the cognitive model of face processing as an integrative framework
- A-0757 **Beatrix Lábadi, Mónika Juhász, Franciska Fauszt, Rita Négele, Judit Szentiványi**
Adaptation to facial trustworthiness

NUMERICAL COGNITION: ACQUISITION AND DISORDERS (Room: 0.100A)

- A-0184 **Florence Gabriel, Denes Szucs, Alain Content**
Processing and Mental Representations of Fractions
- A-0185 **Arava Y. Kallai, Christian D. Schunn, Julie A. Fiez**
Improving number representations and math performance through simple arithmetical training: a behavioral and fMRI study
- A-0551 **Gaëlle Meert, Jacques Grégoire, Marie-Pascale Noël**
The processing of symbolic and non-symbolic numerical ratios
- A-0608 **Sarit Ashkenazi**
Neuro-anatomical landmarks of domain-general vulnerabilities in developmental dyscalculia: emotional and cognitive aspects.
- A-0671 **Elena Salillas, Cristina Gil, Alejandro Martinez, Manuel Carreiras**
ERPs reveal a durational processing deficit in Developmental Dyscalculia.
- A-0727 **Denes Szucs, Amy Devine, Fruzsina Soltesz, Alison Nobes, Florence Gabriel**
Testing theories of developmental dyscalculia

DECISION MAKING (Room: 0.100B)

- A-0243 **T. Stevens, A. Lavric, I. P. L. McLaren, C. D. Chambers, F. Verbruggen**
How does stopping your response influence decision-making when gambling?
- A-0470 **Nathalie Schouppe, Senne Braem, Jelle Demanet, Nico Boehler, Jan De Houwer, Tom Verguts, Massimo Silvetti, Richard Ridderinkhof, Wim Notebaert**
The bivalent affective nature of conflict and its role in decision-making
- A-0201 **Eliana Vassena, Ruth Krebs, Massimo Silvetti, Wim Fias, Tom Verguts**
To gamble or not to gamble? Probability, reward prediction and choice in medial prefrontal cortex
- A-0359 **Simona Sacchi, Patrice Rusconi, Mattia Bonomi, Paolo Cherubini**
Effects of asymmetric questions on impression formation: A trade-off between evidence diagnosticity and frequency
- A-0466 **Albert Costa, Alice Foucart, Inbal Arnon, Melina Aparici, Jose Apesteguia**
Decision making: reduced biases in foreign language
- A-0289 **Alina Kolańczyk, Marta Roczniowska, Radosław Sterczyński**
Which thought is important? The affective self-regulation of thinking in a promotion vs. prevention mind-set

11:00-13:30

POSTER SESSION B (Room: Aula)

Action Perception

PB-001 **Joanna Wincenciak, Jennifer Ingham, Tjeerd Jellema, Nick E. Barraclough**
(A-0430) Two systems for emotional action processing

Attention

PB-002 **Lara Bardi, Sami Schiff, Daniela Mapelli**
(A-0311) Modulating the effect of learning on spatial conflict: a tDCS study

PB-003 **Christina Reimer, Tilo Strobach, Torsten Schubert**
(A-0324) Electrophysiological and behavioral evidence for independent deployment of visuo-spatial attention in a dual-task situation

PB-004 **Magali Kreutzfeldt, Denise N. Stephan, Walter Sturm, Klaus Willmes, Iring Koch**
(A-0342) Cross-modal Selective Attention in Numerical and Spatial Task Switching

PB-005 **Laurens Van Calster, Martial Van Der Linden, Arnaud D'Argembeau, & Steve Majerus**
(A-0402) Task-related versus stimulus-related attention style as reflected by distractor detection sensitivity in a verbal short-memory task.

PB-006 **D. A. Hayward, L. Guttman, J. Ristic**
(A-0434) Seeing the face in the crowd: Robust social attention across perceptual load.

PB-007 **Neta Salner, Naama Friedmann, Eran Chajut**
(A-0571) The Effect of Attention Allocation on Letter Transpositions in Reading

PB-008 **Zaira Cattaneo, Carlo Cecchetto, Silvia Cucchi, Carlotta Lega, Costanza Papagno, Tomaso Vecchi**
(A-0660) Effects of intense musical training and deafness on spatial attention: evidence from line bisection

PB-009 **Luca Rinaldi, Samuel Di Luca, Avishai Henik, Luisa Girelli**
(A-0663) An Interactive Account of visuo-spatial asymmetries: developmental and cross-cultural evidence

PB-010 **Lisa S. Arduino, Inbar Lucia Trinzcer, Chiara Valeria Marinelli, Naama Friedmann**
(A-0718) How different reading habits influence word bisection: Evidence from Italian and Hebrew

PB-011 **Angela Riccio, Luca Simione, Francesca Schettini, Alessia Pizzimenti, Maurizio Inghilleri, Marta Olivetti, Donatella Mattia, Febo Cincotti**
(A-0735) Brain Computer Interface and Amyotrophic Lateral sclerosis: attention and P300-based BCI performance.

Audition

PB-012 **Calcus, Colin, Kolinsky**
(A-0710) Context-dependent perception of speech in noisy backgrounds

Bilingualism/Multilingualism

PB-013 **Roger Boada, Pilar Ferré, Juan Haro, José M. Gavilán, Rosa Sánchez-Casas**
(A-0318) Primed translation recognition of translation ambiguous homonyms

PB-014 **Daniela Paolieri, Francisca Padilla, Olga Koreneva, Pedro Macizo**
(A-0426) Gender congruency effect in second language recognition and production: Evidence from Russian-Spanish bilinguals

PB-015 **Cornelia Moldovan, Rosa Sánchez-Casa, Josep Demestre, Pilar Ferré, Judith Kroll**
(A-0432) Does language immersion affect the mappings of words to concepts in the bilingual lexicon?

Cognition and Emotion

- PB-016 (A-0428) **G. M. Cseh, I. H. Phillips, D. G. Pearson**
Flow, Mood, and Visual Creativity
- PB-017 (A-0499) **Audrey Milhau, Thibaut Brouillet, Loïc Heurley, Lionel Brunel, Denis Brouillet**
What is left can be "right": Effect of active hand on right-handers' valence/laterality associations
- PB-018 (A-0528) **Shiran Oren, Yoav Kessler, Bat-Sheva Hadad, Galia Avidan**
The Effects of Emotional Arousal on Visual Working Memory
- PB-019 (A-0541) **Marta Siedlecka, Borysław Paulewicz, Edward Nęcka**
Intuition in problem solving: affective influence on metacognitive judgments and performance.
- PB-020 (A-0566) **Brice Beffara, Bruno Wicker, Nicolas Vermeulen, Marc Ouellet, Amélie Bret, Maria Jesus Funes Molina, Martial Mermillod**
Does Low Spatial Frequency Information Really Have a Preferential Role in Emotional Frontal Inhibition?
- PB-021 (A-0588) **Ezgi Aytürk, Banu Çankaya, Sami Gülgöz**
The Role of Personality and Emotional State on Risk Taking Behavior
- PB-022 (A-0597) **L. G. Gawryszewski, S. Oliveira-Carvalho, M. Coppo, L. Kamarowski**
Hemispheric specialization for Favorite and Rival soccer team
- PB-023 (A-0638) **A. Chetverikov, M. Filippova**
Unpleasantness of being wrong: Affective consequences of errors in perceptual categorization
- PB-024 (A-0652) **Jenny Kokinous, Alessandro Tavano, Sonja A. Kotz, Erich Schröger**
Early auditory emotion processing is sensitive to distinct spatial frequency predictive information – An ERP study of face-voice perception
- PB-025 (A-0690) **Tímea Folyi, Dirk Wentura**
Early attentional enhancement for positively and negatively valenced tones

Cognitive Development

- PB-026 (A-0008) **Hélène Labat, Annie Magnan, Jean Ecalte**
Highlighting the shape of letter facilitates the writing acquisition: Differential approach
- PB-027 (A-0020) **Delphine Sasanguie, Emmy Defever, Bert Reynvoet**
The approximate number system is not predictive for symbolic number processing in kindergartners
- PB-028 (A-0100) **Mélany Payoux, Nadège Verrier, Yves Corson**
Age differences in children's susceptibility to Immediate Misinformation Acceptance: who are the most vulnerable?
- PB-029 (A-0131) **Fumikazu Furumi, Masuo Koyasu**
Effects of Role-play Experience on Primary School Children's Mindreading of People with Restricted Color Vision
- PB-030 (A-0424) **Eszter Szabó, Ágnes Melinda Kovács**
Neural correlates of object tracking and object maintenance in 6-month-olds
- PB-031 (A-0598) **Mako Okanda, Shoji Itakura**
Do preschoolers exhibit a yes bias to complex yes-no questions regarding to their knowledge?
- PB-032 (A-0658) **Masood Nadeem, Samar Fahd, Shazara Mahmood, Abida Parveen, Sadia Iqbal**
Translation and Validation of MCQ-30: A Pilot Study on Pakistani Adults

Consciousness

- PB-033 (A-0365) **Emeline Boursain, Julie Bertels, Vinciane Gaillard, Arnaud Destrebecqz**
Is visual statistical learning exclusively implicit in children?
- PB-034 (A-0629) **Kelly Rowe, Michael Mrazek, Brett Ouimette, Jonathan Schooler**
Is Belief in Free-will Under Our Control? Self Reported Mind Wandering is Negatively Associated With Belief in Free-will
- PB-035 (A-0654) **Koculak, Webbink, Binder**
Touching consciousness - using somatosensory stimulation in detecting conscious responses

Developmental Disorders

- PB-036 (A-0057) **Eric Soetens, Ilse Peeters, Smadar Celestin-Westreich**
Derangement of conflict adaptation with emotional stimuli in children with ADHD.
- PB-037 (A-0244) **Claudia Caprile, Jose Angel Alda, Estrella Ferreira, Ruben Moreno, Jordi Navarra**
Experimental paradigms for an objective diagnosis of ADHD
- PB-038 (A-0535) **Lucie Attout, Steve Majerus**
Deficits in short-term memory for serial order in adults with developmental dyscalculia: Evidence from fMRI

Executive Control and Working Memory

- PB-039 (A-0025) **Olga Entel, Joseph Tzelgov, Yoella Bereby-Meyer**
Task conflict versus Informational conflict in the Stroop Effect
- PB-040 (A-0146) **Gesine Dreisbach, Rico Fischer, Julia Fritz**
How fluency of processing modulates sequential conflict adaptation
- PB-041 (A-0151) **A. Lucidi, V. Loaiza, V. Camos, P. Barrouillet**
The measurement of working memory capacity through time-constrained elementary activities
- PB-042 (A-0159) **Nina Hiebel, Hubert D. Zimmer**
Individual differences in filtering efficiency and resistance to attention capture
- PB-043 (A-0237) **Juliane Scheil, Thomas Kleinsorge**
N-2 repetition costs are determined by preparation
- PB-044 (A-0445) **Jason M Doherty, Robert H Logie**
Resource Sharing Effects in a Multiple Component Memory System
- PB-045 (A-0473) **Joanna Fryt**
Relationships between behavior ratings and performance-based measures of executive function in children
- PB-046 (A-0491) **Dorota Żelechowska, Justyna Sarzyńska, Edward Nęcka**
Near and far-transfer effects of working memory training for children
- PB-047 (A-0576) **Hsueh-Sheng Chiang, Hsu-Wen Huang, Chih-Mao Huang**
Functional imaging studies of executive functions in normal and pathological processes of aging: a quantitative meta-analysis
- PB-048 (A-0688) **Péter Pajkossy, Ágnes Szöllösi, Mihály Racsmány**
Online investigation of attentional processes in the Intradimensional/Extradimensional Shifting Task: an eye-tracking study.
- PB-049 (A-0697) **Marek Muszyński, Zofia Wodniecka, Edward Necka**
Language proficiency and the magnitude of Stroop effect- a role of proportion congruent.

Judgment and Decision Making

- PB-050 (A-0033) **Annukka K. Lindell, Evan Kidd**
Consumers favor ‚Right Brain‘ training: brain-based product names influence perceptions of interest, efficacy, and scientific rationale.
- PB-051 (A-0476) **Pavel V. Voinov, Günther Knoblich, Natalie Sebanz**
Within- and between-person integration of visuo-spatial information
- PB-052 (A-0514) **Yuko Yamasaki, Chikage Ishizaki**
Factors that determine citizens‘ views on capital punishment
- PB-053 (A-0537) **Emine Akman, Seda Dural**
Attractiveness vs. Status Contrast: An Eye-Tracking and Divided Visual Field Study

Language Acquisition

- PB-054 (A-0398) **Mybeth Lahey, Elizabeth K. Johnson, Mirjam Ernestus**
Do toddlers recognize reduced pronunciation variants?
- PB-055 (A-0400) **Masataka Nakayama, Yuya Ishibashi, Megumi Masuda, Yuki Nozaki, Atsuko Tominaga, Yuki Tanida, Satoru Saito**
Are bi-mora frequency effects position-specific? Accumulation and implementation of long-term phonological knowledge for serial ordering
- PB-056 (A-0714) **Linda Garami, Anett Ragó, Ferenc Honbolygó, Valéria Csépe**
Situation related or long-term expectations – prosodic processing in infancy

Language Comprehension

- PB-057 (A-0326) **Antje Lorenz, Jens Bölte, Pienie Zwitserlood**
Modifier frequency and semantic transparency affect compound reading in German: Evidence from eye-tracking
- PB-058 (A-0350) **Anna Petrova, Simone Sulpizio, Eduardo Navarrete, Remo Job, Caterina Suitner, Francesca Peressotti**
Foot or X down? Response compatibility but no effects of the object’s typical location. Several failures to replicate Estes, Verges & Barsalou (2008)
- PB-059 (A-0450) **Alastair Smith, Padraic Monaghan, Falk Huettig**
Both phonological grain-size and general processing speed determine literacy related differences in language mediated eye gaze: Evidence from a connectionist model
- PB-060 (A-0516) **Elisabeth Beyersmann, Samantha F. McCormick, Kathleen Rastle**
Letter transpositions within morphemes and across morpheme boundaries
- PB-061 (A-0538) **K. E. Bartlett, A. R. Weighall, J. L. Morgan**
The role of familiarity and irregularity in rapid lexical access: Evidence from txt msg shortcuts
- PB-062 (A-0545) **Aaron Veldre, Sally Andrews**
Skilled reading proficiency and parafoveal lexical activation
- PB-063 (A-0607) **Eva Rosa, Peter Enneson, Manuel Perea**
The role of letter features in visual-word recognition: Evidence from a delayed segment technique
- PB-064 (A-0609) **Sofia Loui, Athanassios Protopapas**
The role of inflectional suffixes and grammatical category in lexical processing of Greek words

Language Production

- PB-065 (A-0369) **Zeshu Shao, Esther Janse, Antje S. Meyer**
What do verbal fluency tasks measure
- PB-066 (A-0444) **Sara Rodríguez- Cuadrado, Albert Costa Martínez**
On the nature of the „Attenuation of Information“ phenomenon: the contribution of bilingualism
- PB-067 (A-0492) **Alma Veenstra, Daniel J. Acheson**
The Production of Subject-Verb Agreement
- PB-068 (A-0579) **Ronald Peereman, Sonia Kandel**
Investigating double letter representation in words: A cross-linguistic study of handwriting production in French and Italian

Learning

- PB-069 (A-0148) **A. Franco, C. Carvalho, P. Ventura, B. de Gelder, R. Kolinsky**
How literacy acquisition influences visual processing of faces and objects
- PB-070 (A-0234) **Paola Crespo-Bojorque, Juan M. Toro**
Are complex vocalizations necessary for consonance processing?
- PB-071 (A-0390) **Miriam Gade**
Contextual influences in a multitasking setting: what information is useful?
- PB-072 (A-0750) **Marie-Line Bosse, Nathalie Chaves**
The role of handwriting and of spelling aloud practices on orthographic acquisition

Memory

- PB-073 (A-0034) **Isabelle Simoes Loureiro, Laurent Lefebvre**
The development of the semantic network in childhood and its deterioration in Alzheimer's disease: a comparative study
- PB-074 (A-0175) **Lara Charlesworth, Richard Allen, Jelena Havelka, Chris Moulin**
Memory and the dynamic self: restructuring of the self following nostalgic reverie
- PB-075 (A-0180) **Sara Bottioli, Elena Cavallini, John Dunlosky, Christopher Hertzog, Emanuela Capotosto, Rossana De Beni, Giorgio Pavan, Tomaso Vecchi, Erika Borella**
Self-help memory intervention: analysis on specific and transfer effects in community dwelling and rest-home resident older adults
- PB-076 (A-0186) **Aurélia Bugaiska, Sophie Duhamel, Martial Mermillod, Patrick Bonin**
Does the thought of death contribute to the memory benefit of encoding with a survival scenario?
- PB-077 (A-0205) **I. Dagry, L. Corbin, V. Camos, P. Barrrouillet**
Are declarative and procedural working memory independent?
- PB-078 (A-0213) **Mélanie Cerles, Eric Guinet, Stéphane Rousset**
Biasing remembering: The effect of egocentric-updating fluency in episodic memory reconstruction process
- PB-079 (A-0219) **Sofia Frade, Mara Alves, J. Frederico Marques, Ana Raposo**
the interaction of retrieval cue and encoding task on source memory
- PB-080 (A-0475) **Florian Chmetz, Delphine Preissmann, Mathieu Arminjon, Andrea Duraku, François Ansermet, Pierre Magistretti**
Embodied memory: memory malleability by facial feedback manipulation during reconsolidation.
- PB-081 (A-0502) **Marek Kowalczyk**
Impaired memory for material related to the demands of a problem solved prior to encoding: Reduced accessibility of problem-related items or interference at recall?

- PB-082
(A-0512) **Rotem Saar, Jonathan E. Cohen, Jonathan Guez, Chris Gasho, Ilan Shelef, Alon Friedman, Hadar Shalev**
Reduced Corpus-Callosum volume in Posttraumatic stress disorder highlights the importance of inter-hemispheric connectivity for associative memory
- PB-083
(A-0533) **Peter D. Weller, Michael C. Anderson, Teresa Bajo**
Effects of Mnemonic Suppression on Distractor Processing
- PB-084
(A-0546) **Mine Misirlisoy, Suzan Ceylan, Nart Bedin Atalay**
Effects of Survival Processing on Vulnerability to Misinformation
- PB-085
(A-0631) **Carmen Aguirre, Carlos J. Gómez-Ariza, Giuliana Mazzoni, M^a Teresa Bajo**
Further evidence that selective cues to intentionally forget may cause forgetting

Methods

- PB-086
(A-0389) **Virpi Kalakoski, Henriikka Ratilainen, Jani Lukander, Simo Salminen**
A New Questionnaire on Cognitive Failure and Work Conditions
- PB-087
(A-0668) **Michael Stevens, Marc Brysbaert**
Measurement reliability in megastudies.

Motor Control

- PB-088
(A-0536) **Andrea Kóbor, Ádám Takács, Donna Bryce, Dénes Szűcs, Ferenc Honbolygó, Péter Nagy, Valéria Csépe**
Impaired inhibitory control in ADHD: evidence from an ERP study

Multimodal Processing

- PB-089
(A-0562) **Jordi Navarra, Irune Fernández-Prieto, Joel Garcia-Morera**
Realigning thunder and lightning: Temporal adaptation to spatiotemporally distant stimuli
- PB-090
(A-0593) **Ágoston Török, Daniel Mestre, Ferenc Honbolygó, Pierre Mallet, Jean-Marie Pergandi, Valéria Csépe**
It's only real if you see it: surround system based 3D sound source modelling in virtual reality

Numerical Cognition

- PB-091
(A-0360) **Zahira Z. Cohen, Avishai Henik**
Subitizing in the Tactile Modality and Finger Counting
- PB-092
(A-0421) **Carrie Georges, Danielle Hoffmann, Christine Schiltz**
The SNARC effect and its relationship to spatial abilities in women
- PB-093
(A-0446) **Emmy Defever, Bert De Smedt, Bert Reynvoet**
Numerical matching judgments in children with mathematical learning disabilities
- PB-094
(A-0457) **Atanas Kirjakovski, Eriko Matsumoto**
Contextual and verbal influences on number representation
- PB-095
(A-0485) **Javier García-Orza, Patricia Carratalá**
Is math anxiety caused by a deficit in basic numerical skills? A study using numerical and non-numerical tasks
- PB-096
(A-0547) **Anat Prior, Michal Katz, Islam Mahajna, Orly Rubinsten**
Numerical processing in bilinguals is influenced by the structure of number words in both languages
- PB-097
(A-0683) **Katia Carbè, Veronique Ginsburg, Mariagrazia Ranzini, Wim Gevers**
Investigating the spatial coding with magnitude concepts
- PB-098
(A-0685) **D. Peeters, T. Degrande, L. Verschaffel, K. Luwel**
Anchor-based strategies in number line estimation
- PB-099
(A-0766) **Elisabet Tubau, Eric D. Johnson**
Individual Differences in Numeracy: Accessing Magnitudes in a Comparison Switch Task

Perception and Action

- PB-100
(A-0281) **Johanna Bogon, Gesine Dreisbach**
Angry words... Boundary conditions of feature-response bindings for different voice features
- PB-101
(A-0572) **Katharina Zwosta, Hannes Ruge, Uta Wolfensteller**
Neural networks supporting explicit goal-directed behavior: A central role of the posterior temporo-parietal junction
- PB-102
(A-0733) **Yann Coello, Isabelle Bonnotte**
The mutual roles of action representations and spatial deictics in French language

Problem Solving and Reasoning

- PB-103
(A-0575) **John A. Dewey, Thomas H. Carr**
Self-initiated motion is perceived as slower than externally initiated motion

Rhythm and Timing

- PB-104
(A-0630) **D. B. Terhune, Benjamin Marshall, Roi Cohen Kadosh**
Spatial magnitude modulates the perceived duration of deviant stimuli: Evidence against attentional theories of the oddball effect

Social Cognition

- PB-105
(A-0043) **Yuki Nozaki, Masuo Koyasu**
Effects of emotional intelligence on inhibiting retaliation for ostracism
- PB-106
(A-0106) **Susan Chequer, Rapson Gomez**
Evaluating the construct validity of Implicit Association Tests using Confirmatory Factor Analysis models.
- PB-107
(A-0265) **Cordula Vesper, Günther Knoblich, Natalie Sebanz**
Motor Simulation in Joint Action: Evidence from Performing and Imagining Coordinated Jumping
- PB-108
(A-0276) **Tal Moran, Yoav Bar-Anan**
The Effect of Object-Valence Relations on Automatic Evaluation
- PB-109
(A-0451) **Barbara C. N. Müller, Anna K. Oostendorp, Simone Kühn, Marcel Brass, Ap Dijksterhuis, Rick B. van Baaren**
When triangles become human: Action co-representation for objects.
- PB-110
(A-0455) **Lize De Coster, Roeljan Wiersema, Marcel Brass**
Being imitated and pain observation in adults with high functioning autism
- PB-111
(A-0510) **Mathieu Arminjon, Amer Chamseddine, Vladimir Kopta, Aleksandar Paunović, Christine Mohr**
Adding lying and non-lying cues to faces: when do we start doubting others?
- PB-112
(A-0692) **Dávid Takács, Zoltán Kondé**
Social intelligence and the prediction of others' affective reactions
- PB-113
(A-0695) **Alp Giray Kaya**
Need-threat and affective responses to ostracism by outperforming or outperformed sources
- PB-114
(A-0760) **Gerda Margit Szalai, Katalin Egyed**
Toddlers Understanding of The socially mediated representational function of symbols

Spatial Cognition

- PB-115
(A-0221) **Christina Adamou, Marios N. Avraamides, Jonathan W. Kelly**
Integration of spatial information across visual experiences.
- PB-116
(A-0325) **Demis Basso, Milvia Cottini, Claus-Christian Carbon**
Estimation of distances and linguistic preference in South Tyrolean inhabitants

PB-117 **Ineke J. M. van der Ham**
(A-0373) Effects of culture and education on geometrical knowledge

PB-118 **Joanna Ganczarek, Vezio Ruggieri, Marta Olivetti Belardinelli, Daniele Nardi**
(A-0574) Pictorial space perception, body sway and eye movements

Visual Processing

PB-119 **Léa Pasqualotti, Thierry Baccino**
(A-0171) Reading and searching on Web Pages with Advertisements: the Impact of Distance and Animation on Visual Strategies

PB-120 **Andreas Gartus, Helmut Leder**
(A-0595) Aesthetic evaluation of abstract patterns with small deviations from symmetry

PB-121 **Pilar Tejero, Manuel Perea, María Jiménez**
(A-0622) Can the lower/upper part of a word be processed as a whole word? Evidence from the Stroop task

PB-122 **Jeppé Høy Christensen, Mads Dyrholm, Søren Kyllingsbæk**
(A-0717) Cortical Pulse-Inhibition Hinders Identification of Briefly Presented Stimuli at Low Contrast

FRIDAY | AUGUST 30

TALK SESSION 2 | 13:30-15:30

NEUROCOGNITIVE CORRELATES OF COGNITIVE CONTROL SYMPOSIUM (Room: Harmonia)

Chair: Lorenza Colzato

Frontal lobe circuits have a crucial role in the cognitive control of our thoughts and goal-directed behaviour. At least four control functions can be distinguished: “shifting” (also called “flexibility”) between tasks, mental sets and “updating” (and monitoring of) working memory (WM) representations, the “inhibition” of prepotent responses, decision-making and interference control. Apart from being empirically separable, they also seem to rely on different cortical structures. To give a complete overview of this complex phenomenon, this symposium will be interdisciplinary. Cognitive control will be presented from different perspectives and using different methodologies, behavioral, hormonal, pharmacological, clinical, genetic and brain-imaging studies.

A-0092 **Lorenza S. Colzato, Wery P. M. van den Wildenberg, Bernhard Hommel**
Cognitive control and the COMT Val158Met polymorphism: Genetic modulation of videogame training and transfer to task-switching efficiency

A-0511 **Franziska Plessow, Susann Schade, Clemens Kirschbaum, Rico Fischer**
Dual-tasking under stress: Context-sensitive adjustment of task shielding in conditions of acute stress
In dual-task performance, recent research showed increased between-task interference reflecting more parallel task processing in conditions of acute stress.

A-0371 **Martijn J. Mulder, Eric-Jan Wagenmakers, Roger Ratcliff, Wouter Boekel, Birte U. Forstmann**
Neural correlates of bias in perceptual decision making

A-0264 **Moran Israel, Asher Cohen**
The Simon effect across tasks: Boundary conditions for control

A-0763 **Sanne de Wit**
On the chains of habit - a neuropsychological perspective

- A-0086 **Bernhard Hommel, Soghra Akbari Chermahini, Wery P.M. van den Wildenberg, Lorenza S. Colzato**
 Cognitive control of convergent and divergent thinking: a control-state approach to human creativity

**PERSPECTIVE TAKING IN COMMUNICATIVE ACTS
 SYMPOSIUM (Room: 0.81)**

Chair: Shirley-Ann Rueschemeyer

Successful communication relies on the ability of communicative partners to take each other's perspectives into account. Taking perspective occurs on many levels and affects both language comprehension and production. For example, taking knowledge about a speaker's background or beliefs into account when interpreting an utterance may be necessary to grasp the pragmatic inference of what a speaker means; likewise, taking account of a listener's background knowledge during communication may be necessary in order to convey new information effectively. That perspective taking is important during communication is uncontroversial; however there are many open questions surrounding the issues of precisely what information is considered during communicative acts and how considered information actually affects our patterns of comprehension and production. In this symposium we will be addressing precisely these issues. Specifically we will be presenting research showing how both linguistically encoded and nonverbal social cues flavour our interpretation of what a communicative partner says and does. The research presented addresses how perspective taking affects communication on both an interactive (e.g. behavioural) and a cognitive (e.g., representational, procedural, neural) level. We take different methodological and theoretical approaches to address a common problem, and thus provide a multifaceted and differentiated view on how perspective taking affects communication.

- A-0753 **Ira Noveck**
 Perspective taking is central to irony comprehension
- A-0145 **Alexia Galati, Marios N. Avraamides**
 Representational and Social Constraints on Spatial Perspective-Taking
- A-0344 **Shirley-Ann Rueschemeyer**
 Joint Comprehension: the effect of co-listeners on sentence comprehension
- A-0349 **Cristina Baus, Natalie Sebanz, Vania de la Fuente, Francesca Martina Branzi, Clara Martin, Albert Costa**
 Joint Production: the effect of predicting other's upcoming words on speech production
- A-0209 **Anna K. Kuhlen, Carsten Bogler, Marc Swerts, John-Dylan Haynes**
 Neural coding of assessing another person's knowledge based on nonverbal cues
- A-0463 **Ivan Toni, Arjen Stolk, Mark Blokpoel, Iris van Rooij**
 Mind-oriented movements

PREDICTIVE PROCESSES IN PERCEPTION SYMPOSIUM (Room: 0.83)

Chairs: Istvan Czigler and István Winkler

Predictive processes became an integral part of modern theories of perception, from Gregory's "Perceptions as Hypotheses" to hierarchical predictive coding models, such as Friston's "Free-energy Principle", and information-theory based approaches, such as Tishby's "Information Theory of Decisions and Actions". A common feature of these theories is that the brain continuously computes predictions for future sensory events and then compares them against the actual sensory input. The difference between the predicted and the actual input then drives the perceptual-cognitive system to initiate further exploration of the environment and/or update its internal model of it.

In recent years, an increasing number of studies in cognitive neuroscience and computational modeling have been aimed at exploring the utility and functions of predictive processes in explaining various perceptual phenomena. Often, these studies operationalized the detection of predictive processes by testing various instances when the assumed expectations of the perceptual system were violated. The assumption is that compared with predicted sensory event, unpredicted ones produce a physiologically detectable error signal, which may also trigger further neural processes representing model updating.

The symposium will focus on studies in auditory, audio-visual, and visual perception exemplifying the neural footprint of prediction violations and the explanatory power of predictive processing for the targeted perceptual phenomena.

- A-0181 **István Winkler, Erich Schröger**
A unified description of auditory deviance detection and auditory stream segregation
- A-0340 **Jeroen J. Stekelenburg, Jean Vroomen**
Auditory neural effects of visual information predicting 'what', 'when' and 'where'.
- A-0162 **István Czigler, István Sulykos, Krisztina Kecskés-Kovács**
Asymmetries in automatic detection of violated regularities in vision
- A-0375 **Alexandra Bendixen, Mathias Scharinger, Antje Strauss, Jonas Obleser**
Word predictability modulates early brain responses to omitted speech segments
- A-0315 **Susan L. Denham, Robert W. Mill, Tamás M. Bóhm, István Winkler**
Competition and cooperation in a model of auditory scene analysis
- A-0761 **Gabor Stefanics**
Predictive coding at different hierarchical levels of object representation

EXECUTIVE CONTROL AND WORKING MEMORY: TASK SWITCHING AND RESPONSE INHIBITION (Room: 0.79)

- A-0412 **Cai S. Longman Aureliu Lavric Stephen Monsell**
Advance re-orientation and attentional inertia in task-switching: an eye-tracking study
- A-0164 **Isabel Suarez, Boris Burle, Francisco Lopera, David Pineda, Thierry Hasbroucq, Laurence Casini**
Response inhibition in ADHD adults study by using RT distribution analysis and electromyographic activity.
- A-0044 **Maayan Katzir, Nachshon Meiran, Shulan Hsieh**
Competitor Rule Activation: Evidence from Task Switching
- A-0418 **Stefanie Schuch, James A. Grange**
N-2 Repetition Cost in Task Switching: Investigating four-task sequences
- A-0662 **Aureliu Lavric, Cai S. Longman, Heike Elchlepp, Stephen Monsell**
Separating components of task-set reconfiguration with combined EEG and eye-tracking
- A-0540 **Dora Matzke, Scott D. Brown, Gordon D. Logan, Jonathon Love, Thomas Wiecki, Eric-Jan Wagenmakers**
BEESTS: Software package for the Bayesian estimation of stop-signal reaction time distributions

FORMAL ASPECTS OF LANGUAGE COMPREHENSION (Room: 1.79)

- A-0250 **Juan M. Toro**
Triggering linguistic representations over sine-waves hides rules
- A-0187 **Olga Aizenberg, Merav Ahissar**
Sentence comprehension is determined by structure of information rather than by syntactic structure
- A-0292 **Sendy Caffarra, Anna Siyanova-Chanturia, Francesca Pesciarelli, Francesco Vespignani, Cristina Cacciari**
Gender-to-ending consistency and agreement processing in Italian: two independent effects?
- A-0337 **Malte Viebahn, Mirjam Ernestus, James McQueen**
Syntactic predictability facilitates the recognition of words in connected speech
- A-0462 **Laurie Beth Feldman, Petar Milin, R. Harald Baayen**
Frequency and regularity effects do not interact in verb production: A challenge to dual mechanism accounts of inflectional processing

ACTION PERCEPTION (Room: 0.87)

- A-0019 **Rouwen Cañal-Bruland, Frank Voorwald, Kirsten Wielaard, John van der Kamp**
Dissociations between perception and action depend on the relative potency of egocentric and allocentric information
- A-0113 **isabel catarina martins, armando mónica de oliveira, bert steenbergen**
Dynamical representations in People with Cerebral Palsy: an action-perception case?
- A-0603 **Andres Michael, Pelgrims Barbara, Olivier Etienne**
Embodied representation of tool knowledge : A TMS investigation
- A-0443 **Francesca M. Branzi, Pasquale A. Della Rosa, Jubin Abutalebi, Albert Costa**
Different top-down factors tune different brain networks during early stages of object recognition.
- A-0626 **Manuela M. Marin, Allegra Lampatz, Helmut Leder**
Berlyne revisited: Evidence for the multidimensional nature of hedonic value in the perception of visual arts

MODALITY EFFECTS ON WORKING MEMORY (Room: 0.89)

- A-0111 **Valerio Santangelo, Simona Arianna Di Francesco, Serena Mastroberardino, Emiliano Macaluso**
The contribution of low-level sensory features versus knowledge-based factors for encoding of objects in working memory
- A-0355 **Michel Quak, Durk Talsma**
Involvement of Visual Brain Areas in the Integration of Contextual and Visual information in Visual Working Memory
- A-0346 **Bill Macken, David Maidment, Dylan Jones**
Modalities of memory: Is reading lips like hearing voices?
- A-0734 **Diane Pecher**
The role of motor affordances in visual working memory

SOCIAL COGNITION 2 (Room: 0.99)

- A-0188 **Karen Lander, Siddhi Poyarekar**
Exploring the impact of extraversion and social confidence on face recognition
- A-0295 **Michael Forster, Gernot Gerger, Martina Jakesch, Helmut Leder**
Fluency needs uncertainty
- A-0370 **Elizabeth Renner, Antonia Hamilton, Francys Subiaul**
Separate brain systems for cognitive and motor-spatial imitation
- A-0611 **Annika Melinder, Carolien Konijnenberg, Tone Hermansen, Moritz M. Daum, Gustaf Gredebäck**
The Neural Basis of Pointing Comprehension
- A-0620 **Neeltje E. M. van Haren, Robert A. Renes, Henk Aarts, Matthijs Vink**
The involvement of parietal and frontal brain areas in the inference of self-agency
- A-0711 **Robert A. Renes, Lisanne Vermeulen, René S. Kahn, Henk Aarts, Neeltje E. M. van Haren**
Abnormalities in the establishment of self-agency experiences in schizophrenia

NUMERICAL COGNITION (Room: 0.100A)

- A-0036 **Ben-Meir Shachar, Ganor-Stern Dana, Tzelgov Joseph**
automatic processing of temporal order of magnitude
- A-0220 **Koen Luwel, Lieven Verschaffel**
The role of strategies in numerosity estimation
- A-0249 **Kim Uittenhove, Catherine Thevenot, Pierre Barrouillet**
Adults do not retrieve the answer to 2 + 3 from memory : Evidence from solution times
- A-0403 **Pedro Macizo, Amparo Herrera, Patricia Megías**
Inhibitory mechanism involved in the selection of arithmetic facts
- A-0411 **Brunissende Mercier, Laurent Dumercy, Lucile Chanquoy, Frédéric Lavigne**
Determinants of the variations of the operational momentum

ATTENTION: INDIVIDUAL ASPECTS (Room: 0.100B)

- A-0098 **Liat Golfarb**
The Benefits of Automatic Inhibition
- A-0333 **Lisa S. Arduino, Marialuisa Martelli, Silvia Primativo, Maria De Luca, Andrea Albonico, Manuela Malaspina, Roberta Daini**
A new explanatory model of neglect dyslexia
- A-0387 **Mieke Beckwé, Natacha Deroost**
Different attention biases for ruminators and worriers
- A-0599 **Maria Kuvaldina**
Implicit and explicit capture of attention in inattentional blindness task
- A-0591 **Joanna Kantor-Martynuska, William Macken**
Automatic processing of auditory sequences and susceptibility to auditory distraction in musicians and nonmusicians
- A-0628 **Kelly Rowe, Michael Mrazek, Brett Ouimette, Jonathan Schooler**
Is Belief in Free-will Under Our Control?

TALK SESSION 3 | 16:00-17:40**SYNAESTHESIA: HOW UNUSUAL PERCEPTION CAN INFORM NORMAL COGNITION
SYMPOSIUM (Room: 0.81)**

Chairs: Nicolas Rothen and Jamie Ward

Higher cognitive functions, such as memory, are influenced by many different factors. One such factor to have a major impact is individual differences in perceptual functioning. Individual differences in perceptual functioning themselves can be quite dramatic. For instance, synaesthesia – a condition with a neural basis – is associated with extra perceptual experiences in response to ordinary sensory input. Currently, the best studied form of synaesthesia is grapheme-colour synaesthesia. People with grapheme-colour synaesthesia have consistent colour experiences in response to letters and numbers. As such synaesthesia can be used as a methodological approach to disentangle how individual differences in perceptual functioning affect higher cognitive functions to gain insight into specific processes underlying cognitive functions. This symposium has mainly two aims. First, it is our aim to demonstrate that synaesthesia can indeed be used as a valuable method to study processes underlying higher cognitive functions. Second, at the same time it is our aim to provide the audience with empirical results and underlying theoretical frameworks on how synaesthesia affects higher cognitive functions. To do so, we will first provide a brief introduction to synaesthesia in general. Second, the individual talks will focus on different forms of synaesthesia and how they can inform memory, executive functions, mental imagery, and social cognition such as empathy.

- A-0490 **D. B. Terhune, Roi Cohen Kadosh**
Enhanced working memory in grapheme-colour synaesthesia and its metabolic basis
- A-0139 **Jools Simner, Kaitlyn Bankieris**
What can synaesthesia teach us about sound symbolism?
- A-0722 **Jamie Ward**
Mirror-Touch Synaesthesia as a Window into Social Cognition
- A-0583 **Mark C. Price, Aurora B. Mykland**
How strange is tickertape synaesthesia?: A case study.
- A-0472 **Nicolas Rothen, Jamie Ward**
Memory: Insights from Grapheme-Colour Synaesthesia

**CONSCIOUSNESS AND METACOGNITION
SYMPOSIUM (Room: 0.83)**

Chairs: Eva van den Bussche and Kobe Desender

The current symposium is aimed at exploring the role of metacognition in paradigms addressing the borders of unconscious processing. Several recent observations have shown that even when stimuli are categorized at chance level in a detection task, they can still trigger high-level cognitive functions. However, simply showing that subjects cannot detect a stimulus does not necessarily imply that we can confidentially claim that subjects were unaware of it on every possible level. Research in consciousness has started to develop various methods to assess various ways of awareness, which go beyond assessing merely awareness of the stimulus itself. In the current symposium, we will try to provide different perspectives on these issues, and focus on the involvement of metacognition in studies addressing conscious and unconscious processing.

- A-0357 **Lucie Charles, Filip van Opstal, Sebastien Marti, Jean-Rémi King, Stanislas Dehaene**
Brain dynamics of conscious versus subliminal error-detection
- A-0192 **Elisabeth Norman**
Measuring metacognitive feelings in implicit learning
- A-0202 **Sachiko Kinoshita, Bianca DeWit**
A new perspective on subliminal semantic priming: Source confusion and prime discounting

- A-0252 **Ryan Scott, Jason Samaha, Ron Chrisley, Zoltan Dienes**
Unconscious cross-modal binding: A challenge for Global Workspace Theory?
- A-0262 **Kobe Desender, Filip Van Opstal, Eva Van den Bussche**
Feeling the conflict: The crucial role of conflict - Awareness in adaptation

**POSITIVE AND NEGATIVE CONSEQUENCES OF RETRIEVAL
SYMPOSIUM (Room: 0.79)**

Chair: Ainat Pansky

Recent studies have demonstrated that retrieving information from memory can have both positive and negative effects on subsequent recollection. On the one hand, extensive research has shown that taking a memory test can improve the later retrieval of the tested information, in what is known as the testing effect (for a review, see Roediger & Butler, 2012). On the other hand, interpolated retrieval has also been found to yield deleterious effects on subsequent memory performance. For example, selective retrieval practice has been shown to impair the subsequent retrieval of related untested material in what is known as retrieval-induced forgetting (for a review, see Storm & Levy, 2012). Acknowledging the importance of examining the effects of interpolated retrieval not only with regard to the information that was retrieved but also with regard to information that was not, both positive and negative effects of interpolated testing on subsequent memory performance will be presented and discussed in this symposium. In the studies that we will report, these effects were investigated using a variety of paradigms, experimental materials, and measures as well as with different age groups. The magnitude of the testing effect was examined for different types of retrieval practice such as covert vs. overt retrieval and summary of the main ideas vs. verbatim reproduction. The theoretical implications of the findings will be discussed as well as important practical implications for classroom situations, eyewitness situations, and other real-life phenomena.

- A-0674 **Gino Camp, Nicole A.M.C. Goossens**
Benefits and costs of retrieval: From the lab to the classroom
- A-0097 **Malcolm MacLeod, Jo Saunders**
Age-related inhibitory control processes in memory retrieval and the role of output interference
- A-0348 **Fredrik U. Jönsson, Veit Kubik, Max Larsson Sundqvist**
Overt or covert retrieval practice – are both learning strategies equally effective?
- A-0048 **Ainat Pansky, Adi Ben-Nun Inbar**
Effects of verbatim vs. gist retrieval goals across repeated memory tests
- A-0743 **V. Kubik, M. Knopf, L-G. Nilsson, F. U. Jönsson**
The effects of testing and enactment on memory for action phrases

LEARNING 1 (Room: 1.79)

- A-0073 **James R. Schmidt**
Item-Specific Proportion Congruency: Dissociating Contingency and Conflict Adaptation
- A-0200 **Marta Roczniowska, Radosław Sterczyński, Agnieszka Popławska**
Colours or letters? Automatic processing is crucial to implicit learning
- A-0239 **Arit Glicksohn, Asher Cohen**
Implicit learning in vision and audition: Evidence for an a-modal learning mechanism
- A-0610 **Agnieszka Popławska, Marta Roczniowska, Radosław Sterczyński**
The influence of resources limitation on decision-making processes in Artificial Grammar Learning Task
- A-0689 **Koen Homblé, Daphné Coomans, Jochen Vandebossche, Eric Soetens, Natacha Deroost**
Detecting the emergence of conscious knowledge in sequence learning

ACOUSTICS IN LANGUAGE PROCESSING (Room: 0.87)

- A-0191 **Kristof Strijkers, Albert Costa, Friedemann Pulvermuller**
Rapid parallel recruitment of lexico-semantic and phonological knowledge in frontal and temporal cortices during speech production.
- A-0198 **Betty Mousikou, Kevin D. Roon, Kathleen Rastle**
Activation of phonetic features in masked priming
- A-0230 **Joris Van de Cavey, Robert Hartsuiker**
Syntax in Music and Language : Investigating Domain Specificity
- A-0332 **Audrey Bürki, Marina Laganaro, F.-Xavier Alario**
Phonologically driven variability: The case of determiners
- A-0519 **Serje Robidoux, Derek Besner**
Interactive Activation in Reading Aloud: What is Feedback Doing?
- A-0682 **Jelena Sucevic, Vanja Kovic, Andrej Savic**
Is there anything sound-symbolic in words: Behavioural and ERP study of sound symbolism in natural language

CONTROL PROCESSES IN BILINGUALS (Room: 0.89)

- A-0215 **Benoît Perriard, Valerie Camos**
Language switching in a complex span task in late bilinguals
- A-0361 **Duyck Wouter, Eva Van Assche, Tamar Gollan, Nele Verreyt, Arnaud Szmalec**
Language control in bilinguals
- A-0423 **Marco Calabria, Gabriele Cattaneo, Paula Marne, Alice Foucart, Roser Ribosa Nogué, Alexandre Gironell, Jubin Abutalebi, Albert Costa**
The role of executive control in bilingual language production: a study with Parkinson's disease patients
- A-0461 **A. Foucart, C. Martin, G. Thierry, E. Moreno, J-R. Kuipers, B. Boutonnet, M. Calabria, A. Costa**
Can bilinguals guess what's coming? Word anticipation in L2 sentence reading.
- A-0500 **Martine Poncelet, Anne-Catherine Nicolay**
Cognitive benefits in children enrolled in an early bilingual immersion school program
- A-0700 **Cristina Barbu, Sarah Orban, Sophie Gillet, Martine Poncelet**
Impact of the frequency of language code-switching on attentional/executive functioning in highly proficient bilingual adults

COGNITION AND EMOTION 1 (Room: 0.99)

- A-0010 **Mei-Ching Lien, Roberson Taylor, Eric Ruthruff**
Capture by Fear Revisited: An Electrophysiological Investigation
- A-0107 **Noga Cohen, Tali Leibovich, Avishai Henik**
Size is in the Eyes of the Beholder: Relevance-Specific Bias in Those Afraid of Spiders
- A-0128 **Nele Dael, Marie-Noëlle Perseguers, Cynthia Marchand, Jean-Philippe Antonietti, Christine Mohr**
Put on that colour, it fits your emotion: Colour appropriateness as a function of expressed emotion
- A-0570 **Buket Ozgen, Hakan Cetinkaya**
A Hemispheric Investigation of Searching for the Threatening Facial Stimuli among Distracters

A-0684 **Borysław Paulewicz, Agata Blaut**
Cognitive side-effects of training to direct attention away from negative stimuli

PERCEPTION, ACTION, MOTOR CONTROL (Room: 0.100A)

- A-0109 **Eldad Yitzhak Hochman, Seqian Wang, Theodor E. Milner, Lesley K. Fellows**
Righting a wrong: Dissociable effects of dorsomedial frontal and basal ganglia damage on error inhibition and correction
- A-0410 **Davide Rigoni, Boris Burle**
The costs of lying back: how whole-body posture affects cognitive control
- A-0643 **Laure Spieser, Wery van den Wildenberg, Thierry Hasbroucq, Richard Ridderinkhof, Boris Burle**
What is automatically activated in conflict task? Evidence for rule-based (and not feature-based) incorrect response activations.
- A-0648 **Lesourd, Le Gall, Croisile, Baumard, Jarry, Osiurak**
Apraxia and Alzheimer's disease: review and perspectives
- A-0679 **Oliver Herbort, Martin V. Butz**
Different Means for the Same End – How Task Representations Affect Motor Planning

ATTENTION: SELECTIVE ATTENTION (Room: 0.100B)

- A-0163 **Agnieszka Wykowska, Eva Wiese, Aaron Prosser, Hermann J. Müller**
Higher-order social cognition influences early mechanisms of perceptual selection. An EEG study
- A-0227 **Craig Hedge, Ute Leonards**
Interactions between visual spatial attention and the focus of attention in working memory
- A-0322 **Sandra Murphy, Nick Fraenkel, Polly Dalton**
The role of perceptual load in auditory selective attention
- A-0520 **Ricardo Max, Yehoshua Tsal**
The Timeline of Attention and Distraction
- A-0712 **Lubna Ahmed, Emma Cox, Jan de Fockert**
The effect of cognitive load on visual selective attention.

FRIDAY | AUGUST 30

17:45-18:20

BUSINESS MEETING (Room: 0.79)

FRIDAY | AUGUST 30

18:30-19:30

KEYNOTE LECTURE 2. (Room: Harmonia)

- A-0772 **Nancy Kanwisher**
The Functional Organization of the Ventral Visual Pathway in Humans

TALK SESSION 4 | 09:00-11:00**REVISITING VISUAL-WORD RECOGNITION
SYMPOSIUM (Room: 0.81)***Chair: Manuel Perea*

Research on visual-word recognition has been particularly active in the past decades, both at the theoretical and empirical levels. At the ESCOP meetings, this has been reflected in a number of word-recognition symposia in previous editions, in which the speakers have presented top-notch research in the field. The present symposium aims to continue this tradition.

- A-0137 **Marc Brysbaert, Emmanuel Keuleers, Pawel Mandera, Michael Stevens, Victor Kuperman, Amy Beth Warriner**
Megastudies: the latest additions
- A-0494 **Pablo Gomez, Manuel Perea**
Decomposing encoding and decisional components in visual-word recognition: A diffusion model analysis
- A-0203 **Sachiko Kinoshita, Dennis Norris**
Is there really a difference in the precision of position coding for consonants and vowels?
- A-0123 **Jonathan Grainger, Thomas Hannagan, Maria Ktori**
What do transposed-letter effects reflect?
- A-0154 **Jon Andoni Duñabeitia, Manuel Carreiras**
How does literacy shape letter processing?
- A-0769 **Colin J. Davis**
How are orthographic representations learned?

**SENSE OF AGENCY: HOW DO WE KNOW WHAT WE ARE DOING?
SYMPOSIUM (Room: 0.83)***Chairs: Jelle Demanet and Dorit Wenke*

The sense of agency (SoA) refers to the experience of initiating and controlling one's actions and the events they produce in the outside world. This subjective experience is crucial to our ability to intentionally manipulate our environment with our actions. With this symposium we gathered researchers that focus on different aspects of SoA. Research on SoA has addressed on questions regarding (a) the nature of events we tend to (not) feel in control of, (b) the mechanisms and factors contributing to SoA and (c) the different measurements of SoA. The present symposium focuses on research addressing these questions, bringing together researchers with backgrounds in Social Psychology, Action Control and Cognitive Psychology. Bringing together these different lines of research on SoA will deepen our understanding of SoA and will help to mutually stimulate new questions.

- A-0193 **Dorit Wenke, Anne Löffler, Jelle Demanet, Lize Decoster, Marcel Brass**
Intentional Binding and Sense of Responsibility : Temporal un-binding of actions and effects when inflicting pain on others
- A-0409 **Anouk van der Weiden, Henk Aarts, Kirsten I. Ruys, Neeltje E. M. van Haren**
On the Relation between Self-Agency and Motivation
- A-0046 **Andrea Kiesel, Carola Häring, Rebecca Mauhar, Dorit Wenke**
Intentional binding for two effect stimuli?
- A-0041 **TGE Damen, A Dijksterhuis, M Brass, R van Baaren**
Agency and obedience to authority: an empirical effort on the validity of the agentic state theory
- A-0415 **Jelle Demanet, Paul Muhle-Karbe, Margaret T Lynn, Iris Blotenberg, Marcel Brass**
Power to the will!

**CONTINUOUS ISSUES IN NUMERICAL COGNITION
SYMPOSIUM (Room: 0.79)**

Chair: Avishai Henik

Research in the last two decades in the area of numerical cognition led to a widely accepted view of an innate, domain-specific, core numerical knowledge based on the ability to perceive and manipulate discrete quantities (e.g., enumeration of dots). This core knowledge involves the brain intraparietal sulcus (IPS). Moreover, a deficiency in this core knowledge is thought to be the basis for arithmetic disability. However, several findings suggest that this wide agreement needs to be examined carefully. In particular, similar to sensitivity to discrete quantities (e.g., enumeration of objects), infants as well as adults show sensitivity to non-countable continuous dimensions like perception of area and size. Moreover, numbers are intimately associated with non-countable dimensions (e.g., area, brightness, time). Speakers in the current symposium will examine these issues and the possibility that perception and evaluation of non-countable dimensions (e.g., sizes or amounts) might contribute to the development of numerical cognition. This and similar discussions will add to the development of a complete account of numerical cognition, its breakdown in brain-injured individuals, and failures to master mathematical skills.

- A-0394 **Marinella Cappelletti**
Numeracy and learning in ageing
- A-0126 **Bert Reynvoet, Titia Gebuis, Emmy Defever**
Task and age dependent effects of visual stimulus properties on children's explicit numerosity judgments
- A-0503 **Stella F. Lourenco**
Cross-dimensional interactions between number and other magnitudes in infants and young children
- A-0068 **Christian Agrillo, Maria Elena Miletto Petrazzini, Christian Tagliapietra, Angelo Bisazza**
Discrete versus continuous quantities in non-primate species: the case of fish
- A-0059 **Tali Leibovich, Gali Katz, Avishai Henik**
Size Matters! But Which Size?
- A-0218 **Lola de Hevia**
Links across number, space, time, and other continuous dimensions in the developing mind

PERCEPTION (Room: 1.79)

- A-0532 **Brunel, Camus, Guilloux, Da Silva**
Multimodal Cross-modal correspondences: An integrated view of vision, audition and action.
- A-0647 **Ziv Peremen, Dominique Lamy**
Do measures of conscious and unconscious perception reflect qualitatively different mechanisms?
- A-0696 **Michał Wierzchoń, Eligiusz Wronka, Remigiusz Szczepanowski**
Brain activity in conscious processing of emotion: event-related potential (ERP) study
- A-0534 **Brunel, Sauli, San Emeterio, Panis**
Does bigger mean louder? Crossmodal Congruency and Memory Judgment
- A-0120 **Duncan Guest, Christina Howard, Louise Brown, Harriet Gleeson**
Effects of ageing on the rate of visual information processing; a time-accuracy function analysis
- A-0416 **Yousri Marzouki, Jonathan Grainger**
Effects of Stimulus Duration and Inter-Letter Spacing on Letter-in-String Identification

EXECUTIVE CONTROL: MULTITASKING (Room: 0.87)

- A-0182 **Aleksandra Pieczykolan, Lynn Huestegge**
Serial or parallel processing in crossmodal action?
- A-0189 **Timo Mäntylä, Ivo Todorov**
Individual differences in multitasking
- A-0382 **I Suarez del Chiaro, B Burle, F Vidal, L Casini**
Top-down controlled mechanisms at the origin of the Simon effect : evidence from a dual-task paradigm.
- A-0419 **Tiina Salminen, Simone Kühn, Torsten Schubert**
Investigating the effects of working memory training: An fMRI study
- A-0284 **Lynn Huestegge, Iring Koch**
Modality Dominance Among Effector System
- A-0569 **Catherine Thompson, Lorraine Howting, Peter Hills**
The transference of visual scanning behaviour between two unrelated tasks: Measuring the characteristics of carry-over

WORKING MEMORY: INTERFERENCE AND MAINTENANCE (Room: 0.89)

- A-0238 **Alessandra Souza, Laura Rerko, Klaus Oberauer**
Refreshing memory traces: Does thinking of an item change its status in memory?
- A-0488 **Vanessa M. Loaiza, Valerie Camos**
The nature of stored representation in working memory depends on maintenance strategy
- A-0493 **Gyula Demeter, Mihály Racsmány**
Realizing delayed intentions: overactivated monitoring function in obsessive compulsive disorder (OCD)
- A-0633 **Mihály Racsmány, Péter Pajkossy, Gyula Demeter, Attila Keresztes**
Goal attainment and memory suppression: Zeigarnik reloaded
- A-0644 **Attila Keresztes, Mihály Racsmány**
Exploring consequences of interference resolution during retrieval: Boundary conditions on retrieval-induced forgetting
- A-0703 **Hsuan-Yu Lin, Klaus Oberauer**
Modeling visual-working memory: An interference-based model

SEMANTIC EFFECTS IN LANGUAGE COMPREHENSION (Room: 0.100A)

- A-0056 **Erin Hawkins, Duncan E. Astle, Kathleen Rastle**
Consolidation-dependent semantic influence on word learning in the brain
- A-0328 **Anna Weighall, Lisa Henderson, Gareth Gaskell**
Novel word learning and lexical competition in adults and children: A visual world eye-tracking study.
- A-0125 **Julien Dampuré, Abdel Benraiss, Jean-François Rouet, Nicolas Vibert**
Event-related potentials reveal task-related modulation of the respective contributions of word form and meaning during visual search for words
- A-0286 **V. Bandecchi, M. T. Keane**
Cross-Language Differences in Motion Verbs: Now You See Linguistic Relativity, Now You Don't
- A-0596 **Olivera Ilic, Vanja Kovic, Andrej Savic, Guillaume Thierry**
Conceptual organisation revisited: Behavioural and ERP evidence

DEVELOPMENT 1 (Room: 0.100B)

- A-0093 **Zsuzsa Kaldy, Sylvia Guillory, Erik Blaser**
Putting memory to work: A novel gaze-contingent visual working memory task for infants
- A-0214 **Anne-Laure Oftinger, Valérie Camos**
Developmental improvement of maintenance mechanisms of verbal information between 6 and 9 years old children in working memory
- A-0317 **Amanda Waterman, Zoe Marshall, Richard Allen, Charity Brown, Mark Mon-Williams**
Children’s knowledge about time and performance on temporal memory tasks: how do these abilities develop and how are they related?
- A-0555 **Tilo Strobach, Tiina Salminen, Petra Redel, Kathrin Finke, Torsten Schubert**
Working-memory updating training in younger and older adults: Training and transfer effects
- A-0255 **David Giofrè, Irene C. Mammarella, Cesare Cornoldi**
Working memory and intelligence in children

SATURDAY | AUGUST 31

11:00-13:30

POSTER SESSION C (Room: Aula)

Action Perception

- PC-001 **Ke Ma, Bernhard Hommel**
(A-0112) The Virtual-Hand Illusion: Evidence for interactions between perceived body ownership and empathy
- PC-002 **Mattia Marangon, Giulia Bucchioni, Stefano Massacesi, Umberto Castiello**
(A-0208) Anticipating the course of an action: evidence from corticospinal excitability
- PC-003 **Chiara Fini, Giorgia Committeri**
(A-0429) “Near action space” is extended by the presence of another individual
- PC-004 **Zsófia Kovács-Bálint, Anita Deák, Péter Papp, Gábor Perlaki, Gergely Orsi, István Hernádi, Tamás Bereczkei**
(A-0773) Processing facial expressions of cooperation and deception activates different cortical regions: an fMRI study

Attention

- PC-005 **Céline Lemerrier, Gaelle Berthié, Christelle Pêcher**
(A-0172) The restless mind while driving: What about driver’s thoughts behind the wheel?
- PC-006 **Laura Veronelli, Maria T. Guasti, Lisa S. Arduino, Giuseppe Vallar**
(A-0447) Sentence bisection in unilateral spatial neglect
- PC-007 **Christoph Huber-Huber, Ulrich Ansorge**
(A-0452) Mind-wandering in visual search
- PC-008 **Takahiko Kimura, Tsubasa Fukunaga, Shun’ichi Doi**
(A-0508) Control of attention distribution in 3D space with flanker stimulus
- PC-009 **Julie Bertels, Emeline Boursain, José Morais, Régine Kolinsky**
(A-0543) Disentangling short and long-lasting attentional influences of negative and taboo spoken words in the emotional Stroop paradigm

- PC-010
(A-0557) **Nart Bedin Atalay, Mine Misirlisoy**
Does the ISPC Effect Interact with the SOA between Relevant and Irrelevant Stroop Dimensions?
- PC-011
(A-0567) **Irén Barkaszi, Endre Takács, István Czigler, László Balázs**
Cognitive performance during Antarctic overwintering
- PC-012
(A-0578) **Belgüzar Nilay Türkan, Sonia Amado, İpek Perçinel**
Change Detection Performance of children with Attention Deficit/ Hyperactivity Disorder (ADHD)
- PC-013
(A-0639) **Mathieu Landry, Jelena Ristic**
Combined attention: A novel way of conceptualizing the links between attention and behavior
- PC-014
(A-0642) **Endre Takács, István Sulykos, István Czigler, Irén Barkaszi, László Balázs**
Visual sensory memory demonstrates orientation anisotropy

Bilingualism/Multilingualism

- PC-015
(A-0071) **Xenia Schmalz, Eva Marinus, Serje Robidoux, Anne Castles, Max Coltheart**
Quantifying the Reliance on Sublexical Strategies in German and English Reading
- PC-016
(A-0223) **Mathieu Declerck, Iring Koch, Andrea M. Philipp**
The role of sequential predictability in language control: Evidence from language switching
- PC-017
(A-0307) **Amanda Post da Silveira, Niels O. Schiller**
L2 word stress representation: investigating cognate words and the role of orthography on phonological processing
- PC-018
(A-0388) **Julia Morales, Francisca Padilla, Carlos J. Gómez-Ariza, Teresa Bajo**
Updating skills and alertness in simultaneous interpreters

Cognition and Emotion

- PC-019
(A-0007) **Yael Basford, Ronit Roth-Hanania**
Exploring the Path to Empathy
- PC-020
(A-0012) **Catarina Silva, Christine Deruelle David da Fonseca, Andreia Santos, Isabel Soares, Francisco Esteves**
Just a Glance: Fear of Closeness in Ambivalent Eyes
- PC-021
(A-0014) **Aline Beaufort, Serge Brédart, Tim Perfect, Hedwige Dehon**
A study about the effects of affective valence on a source-monitoring error: cryptomnesia
- PC-022
(A-0024) **Marco Sperduti, Pénélope Martinelli, Sandrine Kalenzaga, Thierry Gallarda, Isabelle Amado, Marie-Odile Krebs, Catherine Oppenheim, Pascale Piolino**
Don't be too strict with yourself! Rigid negative self-representation in healthy subjects mimics neurocognitive profile of depression for autobiographical memory
- PC-023
(A-0160) **Mary Parkinson, Ruth M. J. Byrne**
The Role of Intent in Moral Judgements of Purity and Harm Violations
- PC-024
(A-0211) **Anna-Malika Camblats, Stéphanie Mathey**
Effect of emotional orthographic neighbourhood in an adapted Stroop paradigm
- PC-025
(A-0245) **Emma Portch, Charity Brown, Jelena Havelka**
Do emotion words provide an 'internal context' for the perception of emotion?
- PC-026
(A-0259) **Rossella Guerini, Giorgio Coricelli**
Evidence for gender differences in child risk attitude explained by reduced sensitivity to negative counterfactual emotions

PC-027 **Adva Segal, Yoav Kessler, Gideon E. Anholt**
(A-0260) Updating the Emotional Content of Working Memory in Social Anxiety Disorder

PC-028 **Tom Fruchtmann, Yael Salzer, Noga Cohen, Avishai Henik**
(A-0372) The Links between Emotion and Executive Control – a Comparison between the Visual and the Tactile Modalities

PC-029 **Nick Berggren, Nazanin Derakshan**
(A-0448) Tracking attentional control deficits in trait anxiety: Increased stimulus-based or response-based interference?

PC-030 **David Welleditsch, Marcos Nadal, Helmut Leder**
(A-0676) Spending time on art: The effect of context on art appreciation and viewing behavior

Cognitive Development

PC-031 **Sotta Kieng, Thierry Lecerf, Nicolas Favez, Jérôme Rossier**
(A-0060) Long term stability of the French WISC-IV index scores: Intellectual strengths and weaknesses

PC-032 **Catherine Demoulin Régine Kolinsky José Morais**
(A-0072) Effect of reading acquisition on working memory development

PC-033 **Megumi Masuda**
(A-0132) Understanding and expressing emotions in young children; Using verbal and nonverbal tasks.

PC-034 **Tibor Tausin, György Gergely**
(A-0327) Outcome variability in interactions as a cue to agency in infants

PC-035 **Barbara Pomiechowska, Natasha Kirkham, Teodora Gliga**
(A-0699) Influence of verbal labels on object memory in infancy

Consciousness

PC-036 **Daphné Coomans, Jochen Vandebossche, Eva Van den Bussche, Eric Soetens, Natacha Deroost**
(A-0053) The influence of awareness on perceptual sequence learning

PC-037 **M. Pillot M, B. Schwartz, E. L. Bacon**
(A-0084) The contribution of partial and contextual information to the Feeling of Knowing in episodic memory

PC-038 **Remigiusz Szczepanowski, Michał Wierzchoń, Marcin Szulżycki**
(A-0590) Encoding conscious decision in the post-decision wagering task: a connectionist approach

Developmental Disorders

PC-039 **Stéphanie Bellocchi, Josette Mancini, Marianne Jover, Andréa Huau, Alain Ghio, Carine André, Stéphanie Ducrot**
(A-0177) Dyslexic readers and saccade computation: effects of reading exposure and visuo-perceptual constraints

PC-040 **Adelina Estévez, Rosario Ortiz, Mercedes Muñetón**
(A-0385) Visual and auditory perception in children at risk for reading problems

PC-041 **Avital Rptem, Avishai Henik**
(A-0659) Product plausibility checking in typical achievers and in children with mathematics learning disability (MLD)

Executive Control and Working Memory

PC-042 **Yulia Levin, Joseph Tzelgov**
(A-0015) Stroop Task Conflict Control is Dependent on the Occurrence of Informational Conflict

- PC-043
(A-0116) **Simona Arianna Di Francesco, Valerio Santangelo, Davide Nardo, Emiliano Macaluso**
Attentional selection for short-term memory: gaze-direction at encoding predicts retrieval activity in posterior parietal cortex
- PC-044
(A-0136) **Alexander Soutschek, Paul J.C. Taylor, Hermann J. Müller, Torsten Schubert**
Dissociable Networks Control Conflict during Perception and Response Selection: a TMS Study
- PC-045
(A-0269) **Virginie Postal**
Executive control in normal and pathological aging: a comparison of a classic task switching paradigm and a voluntary task switching paradigm
- PC-046
(A-0507) **Swiya Nath, Alison Nobes, Amy Devine, Florence Gabriel, Denes Szucs**
Mathematics, construction play and cognitive abilities: (How) Are they related?
- PC-047
(A-0521) **Meiran Nachshon Shirley Regev**
Strategic Influences in Post-Error Slowing
- PC-048
(A-0524) **Rachel Rac, Yoav Kessler**
Comparing automatic and controlled working memory updating: An ERP study
- PC-049
(A-0550) **Ádám Takács, Andrea Kóbor, Ferenc Honbolygó, Valéria Csépe**
Does rare error count in impulsivity? Differences in error-related ERPs
- PC-050
(A-0601) **Nitzan Shahar, Maayan Pereg, Nachshon Meiran**
Influence of Procedural vs. Declarative Working Memory Load on Exceptionally Slow Reaction Times
- PC-051
(A-0616) **Nathalie Mella, Delphine Fagot, Anik de Ribaupierre**
Individual differences in working memory capacity and intraindividual variability
- PC-052
(A-0637) **Merle Steinwascher, Thorsten Meiser**
A condition for proactive interference in working memory

Judgment and Decision Making

- PC-053
(A-0035) **Atsunori Ariga, Atsuko Inoue**
What you like is what has decreased: Feature-based perception of the scarcity enhances object value
- PC-054
(A-0165) **Caspar Emilie, Albouy Siloé, Cleeremans Axel**
Free Will : Not everybody is equal
- PC-055
(A-0469) **Y. Schrag, J. Armengol, A. Tremea, C. Mohr**
Does disbelief in free will promote risk-taking decisions ? a study combining belief induction and Iowa Gambling Task

Language Acquisition

- PC-056
(A-0694) **Norbert Maïonchi-Pino, Jean Écalle, Annie Magnan**
Does the sonority-based markedness influence the visual processing of syllables in French children?

Language Comprehension

- PC-057
(A-0364) **Sophie Brand, Mirjam Ernestus**
The use of lexical representations for word pronunciation variants in speech comprehension: the case of French schwa reduction
- PC-058
(A-0367) **Ana Pérez, Kate Cain, Teresa Bajo**
Inferential updating in narrative texts
- PC-059
(A-0458) **Saioa Larraza, Arthur Samuel**
How is dialectal variation treated by bilinguals with different native dialects?levels.

PC-060
(A-0486) **Stéphanie Massol, Katherine J. Midgley, Phillip J. Holcomb, Jonathan Grainger**
Effects of size and case on masked repetition priming with nonwords: An ERP investigation

PC-061
(A-0496) **S. Nouwens, M. Groen, L. Verhoeven**
The contribution of executive functions to sentence, paragraph and global text comprehension.

PC-062
(A-0515) **Li-Hsin Ning, Hsu-Wen Huang, Kara D. Federmeier**
Hemispheric asymmetry in imagery processing that links to language

PC-063
(A-0522) **De Martino Maria, Bracco Giulia, Postiglione Francesca, Laudanna Alessandro**
Gender transparency in processing of written Italian nouns

PC-064
(A-0602) **Claudia Scorolli, Carmen Granito, Anna M. Borghi**
Alice in Legoland: a behavioral study on abstract words

PC-065
(A-0702) **Francesca Peressotti, Eduardo Navarrete, Roberto Dell'Acqua**
Multiple primes and semantic satiation: Attenuation of the P2 amplitude following massive exposure to semantic co-ordinate words

Language Production

PC-066
(A-0063) **Lisa Ceccherini, Max Coltheart, Claudio Mulatti**
On the length effect in picture-nonword interference

PC-067
(A-0376) **Hanna S. Gauvin, Robert J. Hartsuiker, Wouter de Baene**
Error detection in speech production and perception

PC-068
(A-0563) **Britta Biedermann, Antje Lorenz, Catherine Mason, Elisabeth Beyersmann, Franziska Machleb, Lyndsey Nickels**
Regularity and frequency effects on plural processing in speakers with aphasia: a cross-linguistic study

PC-069
(A-0680) **Mingyuan Chu, Peter Hagoort**
Synchronization of speech and gesture - Evidence for interaction in action

Learning

PC-070
(A-0321) **Tova Stenlund, Bert Jonsson**
Effects of repeated testing compared to group discussions

PC-071
(A-0489) **Sarah Beurms, Jan De Houwer, Tom Beckers**
Investigating encoding of location in the matching-to-sample-task in animals

Memory

PC-072
(A-0122) **Justyna Olszewska, Joanna Ulatowska**
Encoding strategy effect on false recall and recognition in the DRM paradigm

PC-073
(A-0169) **Valeria R.S. Marques, Francesca Iannarelli, Pietro Spataro, Daniele Saraulli, Antonio Sciarretta, Clelia Rossi-Arnaud, Vincenzo Cestari**
Dissociating perceptual and conceptual processes in schizophrenia: Further evidence from identification implicit tasks.

PC-074
(A-0226) **Géza Harsányi, Claus-Christian Carbon**
The „basic-level“ advantage in categorization is actually an intermediate-level advantage

PC-075
(A-0267) **Michel Isingrini, Lucie Angel, Séverine Fay, Sandrine Vanneste, Laurence Taconnat, Badiia Bouazzaoui**
Age differences in executive engagement during working memory updating depend on memory load

- PC-076
(A-0278) **Kiyofumi Miyoshi, Hiroshi Ashida**
Temporal coincidence between priming and implicit recognition
- PC-077
(A-0296) **Yann Etienne, Stéphane Dufau, Fabrice Guillaume**
ERP investigation of object-scene incongruity: The early meeting of memory and perception
- PC-078
(A-0335) **Stina Cornell Kärnekull, Fredrik U. Jönsson, Johan Willander, Sverker Sikström, Maria Larsson**
Influences of odor familiarity and identification on long-term odor recognition memory
- PC-079
(A-0665) **Kristina Karlsson, Sverker Sikström, Johan Willander**
Predicting the subjective experience and age of autobiographical memories based on content
- PC-080
(A-0704) **S. Kalenzaga, M. Sperduti, A. Anssens, M. Delhommeau, P. Martinelli, S. Lion, T. Gallarda, I. Amado, M. O. Krebs, C. Oppenheim, P. Piolino**
Source memory and self-reference in aging: insights from an IRMf study of autobiographical memory.
- PC-081
(A-0715) **V. O. Voloshyna, F. U. Jönsson, A. S. Sihinshyna**
Analytic inference: Can people predict the effect of interference on their memory?
- PC-082
(A-0716) **Polina Iamshchinina, Valeria Gershkovich**
The influence of choice blindness on false memory generation
- PC-083
(A-0720) **Antonia Krefeld, Margit E. Oswald**
Source Monitoring and Ease of Imagery. Confusion of real and imagined completions of natural symmetric shapes

Methods

- PC-084
(A-0147) **Radka Jersakova, Akira R. O'Connor, Chris J.A. Moulin**
Demand characteristics in research on subjective experiences of memory

Motor Control

- PC-085
(A-0011) **Markus Christiner, Susanne Reiterer**
Song and speech: examining the link between singing talent and speech imitation ability

Multimodal Processing

- PC-086
(A-0381) **Emmanuel Biau, Salvador Soto-Faraco, Lluís Fuentemilla Garriga, Ruth de Diego Balaguer**
Spontaneous beat gestures modulate speech processing through phase resetting of theta neural oscillations

Numerical Cognition

- PC-087
(A-0081) Caterina Primi, Francesca Chiesi, Kinga Morsanyi
The effect of maths anxiety on cognitive reflection
- PC-088
(A-0302) **Bart Anseeuw, Jean-Philippe Van Dijck, Wim Fias**
Spatial coding of a number is determined by its immediate context
- PC-089
(A-0338) **Tanja Link, Stefan Huber, Korbinian Moeller, Hans-Christoph Nuerk**
An embodied training of number line equidistance
- PC-090
(A-0487) **Yarden Glikzman, Shai Itamar, Tali Labovitch, Avishai Henik**
Physical and Conceptual Magnitude in Objects Perception
- PC-091
(A-0559) **Dana Sury, Orly Rubinsten**
Processing Symbolic and Non-Symbolic Ordinal Information: Is it an Acquired Ability?
- PC-092
(A-0614) **Sailee Shikhare, Stefan Heim, Elise Klein, Stefan Huber, Klaus Willmes**
Quantifier comprehension in schizophrenia

Perception and Action

- PC-093
(A-0108) **Christelle Pêcher, Céline Lemerrier, Jordi Ballester, Dominique Valentin**
Effects of cross-modal vision-olfaction influences in a priming task: A case in the wine domain
- PC-094
(A-0133) **Ryo Ishibashi, Gorana Pobric, Satoru Saito, Matthew A. Lambon Ralph**
The neural network for tool-related cognition: An activation likelihood estimation meta-analysis.
- PC-095
(A-0229) **V. C. Ramenzoni, G. Knoblich, N. Sebanz**
Scaling-up Perception-Action Links: Evidence from Synchronization with Individual and Joint Action.

Planning

- PC-096
(A-0290) **Jos J. Adam, Thamar J. H. Bovend'Eerd, Fren T. Y. Smulders, Pascal W. M. Van Gerven**
Strategic flexibility in response preparation: Effects of cue validity on reaction time and pupil dilation

Problem Solving and Reasoning

- PC-097
(A-0303) **Daniel Rivera, Josep Demestre**
Enthymemes: where informal reasoning meets discourse processes
- PC-098
(A-0378) **Victoria Smy, Helen Seeby, John Patrick**
Design Problem Solving

Rhythm and Timing

- PC-099
(A-0083) **Enes Avcu**
Time Perception in Picture-Word Interference Tasks
- PC-100
(A-0501) **Ursula Debarnot, Aymeric Guillot**
Does music tempo affect the temporal congruence between physical practice and motor imagery? A pilot study.

Social Cognition

- PC-101
(A-0127) **Alba Ayneto, Hernando Santamaría García, Nuria Sebastián-Gallés**
Do social hierarchies modulate neural mechanisms of repetition suppression?
- PC-102
(A-0279) **Kana Kuraguchi, Hiroshi Ashida**
The relation between baby schema and perception of age, beauty or cuteness
- PC-103
(A-0306) **Charlotte Desmet, Eliane Deschrijver, Marcel Brass**
How social is error observation? The neural mechanisms underlying the observation of human and machine errors
- PC-104
(A-0339) **Vivien Dioux, Renaud Brochard, Pierre De Oliveira, Daniel Zagar**
Priming young adults with the elderly stereotype induces caution, not slowness, in a lexical decision task.
- PC-105
(A-0548) **Roberto Cubelli, Roberta Sellaro, Barbara Treccani**
Task sharing can change the fate of task irrelevant information: Evidence from the joint Picture-Word interference paradigm
- PC-106
(A-0549) **Anna Rácz, Péter Kardos, Zsolt Unoka, Péter Soltész, Csaba Pléh**
Do external memory aids only help us to remember less emotionally important acquaintanceships?
- PC-107
(A-0552) **Gaëlle Meert, Dana Samson**
The implicit processing of beliefs: Toward an understanding of its triggering conditions
- PC-108
(A-0725) **Yasuhiro Kitamura, Masayoshi Shigemori, Takayuki Masuda, Naohiro Akiu**
The personality traits predict Violations: web survey and experiments simulating situations

PC-109 **A.M. Romanska, B. Duchaine, M. J. Banissy**
(A-0736) Enhancing facial identity perception using transcranial random noise stimulation

PC-110 **Francesca Morganti, Paride Braibanti, Antonella Carassa, Marco Colombetti, Elisa Borsa**
(A-0745) Joint Commitment Management in a Dyadic Situation: A non-verbal bodily expressions analysis

Spatial Cognition

PC-111 **Rossana De Beni, Chiara Meneghetti, Veronica Muffato, Erika Borella**
(A-0268) Map learning in young and older adults: what is the effect to re-present the map in recall phase?

PC-112 **Petr Kveton, Dalibor Voboril, Martin Jelinek**
(A-0320) Building a Complex Spatial Reasoning Test: Two-Steps Evaluation Process

Visual Processing

PC-113 **N. Paz-Baruch, M. Leikin, R. Leikin**
(A-0074) Visual-processing and attention in general-gifted and excelling-in-mathematics adolescents

PC-114 **Liesbet Van der Borght, Hanne Schevernels, Wim Notebaert**
(A-0101) Errors initially boost but ultimately fade subsequent visual processing

PC-115 **Julia Robotham, Martin Weis Lindegaard, Tzvetelina Shentova Delfi, Egill Rostrup, Helle Iversen, Randi Starrfelt**
(A-0199) Reading Faces and Facing words: Effects of unilateral posterior stroke on „specialised“ perceptual functions

PC-116 **Fabienne Chetail, Julie Leberre, Alain Content**
(A-0481) The role of the consonant/vowel pattern in the perceptual discrimination of letter strings

PC-117 **Ewa Domaradzka, Max Bielecki, Grzegorz Sędek**
(A-0483) Finding a better mirror of the soul – integrating psychophysiological and eye tracking measures in attitude research

SATURDAY | AUGUST 31

TALK SESSION 5 | 13:30-15:30

COSTS OF STORAGE AND BINDING IN VISUAL WORKING MEMORY SYMPOSIUM (Room: Harmonia)

Chair: Hubert Zimmer

Scientists agree that visual working memory has only a limited capacity of three to four units but they controversially discuss the constitution of these units. For example, objects are phenomenally perceived as units of color and shape but these different features are processed independently why they have to be bound by some mechanism(s). This binding might be obligatory or optional, and it might be for free or it costs something. Dependent on the held assumptions visual working memory represents different things and accordingly the amount of stored information may vary or not with task demands. In addition, the constitution of units may not only determine how much information is represented in working memory, but it may also influence how this information can be accessed. Each feature might be accessible individually or always the unit has to be addressed making available all features at the same time even features that are not task relevant. Again, depending on these assumptions memory for features or conjunctions of features varies and correspondingly costs for binding and unbinding may be observed. In the symposium experiments are reported which were conducted to get insights into these mechanisms and costs in order to deepen our understanding of visual working memory processes and of the reasons for its capacity limits.

- A-0767 **Jean-Francois Delvenne, Jessica Holt**
The bilateral field advantage in VSTM is a signature of attentional selection
- A-0288 **Glyn Humphreys, Jeong-Im Kim, Jane Riddoch**
Working memory binding and attentional guidance: Constrasting effects from maintaining and flushing information from working memory
- A-0282 **Yoni Pertzov, Nahid Zokaei, Masud Husain**
Forgetting over seconds: attention and the role of the hippocampus in binding features in memory
- A-0266 **Richard Allen, Graham Hitch, Alan Baddeley, Vivian Hu**
Exploring retention and forgetting of visual object sequences in working memory
- A-0115 **Robert H Logie, Mario Parra, Stephen Rhodes, Elaine Niven, Richard Allen, Louise Brown**
Binding has a cost in visual working memory but not in visual short-term memory
- A-0651 **Michael Kursawe, Hubert D. Zimmer**
Costs of binding and unbinding color and shape

BRINGING BILINGUALS TO THE HEART OF PSYCHOLINGUISTICS: A TRIBUTE TO THE MEMORY OF ROSA SANCHEZ-CASAS SYMPOSIUM (Room: 0.81)

Chair: Jose Garcia-Albea

Rosa Sanchez-Casas, Professor of Psychology at the University Rovira i Virgili (Tarragona, Spain) died on November 22, 2012 in Tarragona where she had lived and worked for the last 18 years. Rosa was an exceptional cognitive scientist who began to investigate bilingualism as an approach to psycholinguistics many years before the field itself recognized the great promise that bilingualism holds to illuminate language processes and their cognitive and neural substrates. She was also a deeply principled person, a wonderful friend, and a cherished colleague whose research on language processing in bilinguals inspired many collaborations across the world. In this symposium we honor Rosa's memory and share some of the collaborative research that was inspired by our interactions with her.

- A-0319 **Pilar Ferré, Cornelia D. Moldovan, Marc Guasch, Roger Boada, Josep Demestre, José E. García-Albea, Teófilo G. García-Chico**
Lexical processing in bilinguals: Variables that influence the activation of the two languages
- A-0129 **Montserrat Comesaña, Pilar Ferré, Ana Paula Soares, Isabel Fraga, Sofia Frade, Andréia Rauber**
Are the facilitatory effects of cognate words real? A study with Portuguese/English bilingual children and adults
- A-0157 **Teresa Bajo, Pedro Macizo, María Cruz Martín, Antonio Ibañez, Julia Morales, Luis Morales, Laura B. Hansen, Francisca Padilla, Patricia Román, Giulia Togato**
Activation and inhibition processes in bilinguals
- A-0749 **Núria Sebastián Gallés, Albert Costa**
Bilingualism along the Roman Via Augusta
- A-0737 **José M. Igoa, José E. García-Albea, Josep Demestre, Montserrat Sanz, Laura Rodrigo**
Syntactic processing in the acquisition of complex structures
- A-0090 **Carlos J. Álvarez, Horacio Barber, Alberto Domínguez**
Sublexical and emotional processing in bilinguals' visual word recognition
- A-0052 **Judith F. Kroll, Natasha Tokowicz, Paola E. Dussias, Janet G. van Hell**
From Tarragona to Pennsylvania: Collaborations on bilingual language processing

A CURRENT VIEW ON JOINT ACTION SYMPOSIUM (Room: 0.83)

Chair: Roman Liepelt

Joint action is a central aspect of our daily human life. Especially when we try to achieve goals that cannot easily be achieved alone, our ability to successfully coordinate our actions with those of other people is invaluable. To effectively interact with others we need to predict another person's actions and to adjust our own actions accordingly. In the last decade several experimental paradigms (e.g., social Simon task, social Flanker task, social dual-task paradigm) have been developed to study the cognitive and neural processes underlying joint action. In this symposium state of the art research on task sharing will be presented leading to a new theoretical perspective on joint action.

- A-0039 **Roman Liepelt**
Raise your hands in the air and say yeah: Evidence for a social hand-posture effect
- A-0314 **Anna Stenzel, Thomas Dolk, Roberta Sellaro, Lorenza Colzato, Bernhard Hommel, Roman Liepelt**
Conceptual similarity matters for joint action
- A-0383 **Roberta Sellaro, Thomas Dolk, Lorenza Colzato, Roman Liepelt, Bernhard Hommel**
Does the joint Simon effect exist for non-spatial dimensions?
- A-0055 **Thomas Dolk, Bernhard Hommel, Wolfgang Prinz, Roman Liepelt**
How social is the joint Flanker effect?
- A-0661 **Natalie Sebanz, Jessica Chia Chin Tsai, Günther Knoblich**
Joint Task Representations
- A-0042 **Bernhard Hommel, Lorenza Colzato, Ellen de Bruijn, Wery van den Wildenberg**
The relativity of self and other: Evidence from the Social Simon Task

FACTORS AFFECTING WORKING MEMORY PROCESSES (Room: 0.79)

- A-0153 **Klaus Oberauer**
The Effect of Phonological Similarity and Articulatory Suppression on Serial Recall: A Test of the SOB-CS Model
- A-0217 **Pierre Barrouillet, Valérie Camos, Annalisa Lucidi, Naomi Langerock**
Good ideas die hard: Forgetting in working memory increases with the number of concurrent repetitions of a non-sense syllable.
- A-0377 **Naomi Langerock, Evie Vergauwe, Pierre Barrouillet**
The role of encoding time in the maintenance of integrated information in working memory
- A-0119 **Justyna Olszewska, Joanna Ulatowska**
Reducing the misinformation effect: The role of type and temporal placement of warning instructions
- A-0166 **Pietro Spataro, Clelia Rossi-Arnaud, Neil W. Mulligan**
Divided Attention Can Enhance Memory Encoding: The Attentional Boost Effect in Implicit Memory.
- A-0236 **Laura Rerko, Alessandra S. Souza, Klaus Oberauer**
Retro-cue benefits in working memory without sustained focal attention

SOCIAL AND PRAGMATIC ASPECTS OF LANGUAGE COMPREHENSION (Room: 1.79)

- A-0078 **Hernando Santamaría García, Alba Ayneto, Nuria Sebastián-Gallés**
Effects of speaker's social hierarchy on sentence comprehension A week has seven days, depending on who says it.
- A-0650 **Francesco Vespignani, Giovanna Egidi, Massimo Salgaro**
Literary attitude affects lexical access
- A-0351 **Matthias J. Sjerps, Antje S. Meyer**
The initiation of speech planning in turn-taking.
- A-0517 **Thomas Pensaert, Elisah Dhooge, Robert Hartsuiker**
Monitoring the effect of our speech acts: An ERP study

BEYOND REWARD: CHARACTERIZING THE DIVERSE FUNCTIONS OF THE NEURAL 'REWARD' SYSTEM IN HUMAN COGNITION SYMPOSIUM (Room: 0.87)

Chairs: Nico Boehler and Clayton Hickey

Reward processing in the human brain has been associated with a network of brain areas that receive direct input from dopaminergic nuclei in the midbrain. This system has been associated with the representation of reward and reward prediction errors: subcortical dopaminergic neurons signal the degree to which outcomes differ from reward expectations, causing target sites to orchestrate a strategic response. Yet recent years have also seen an accumulation of results that do not immediately fit within this model.

This symposium will outline developing perspectives on the influence of this reward system on human behavior, stressing the multiple functions of brain areas traditionally associated with reward on the one hand, and emphasizing evidence of automatic, non-strategic influences on cognition on the other. One focus will be on results demonstrating the involvement of this system in perception, attention, and action, showing in various ways how the basic quality of visual representations is determined by prior outcome and associated brain activity. A second focus will be on results showing that the dopaminergic system is implicated in the recruitment of cognitive resources and establishment of cognitive control that can occur even under circumstances lacking an explicit reward manipulation.

The speakers rely on a wide range of cutting-edge methodologies, including the use of behavioural indices of visuomotor integration, concurrent recording of EEG and fMRI, analysis of multivoxel patterns in fMRI, use of MEG and behavioural tests to index pharmacological intervention, and high-speed tracking of saccadic eye movements. Modern psychological and neuroscientific research suggests that reward processing is not an isolated or discrete function in the human brain, but that it is represented and integrated across a host of brain areas and systems. The results presented in this symposium will highlight the correspondingly broad influence of this network on cognition and action.

- A-0331 **C. Nico Boehler**
The role of the dopaminergic system in recruiting cognitive processing resources
- A-0605 **Senne Braem, Nathalie Schouppe, Joseph A. King, Franziska M. Korb, Ruth M. Krebs, Tobias Egner, Wim Notebaert**
Intrinsic reward prediction errors determine feedback memory
- A-0336 **Nico Bunzeck**
The role of dopamine in controlling the temporal dynamics of neural memory signals
- A-0082 **Chiara Della Libera**
The pervasive effects of reward on skill learning: from visual selective attention to visuo-motor performance
- A-0509 **Clayton Hickey**
Reward guides attention to real-world object categories.
- A-0646 **Wieske van Zoest**
Saccadic eye movements and the non-strategic influence of reward.

EXECUTIVE CONTROL AND WORKING MEMORY: COGNITIVE CONTROL (Room: 0.89)

- A-0054 **Jochen Vandenberg, Natacha Deroost, Eric Soetens, Daphné Coomans, Eric Kerckhofs**
Cognitive determinants of freezing of gait in Parkinson's disease: automaticity and control
- A-0134 **D. Aisenberg, N. Cohen, H. Pick, I. Tressman, M. Rappaport, M. Shenberg, A. Henik**
Social Priming Improves Cognitive Control in Old Adults—Evidence from Simon Task
- A-0464 **Wout Duthoo, Elger L. Abrahamse, Wim Notebaert**
The influence of reactive and proactive control on the congruency sequence effect
- A-0573 **Nachshon Meiran, Michael W. Cole, Todd S. Braver**
When Planning Results in Loss of Control: Intention-Based Reflexivity and Proactive Control
- A-0664 **Eyal Kalantheroff, Amir Avnit, Marius Usher, Avishai Henik**
Control Over Informational and Task Conflicts during Maintenance and Updating Memory Tasks
- A-0740 **Lemaire Patrick, Hinault Thomas**
Age-related differences in executive control during strategy execution: A study in arithmetic problem solving.

NUMERICAL COGNITION: NUMBER PROCESSING (Room: 0.100A)

- A-0016 **Dana Ganor-Stern**
Are 1/2 and 0.5 Represented in the Same Way?
- A-0439 **Thomas Mitchell, Rebecca Bull, Alexandra A Cleland**
Effects of aging and numerical representation on spatial-numerical associations during neural overlap tasks.
- A-0484 **Javier García-Orza, Alejandro Estudillo, José Miguel Rodríguez Santos, Marina Calleja**
Automatic processing of place-value in four-digit numbers depends on number complexity
- A-0513 **Naparstek Sharon, Safadi Ziad, Lichtenstein-Vidne Limor, Henik Avishai**
Flanking Magnitudes: Dissociation between Numerosity and Numerical Value in a Selective Attention Task
- A-0553 **Claudia Gianelli, Elena Sixtus, Martin Fischer, Silke Göbel**
TMS over finger motor cortex impairs number perception

TIMING AND PREDICTION (Room: 0.100B)

- A-0297 **Gethin Hughes, Cedric Roussel, Andrea Desantis, Florian Waszak**
The role of motor prediction in attenuation of sensory action-effects
- A-0625 **Neil Harrison, Michael Ziessler**
The time-course of action effect anticipation in response planning: an event-related potential (ERP) study
- A-0726 **Isabel Catarina Martins, Armando Mónica de Oliveira**
Time-to-collision in people with cerebral palsy: Does the nature of the obstacle matter?
- A-0022 **Joseph Glicksohn, Aviva Berkovich-Ohana, Yair Dor-Ziderman, Abraham Goldstein**
Counting on the Internal Clock
- A-0029 **Ronen Golan, Dan Zakay**
A Collection of Evidences for the Existence of Pre-Attentive Processes of Temporal Encoding Manifested in Simultaneous Local and Global Representation of Time in the Human Brain
- A-0280 **Renaud Brochard, Maxime Tassin, Daniel Zagar**
Positive and negative effects of auditory rhythmic attention on visual recognition performances.

TALK SESSION 6 | 16:00-17:40**NEURO-COGNITIVE MECHANISMS OF CONSCIOUS AND UNCONSCIOUS VISUAL PERCEPTION
SYMPOSIUM (Room: 0.81)***Chair: Heiko Reuss*

Elucidating human consciousness remains one of the greatest scientific challenges in the 21st century. This symposium is dedicated to the research of both conscious and unconscious visual perception, cognitive and neuronal mechanisms that underlie phenomenal experience, as well as the potential function of conscious awareness in information processing. One of the most debated topics in recent years is the interplay of top-down control and unconscious processing. While traditional views of automaticity and control assumed that automatic processing is mostly independent of control processes, and that cognitive control processes cannot be impacted on by unconsciously presented stimuli, both kinds of processes actually seem to be able to influence each other. First, it has been found that unconscious processing is susceptible to top-down influences like currently active task sets. Here we discuss how other top-down influences like expertise modulate information processing and the impact of masked stimuli. Second, there is converging evidence that cognitive control processes can be influenced or triggered by unconscious stimulation. We present results concerning whether and under which circumstances masked primes are able to induce conflict adaptation, a cognitive control process that has previously been found to be closely linked to consciousness. Another important question examined in the symposium is the relation of motor preparation and conscious access to visual targets. It was investigated through the analysis of lateralized readiness potentials to what extent stimuli that are not consciously perceived due to distractor-induced blindness in a rapid serial visual presentation (RSVP) are processed. Finally, findings that show how the hemispheres interact in processing of stimuli presented at the vertical midline are discussed. These results concern elementary processes that are relevant to the generation of conscious visual percepts.

- A-0094 **Carsten Pohl, Wilfried Kunde, Thomas Ganz, Annette Conzelmann, Paul Pauli, Andrea Kiesel**
Gaming to see: Action Video Gaming enhances processing of masked stimuli
- A-0167 **Heiko Reuss, Kobe Desender, Andrea Kiesel, Wilfried Kunde**
Adaptation to unconscious conflicts in unconscious contexts
- A-0316 **Ulrich Ansorge, Michael Forster, Helmut Leder**
Polarity Correspondence and Conflict Regulation in Supra- and Subliminal Priming
- A-0506 **M. Niedeggen, G. N. Winther**
Covert motor preparation in distractor-induced blindness
- A-0047 **Rolf Verleger, Marie Dittmer, Kamila Smigasiewicz**
Cooperation or competition of the two hemispheres in processing characters presented at vertical midline

**BEYOND 'SIMPLE' DECISION MAKING: WHAT CAN THE DRIFT DIFFUSION FRAMEWORK TELL US ABOUT COGNITIVE CONTROL?
SYMPOSIUM (Room: 0.83)***Chairs: Boris Burle and Eric-Jan Wagenmakers*

Two-alternative force-choice is often considered a simplified version of more natural stimulus-based decision making. The drift-diffusion model, which assumes that decision is based on the continuous accumulation of noisy evidences until a threshold is reached, has been very successful in accounting for both chronometric and accuracy data in such tasks. Furthermore, neurophysiological data tend to support such rise-to-threshold models. One limitation, however, is that such models are mainly „bottom-up“, that is stimuli-driven. Since, for sake of simplicity, they initially did not incorporate any top-down control effect, they faced difficulties to account for adaptive behaviors. More recently, efforts have been developed to enlarge the scope of this modeling framework to also account for „more complex“ situations, supposed to involved cognitive control. Such situations include conflict, stop tasks and post-error slowing etc.... The goal of this symposium is bring together researchers involved in such extensions to discuss if and how the drift diffusion framework can help us in understanding cognitive control. By mixing experimental and modeling work, the presentations will provide a large overview of this recent and very active field in cognitive psychology and neuroscience.

- A-0080 **Eric-Jan Wagenmakers, Gilles Dutilh**
A diffusion model account of post-error slowing
- A-0222 **Ronald Hübner**
Early and late attentional selection for action control: A computational approach
- A-0425 **Corey N White**
Decomposing individual differences in cognitive control with decision models
- A-0305 **Mathieu Servant, Anna Montagnini, Boris Burle**
Conflict tasks and the diffusion framework: Insight in model constraints based on psychological laws
- A-0207 **Leendert van Maanen, Dilene van Campen, Birte U Forstmann, Roger Ratcliff, K Richard Ridderinkhof**
What are the latent processes of the Simon effect?

**HOW WE MAKE FALSE MEMORIES: SEVERAL EXPLICATIVE FACTORS
SYMPOSIUM (Room: 0.79)**

Chair: Anne-Laure Gilet

Since the late 1990s, researchers have become increasingly interested in investigating false memories. The primary interest of earlier studies was to better understand the experimental paradigms that foster the likelihood of false memories. Interest has recently been renewed in the study of individual differences in the susceptibility to false memories and more precisely towards the various factors that may be in relation to false memories. This symposium addresses these issues through representative empirical work investigating several factors that can contribute to the creation or the reduction of false memories. Dewhurst and colleagues investigate the potential influence of future thinking on the probability of false memories with a Deese-Roediger-McDermott (DRM) paradigm and then discuss how adaptive memory strategies can explain this phenomenon. Van Damme and colleagues focus on the emotional content of witnessed events in the misinformation procedure. Using the same paradigm, Mahé and colleagues present data suggesting that induced mood states, according to their valence and arousal levels modulate the creation of false memories. Colombel and colleagues examine the role of inhibition capacities and monitoring processes in age-related differences in the production of false memories in a DRM paradigm. Finally, Dehon explores the protective role of education on the production of DRM false memories in adulthood and aging.

- A-0085 **Ilse Van Damme, Karolien Smets, Robin L. Kaplan, Linda J. Levine, Elizabeth F. Loftus**
Memory for emotional events in the misinformation paradigm: Motivation matters
- A-0294 **Aurélia Mahé, Yves Corson, Nadège Verrier**
Which dimension of mood can modulate the misinformation effect: valence or arousal?
- A-0407 **Fabienne Colombel, Marine Tessoulin, Yves Corson**
How explaining false memories in adulthood: Relationship between inhibition capacities and monitoring processes
- A-0263 **Hedwige Dehon**
False memories and cognitive reserve: Education protects against false memories in younger, older and very-old individuals

LEARNING 2 (Room: 1.79)

- A-0023 **Paul Ibbotson, Diana García López, Alan J. McKane**
In a noisy world (some) forgetting helps cross-situational learning
- A-0393 **Robert Balas, Joanna Sweklej, Bertram Gawronski**
Automatic features of evaluative learning
- A-0587 **Seda Dural**
The Effects of Stimulus Modality on Autonomic Fear Response Extinguished Throughout the Reconsolidation Process of Fear Memory

- A-0592 **Ezgi Gur, Seda Dural**
The Long-Lasting Effects of Extinction during the Reconsolidation Process of Fear Memory
- A-0613 **Hakan Cetinkaya, Seda Dural**
The Effects of Autonomic Lability and Stimulus Modality on Acquisition and Extinction of Instructed Fear

ATTENTION (ROOM: 0.87)

- A-0096 **Noam Weinbach, Avishai Henik**
The Role of Arousal in Modulating Executive Functions
- A-0233 **Signe Vangkilde, Anders Petersen, Claus Bundesen**
How temporal expectations bias attention
- A-0686 **A. Brzezicka, N. Kowalczyk, M. Bielecki**
Frontal Theta Power as a Predictor of Sternberg Task performance – Multilevel Approach
- A-0274 **Birte Moeller, Christian Frings**
Attention modulates binding: Only attended distractors are used for the retrieval of event files.
- A-0095 **Merim Bilalic**
Many Faces of Expertise: Fusiform Face Area in Chess Experts and Novices

EXECUTIVE CONTROL AND WORKING MEMORY: LEARNING (ROOM: 0.89)

- A-0174 **J. A. García-Madruga, J. O. Vila, I. Gómez-Veiga, M. R. Elosúa, G. Duque**
Reading Comprehension and WM's executive processes in 3th Grade Primary Students
- A-0728 **Cristian A. Rojas-Barahona, Carla E. Förster M., Sergio Moreno-Ríos**
impact of a stimulation program of working memory on precalculus skills in prekindergarten children of vulnerable rural and urban areas
- A-0248 **Fotis A. Fotiadis, Athanassios Protopapas**
The Effect of Verbal and Non-verbal Labels for the Cues in Probabilistic Category Learning
- A-0527 **Michael D. Patterson, Qinyuen Wong**
Do inserted questions within a text improve or hinder learning?
- A-0678 **Riccardo Brunetti, Franco Delogu, Martine Zandvoord**
eCorsi for digital tablets: Expanding the potential uses of the most popular visuo-spatial working memory task

COGNITION AND EMOTION 2 (Room: 0.99)

- A-0405 **E. S. Dmitrieva, V. Ya. Gelman, K. A. Zaitseva, A. M. Orlov**
Features of Lateralization of Speech Emotional Prosody Perception in the Process of Perceptual Learning
- A-0604 **Aysegul Aydinlik, Seda Dural**
Determining Saliency Levels of Emotional Facial Expressions by Using Instructed-Lying Paradigm
- A-0713 **Michal Olszanowski, Piotr Winkielman**
Fluent faces: Influence of processing dynamics on social judgments of emotional displays.
- A-0099 **Joanna Ulatowska**
Cognitive load or emotional arousal? The accuracy of indirect methods of deception detection in different lie scenarios.

SEMANTIC ASPECTS OF LANGUAGE PROCESSING (Room: 0.100A)

- A-0017 **Bálint Forgács, Megan D. Bardolph, Ben D. Amsel, Katherine A. DeLong, Marta Kutas**
ERPs Talk: Are Metaphors Abstract or Concrete?
- A-0449 **Alastair Smith, Padraic Monaghan, Falk Huettig**
Putting rhyme in context: Visual and semantic competition eliminates phonological rhyme effects in language-mediated eye gaze
- A-0298 **Sebastien Roux, Patrick Bonin**
„red” matters when naming „tomato” : the cascading activation of color properties during object naming

LINGUISTIC ASPECTS OF BILINGUALISM (Room: 0.100B)

- A-0257 **Uschi Cop, Denis Drieghe, Wouter Duyck**
Reading a novel in your second language: A comprehensive eye tracking study
- A-0406 **Amparo Herrera, Pedro Macizo, Verónica Juárez**
How do bilinguals translate numerical words?
- A-0544 **Anat Prior, Eilat Markus, Tamar Degani**
Lexical and morphological influences across the language boundary
- A-0565 **Tamar Degani, Tessa Warren, Natasha Tokowicz**
Reading patterns in non-native and bilingual readers: Semantic Effects
- A-0721 **Xin Wang, Yuejie Qi**
The Cognate Status in the Chinese-English and English-Chinese Bilingual Lexicon
- A-0436 **Monika Molnar, Marie Lallier, Manuel Carreiras**
Perceptual tone grouping of monolingual and bilingual infants: A window into early syntax acquisition

SATURDAY | AUGUST 31

18:00-19:00

BERTELSON LECTURE (Room: Harmonia)

- A-0774 **Roy Cohen Kadosh**
From Cognition to Neurochemicals

TALK SESSION 7 | 09:00-11:00**ATTENTIONAL BLINK LIKE EFFECTS: A TALE OF THE SALIENT AND THE UNEXPECTED SYMPOSIUM (Room: 0.81)***Chair: Wim Notebaert*

The original attentional blink (AB) paradigm (Chun & Potter, 1995) was used as a means to investigate the temporal dynamics of attention. In numerous studies it has been shown that when two targets are presented shortly after each other in a stream of non-target stimuli, it is harder to identify the second target (T2) when it is presented within 200 – 500 ms after the first target. This failure to detect T2 is called the attentional blink effect. In more recent years, various paradigms have been used to demonstrate AB-like effects following unexpected or salient stimuli. Most et al. (2005), for instance, demonstrated that arousing emotional stimuli induce an attentional blink. Similarly, Asplund et al. (2010) reported an attentional blink after irrelevant surprising stimuli. In this symposium six studies are presented that demonstrate more AB-like effects. These studies reveal important cognitive and neural mechanisms related to the prioritization of unexpected or salient information. More specifically, these studies will reveal what AB-like effects tell us about visual and auditory oddball processing, error monitoring, affective processing, and word recognition.

- A-0224 **Stefan Berti**
What the attentional blink can tell us about visual oddball processing
- A-0075 **Fabrice B. R. Parmentier, Pilar Andrés**
Novelty distraction and post-error slowing as manifestations of surprise-related slowing
- A-0089 **Helen Tibboel, Jan De Houwer**
The impact of surprise and expectancy on the emotional modulation of the attentional blink
- A-0168 **Iria SanMiguel**
Self-generated sounds and their omissions: A window into the neural code of sensory predictions
- A-0732 **Rene Zeelenberg, Bruno Bocanegra, Diane Pecher**
The effect of distractor emotionality, word frequency and semantic interrelatedness on word recognition
- A-0076 **Wim Notebaert, Femke Houtman, Liesbet Van der Borght**
The error-induced attentional blink effect for unexpected errors

CONTROL OF EMOTIONAL REACTIONS SYMPOSIUM (Room: 0.83)*Chairs: Hadas Okon-Singer and Noga Cohen*

Threatening stimuli prototypically result in activation on several psycho-physiological systems, leading to enhanced vigilance, elevated heart rate, and neural activation in various cortical and sub-cortical regions, including limbic and sensory areas. The classic view regards these reactions to aversive stimuli as automatic, pre-attentive, and sub-conscious. Recent evidence, however, reveals that humans are able to control their behavioural, physiological, and neural reactions to highly-aversive information. The ability to control emotional reactions was linked to neural activation in prefrontal regions, especially the dorsolateral prefrontal cortex (DLPFC) and the anterior cingulate cortex (ACC). Moreover, this adaptive emotion control ability differs between individuals as a function of anxiety-related traits, and may be abnormal in psychiatric disorders. Speakers in the current symposium will discuss the cognitive mechanisms and underlying neural networks at the basis on emotion control in healthy individuals, as well as patients. These discussions will add to the development of a neuro-cognitive model of emotion control in health and its breakdown in disease. In a long term perspective, knowledge developed in this symposium might lead the way to the development of efficient therapeutic interventions.

- A-0051 **Julia Vogt**
Threat in Context: Current Goals Shape Early Attention to Threat

- A-0050 **Christine L. Larson, Daniel M. Stout, Alexander J. Shackman, Tara Miskovich**
 Preferential access of threat to working memory in anxiety
- A-0765 **Tatjana Aue, Marie-Eve Hoeppli, Maria Chiara Liverani**
 Emotion regulation by variations in attention
- A-0747 **Nazanin Derakhshan**
 Cognitive Capacity Limits in Anxiety and Depression: Can they be increased?
- A-0681 **Carien van Reekum**
 Does the control of emotion require intact cognitive control? Examples from aging research
- A-0752 **Talma Hendler, Yehonatan Wentraum, Yael Yaakov, Lavie Shpigelman, Neomi Singer, Gal Raz**
 Portraying Emotion Regulation Processes by Dynamic Network Modulation
- A-0079 **Luke J. Chang, Peter J. Gianaros, Steve Manuck, Anjali Krishnan, Tor D. Wager**
 Specificity of Neural Responses to Emotion

**TIME AS INFORMATION: TEMPORAL EVENT PREDICTION IN HUMANS, ANIMALS AND MACHINES
 SYMPOSIUM (Room: 0.79)**

Chair: Roland Thomaschke

When interacting with the environment one experiences various types of delays. Most of these delays are predictive, in the sense that their duration is informative about the following event. For example, the duration of pauses in oral speech predicts the complexity of the following expression, and a long web page loading time makes an error message more likely. One rapidly adapts to such predictive temporal structures. After some learning with predictive intervals, behavioural dispositions dynamically change throughout the passage of a waiting interval, in a way that one is optimally prepared for the most likely event at each moment. For the last few years, a fast growing number of studies have aimed at determining the functional bases as well as the practical implications of adaptation to event-predictive delays. However, these studies come from different sub-disciplines of cognitive psychology, with currently little mutual exchange of findings between the different literatures. The symposium aims at bringing together researchers with different perspectives on time-based event prediction, in order to facilitate the transfer of knowledge between the various sub-disciplines. The most classical studies on time-based event prediction are from the bisection task in animal research. In this task, animals learn to associate different interval durations with specific behaviours. More recently, human cognitive psychology has begun investigating the role of event predictive delays in areas like implicit sequence learning, language comprehension and neuropharmacology. With regard to applied research, findings in automated speech processing indicate that the assessment of pause patterns in oral speech can support medical diagnoses.

- A-0498 **Fuat Balci**
 Time-based reward maximization
- A-0196 **Daniel J. Sanchez, Paul J. Reber**
 Implicit learning of precisely timed action sequences: Forming inflexible and integrated representations
- A-0738 **Felicia Roberts**
 Timing and cognitive processing in a dyadic framework: What gaps in conversation can teach us.
- A-0619 **Serguei VS Pakhomov, David S Knopman**
 Automated assessment of speech fluency to measure changes in cognition
- A-0161 **Marina Kunchulia, Roland Thomaschke**
 The effects of alcohol on temporal event prediction
- A-0103 **Roland Thomaschke, Gesine Dreisbach**
 Prediction of event valence by time of occurrence: A case of anticipative emotion regulation?

WORD RECOGNITION (Room: 1.79)

- A-0216 **Maria Ktori, Thomas Hannagan, Brechtsje Kingma, Phillip J. Holcomb, Jonathan Grainger**
An ERP investigation of adjacent and non-adjacent transposed-letter priming
- A-0345 **Louis ten Bosch, Lou Boves, Mirjam Ernestus**
Towards an end-to-end model of speech comprehension: modeling a lexical decision task
- A-0379 **Mirjam Ernestus, Iris Hanique, Ellen Aalders**
The robustness of exemplar effects in word comprehension
- A-0480 **Alain Content, Fabienne Chetail**
The word length illusion: Linguistic structure biases perception
- A-0495 **Thomas Hannagan, Jim Magnuson, Jonathan Grainger**
Without a TRACE and Without Handwiring
- A-0640 **S. Casalis, P. Quémart, L. Duncan**
Sensitivity to base and suffix units in children during word recognition: an English-French cross-language comparison

ATTENTION: VISUAL ATTENTION (Room: 0.87)

- A-0427 **Søren Kyllingsbæk, Jocelyn L. Sy, Claus Bundesen, Barry Giesbrecht**
The Nature and Allocation of Visual Processing Capacity
- A-0471 **Torsten Schubert, Petra Redel, Steffen Kluckow, Kathrin Finke, Tilo Strobach**
Effects of action video gaming on perceptual threshold, processing speed, and capacity parameters of visual attention
- A-0505 **Kohske Takahashi, Katsumi Watanabe**
Gaze cueing by face-like objects
- A-0615 **Carsten S. Nielsen, Signe Vangkilde, Anders Petersen, Claus Bundesen**
The Value of Paying Attention
- A-0677 **Radoslaw Sterczynski, Agnieszka Poplawska, Marta Roczniowska, Barbara Szamotulska, Alina Kolanczyk**
Ellipses test - a new research tool to measure extensive vs intensive attention.

MEMORY: WORKING MEMORY (Room: 0.89)

- A-0482 **Joanna Sweklej, Robert Balas, Ludmiła Kulawik**
The dynamics of intuition depend on semantic associations and affect
- A-0621 **T Narimoto, Gerry Quinn**
Executive Processes in Visual Working Memory
- A-0459 **Sezin Oner, Sami Gulgoz**
The role of executive function and attachment styles on autobiographical memories of relationships
- A-0526 **Nadia Gamboz, Maria A. Neroni, Maria A. Brandimonte**
On the relationship between episodic future thinking and prospective memory
- A-0594 **Chiara Mirandola, Cesare Cornoldi, Enrico Toffalini, Marta Drabik, Annika Melinder**
False memories of emotional events: Depression does not protect against memory distortions
- A-0706 **Eva Rubínová**
Stress and recollections in Deese-Roediger-McDermott paradigm and Autobiographical Memory Test

THINKING (Room: 0.100A)

- A-0194 **M. I. Foster, M. T. Keane**
Surprise: Remarkably Difficult to Explain
- A-0258 **N. Ortega-Castro, I. Barbería, M. A. Vadillo, A. G. Baker**
Do people combine causes normatively?
- A-0114 **Leen Janssens, Walter Schaeken**
'But' how do children reason with it?
- A-0308 **Orlando Espino, Ruth M. J. Byrne**
Heuristic Processes in Inferences Between Conditionals And Disjunctions
- A-0341 **Ruth M. J. Byrne, Ana Cristina Quelhas, Csongor Juhos**
Conditional reasoning about intentions
- A-0589 **Eric D. Johnson, Elisabet Tubau**
Beyond Statistical Formats in Bayesian Inference: Nested Sets, Prospective Reasoning, & Numeracy

DEVELOPMENT 2 (Room: 0.100B)

- A-0058 **Zsuzsanna Schnell**
Pragmatics and Social Cognition – A Developmental Approach
- A-0176 **Mikołaj Hernik, Gergely Csibra**
Infants learn functions of novel tools from the outcomes of instrumental demonstrations
- A-0554 **Olivier Mascaro, Gergely Csibra**
How human infants discover and represent social structures: The case of social dominance hierarchy
- A-0028 **Tiziana Zalla, Marco Sperduti**
Altered pre-reflective Sense of Agency in Autism Spectrum Disorders
- A-0149 **Gwendoline Mahé, Anne Bonnefond, Nadège Doignon-Camus**
Ventral and dorsal stream processes in visual word recognition in dyslexia: Comparisons between dyslexics, poor readers and expert readers.
- A-0285 **Maaïke Callens, Carol Whitney, Wim Tops, Marc Brysbaert**
No deficiency in left-to-right processing of words in dyslexia but evidence for enhanced visual crowding.

SUNDAY | SEPTEMBER 1

11:30-12:30

KEYNOTE LECTURE 4. (Room: Harmonia)

- A-0771 **Michal Tomasello**
Human Collaboration

12:30-12:40

CLOSING (Room: Harmonia)

WEDNESDAY | AUGUST 28, 2013 | 14:30-18:30 | ROOM 0.83

ESCO-APS SYMPOSIUM: BUILDING A BETTER PSYCHOLOGICAL SCIENCE: GOOD DATA PRACTICES AND REPLICABILITY

PRE-CONFERENCE EVENT (Room: 0.83)

Chair: Cristina Cacciari

PROGRAM

- 14.30-14.40 **C. Cacciari** (*University of Modena, Italy; ESCoP*)
WELCOME
- 14.40-15.10 **A. Cleeremans** (*Université Libre de Bruxelles, Belgium*)
TRUTH OR HYPE? SHIFTING VALUES AND NORMS IN (PSYCHOLOGICAL) SCIENCE
As Diederick Stapel himself explains in the book he recently published about his travails, both fraud as well as questionable research practices may stem from the progressive and ongoing transformation of academia into a business of sorts. When publication can yield monetary rewards, when the media ask for simplistic headlines, when your entire career appears to hinge on that paper in Science, there is indeed tremendous pressure to change the norm ever so slightly. But so begins a slippery slope in which the very ideal of science – finding what is true and what is false – begins to fade away.
- 15.10-15.20 *Discussion*
- 15.20-15.50 **E.J. Wagenmakers** (*University of Amsterdam, The Netherlands*)
THE EXCITEMENT OF CONDUCTING A REPLICATION STUDY
Replication studies have a bad rep. According to popular opinion, conducting a replication study is the academic equivalent of doing the laundry: an activity that is perhaps necessary, but intrinsically boring, and certainly nobody's hobby. Popular opinion, however, is dead wrong here. Replication studies are exciting, and in fact more so than "regular" or "innovative" research. In the first part of this presentation I will demonstrate by means of concrete examples how replication studies generate ample quantities of knowledge, hope, surprise, debate, media attention, anger, and fear. In the second part of this presentation I will explain how the impact of a replication study can be maximized by proper design and analysis.
- 15.50-16.00 *Discussion*
- 16.00-16.20 *Coffee break*
- 16.20-16.50 **H. Pashler** (*University of California, San Diego, USA*)
INCENTIVES AND PRACTICES TO PROMOTE REPLICABILITY
There is widespread agreement that to improve our science, we need less hyping of preliminary results, more efforts at replication, and better dissemination of replication results. I argue that exhortation is unlikely to make much difference here, and that we should look honestly at the grave mismatch between current incentives (what people are actually rewarded for) and the behaviors that we want to see promoted. Only by changing incentives can we achieve major reform.
- 16.50-17.00 *Discussion*
- 17.00-17.30 **B. Nosek** (*University of Virginia, USA*)
SCIENTIFIC UTOPIA
How can existing scientific practices be improved to increase efficiency in the accumulation of knowledge, and the alignment between daily practices and the values of the academic community? I will discuss some present and possible futures of scientific communication and practices.
- 17.30-17.40 *Discussion*
- 17.40-18.10 Discussant:
B.A. Spellman (*University of Virginia, USA*)
EDITOR "PERSPECTIVES ON PSYCHOLOGICAL SCIENCE"
- 18.10-18.30 *General Discussion*

THURSDAY | AUGUST 29, 2013 | 10:00-12:00 | ROOM 0.83

EUROPEAN RESEARCH COUNCIL (ERC) SYMPOSIUM
PRE-CONFERENCE EVENT (Room: 0.83)

Chair: Nuria Sebastián Gallés

This symposium will bring together representatives of the scientific Council, grantees, evaluators, and scientific officers, to give an overview of ERC activities. All the main aspects of the ERC will be presented in details: ERC Scientific Council policy, funding schemes and evaluation process, update on the latest results, follow-up of ERC funded projects, role and place of the ERC in the next framework programme (Horizon 2020).

PROGRAM

- 10:00-10:45 INTRODUCTION
Nuria Sebastian Gallés and Pascal Dissard (ERC)
- 10:45-11:15 PRESENTATION OF SUCCESSFUL ERC PROJECTS
Agnes Kovacs, *Central European University, Budapest*;
Jonathan Grainger, *Aix Marseille University*;
Avishai Henik, *Ben Gurion University of the Negev*
- 11:15-11:35 WORDS FROM THE EVALUATORS
Ram Frost, *Hebrew University Jerusalem*;
Csaba Pléh, *Esterházy College, Eger*
- 11:35-12.00 DISCUSSION AND Q&A

ABOUT THE EUROPEAN RESEARCH COUNCIL (ERC)

The ERC is the first pan European funding body set up to support the best frontier research in Europe. Created by the European Commission in 2007, it is the newest pioneering component of the EU's Seventh Research Framework Programme. It has a total budget of € 7.5 billion (2007-2013). The ERC aims to stimulate scientific excellence in Europe by supporting the very best scientists, scholars and engineers in any field of research. Scientific excellence is the sole selection criterion. There are neither thematic priorities, nor geographical quotas. The competitions are open to top researchers from anywhere in the world, provided they are based in or are moving to Europe. ERC expects that its grants will help to bring about new and unpredictable scientific and technological discoveries - the kind that can form the basis of new industries, markets, and broader social innovations of the future.

ERC Starting and Consolidator Grants aim to support up-and-coming research leaders who are about to establish or consolidate a proper research team and to start conducting independent research in Europe. The schemes target promising researchers who have the proven potential of becoming independent research leaders. ERC Advanced Grants allow exceptional established research leaders of any nationality and any age to pursue ground-breaking, high-risk projects that open new directions in their respective research fields or other domains. For 2012 the ERC has introduced the 'Synergy Grant', which is intended to enable a small group of Principal Investigators and their teams to bring together complementary skills, knowledge, and resources in new ways, in order to jointly address research problems. In addition, the ERC launched the new funding initiative, called „Proof of Concept“, in March 2011, open to researchers who have already been awarded an ERC grant. This additional funding allows ERC grantees to establish the innovation potential of ideas arising from their ERC-funded projects.

KEYNOTE LECTURE 1. THE BROADBENT LECTURE

Thursday, August 29, 2013 | 18:30-19:30

A-0770

THE SALIENT SELF: HOW SELF-PRIORITIZATION MODULATES PERCEPTION

Glyn Humphreys, Jie Sui

Department of Experimental Psychology, Oxford University, UK

Humans show strong biases towards self-related information, but exactly how these biases come about and how they are implemented in the brain remains poorly understood.

In this talk I will summarise recent work from my laboratory which has examined the functional and neural basis of self biases and how they modulate basic perceptual processes. We have used a novel associative learning paradigm to 'tag' a neutral shape with self-significance, and we are then able to evaluate how this tagging changes perception. Using neuropsychological, behavioural and brain imaging techniques, we show that self-tagging rapidly modifies neural coding, linking brain regions associated with the self to regions concerned with attentional orienting. In addition we demonstrate changes in the perceptual saliency of self associated shapes. The work shows that visual perception operates within a social context in which perceptual processes are tuned to self interest.

KEYNOTE LECTURE 2.

Friday, August 30, 2013 | 18:30-19:30

A-0772

THE FUNCTIONAL ORGANIZATION OF THE VENTRAL VISUAL PATHWAY IN HUMANS

Nancy Kanwisher

MIT, Cambridge, USA

Over the last fifteen years, functional imaging studies have provided a richly detailed view of the functional organization of the ventral visual pathway in humans. In this talk I will take stock of what we have learned so far, and attempt to identify the most important unanswered questions. In particular, functional imaging has powerfully complemented prior behavioral and neuropsychological work in enabling us to discover the major components of the processing machinery that holds our representation of the visual world. The most robust finding is the discovery of a set of brain regions that respond selectively to faces, places, bodies, and objects. Each of these regions is found in approximately the same location in virtually every normal subject, thus constituting part of the fundamental architecture of the human visual mind and brain. Beyond these widely-replicated results, though, lie numerous controversies and unanswered questions. First, does the representation of a given object occupy much of the expanse of the ventral pathway (the "distributed" view), or are some objects primarily represented in a small number of focal regions? Here I will argue that although pattern analyses do show that many category-selective regions hold some information about nonpreferred stimuli, the important question is which of this information is used, that is, which plays a causal role in perception – a question that is hard to address with neuroimaging but that has been powerfully addressed with TMS, electrical stimulation, and patient studies. Second, how does the functional organization of the ventral pathway arise in development, and why do the functionally specific regions land where they do in the brain? In contrast to widespread claims, we find that much of the organization of the ventral pathway (including the FFA) is nearly adultlike in children. These results underscore the importance of looking at younger children or infants, which is nearly impossible with fMRI in humans. Further, the deepest and most wide open questions about the development of the ventral pathway concern the role of experience, and the question of whether an early-developing functional or structural organization instructs the later development of category-selective cortical regions. Third, we have not made enough progress on the central problem of characterizing the representations extracted and computations performed in each of these regions, a question that may require the temporal and neuron-level precision available only in animal models. Fourth, what is the connectivity of each of these regions to each other and the rest of the brain? Although clues are emerging from diffusion and resting functional studies, neither method is perfect, leaving this fundamental question largely unanswered. Fifth, are functionally distinctive regions are best thought of as discrete processors, or whether the whole ventral pathway should be considered as a single representational matrix in which each of these regions simply constitutes a local peak in the functional response? On the latter view, the question would still remain of why that landscape would contain the particular replicable configuration it does, and what if any are the dimensions represented by axes of this broader "map". Finally, how do regions within the ventral pathway interact with each other to produce our richly detailed experience of the visual world, and how do these systems culminate in even higher-level visual representations that subservise social cognition and physical/causal reasoning?

KEYNOTE LECTURE 3. THE BERTELSON LECTURE

Saturday, August 31, 2013 | 18:00-19:00

A-0774

FROM COGNITION TO NEUROCHEMICALS

Roy Cohen Kadosh

Department of Experimental Psychology, University of Oxford, Oxford, UK

A genuine understanding of cognitive architecture and its underlying mechanisms requires an integrative approach that examines cognitive processes at multiple levels including behaviour, functional activation, brain structures, and even neurochemicals. In the first part of the talk I will discuss various experiments that shed light on the cognitive architecture of one of the most complex human abilities: numerical cognition. I will further show how the synergy between cognitive psychology and other fields has instigated changes to previous cognitive theories in numerical cognition. In the second part of the talk I will show how investigations at the micro- and macro levels (in this case, neurochemicals, and behaviour, respectively), can allow us better understanding on how to manipulate the brain in order to harness plasticity and improve human cognition. Together, this will demonstrate how basic research in cognitive psychology can benefit from other fields, and how in turn knowledge gathered in cognitive psychology research can have basic and translational implications in other fields such as neuroscience, education, and rehabilitation.

KEYNOTE LECTURE 4.

Sunday, September 01, 2013 | 11:30-12:30

A-0771

HUMAN COLLABORATION

Michal Tomasello

Max Planck Institute for Evolutionary Anthropology (EVA), Leipzig, Germany

Although great apes collaborate for some purposes, recent studies comparing chimpanzees and human children suggest that human collaboration is unique both cognitively and motivationally. In particular humans seem adapted for collaborative foraging, as even young children display numerous relevant mechanisms, from special ways of coordinating and communicating to special ways of sharing food to special forms of social evaluation. The Shared Intentionality hypothesis specifies the ontogeny of these underlying mechanisms and their consequences for both human cognition and human social life.

A-0006

EXECUTIVE CONTROL IN DIFFERENT BILINGUAL POPULATIONS: THE ROLE OF LANGUAGE SWITCHING

Evy Woumans, Evy Ceuleers, Wouter Duyck

Ghent University, Ghent, Belgium

Previous research on the cognitive advantages of bilingualism have found either evidence to support the hypothesis or evidence to reject it, using conflict tasks (for a review, see: Costa, Hernández, Costa-Faidella & Sebastián-Gallés, 2009). In the present study, we have tried to find an explanation for these divergent results. We built on the premise that monitoring constraint in conflict tasks alters performance (Costa et al., 2009). An effect of bilingualism on conflict resolution seems only present in high-monitoring conditions. We suggest that a bilingual's monitoring system is enhanced by the frequency of language switching. In other words, it is not bilingualism in itself but the act of switching that induces cognitive advantages in conflict situations. To test this hypothesis, we used productive switching fluency as a measure to assess language switching skills in Dutch/French unbalanced bilinguals, balanced bilinguals and interpreters. Results of the ANT and Simon task showed a main effect of switching proficiency on global RTs in both bilingual populations, but on different aspects of the tasks. We conclude that linguistic variables (such as switching, language use, language training), modulate the extent and character of a cognitive control advantage in a multilingual population.

A-0007

EXPLORING THE PATH TO EMPATHY

Yael Basford, Ronit Roth-Hanania

The Academic College of Tel Aviv-Yafo, Israel

This study explored empathy among infants. For decades, 'true empathy' was thought to develop once children have matured in other developmental domains. Forty infants aged 3, 6 and 9 months participated in the study. During a home visit, infants' responses to a 60-second videotape of a crying infant were recorded. Most of infants in this study showed moderate empathic reactions and no distress. Previous studies have shown that newborns react to the perceived distress of another, though based on Hoffman's (1982; 2001) theory of empathy development, they were regarded as self-centered, induced by contagion. In congruence with previous studies, we have found that the infants' receptive language skills were among the factors contributing to individual differences in empathic behavior. This study contributes to several other pioneering studies in the field of empathy development in infancy, in that it attempted to extend the previous findings of empathic reactions among infants to younger ages. Our study has found that infants were not distressed at the sight of another peer's distress; rather, they tended to show concern and to try to comprehend the situation. Thus, this study adds to a growing body of research revisiting Hoffman's theory of empathy development.

A-0008

HIGHLIGHTING THE SHAPE OF LETTER FACILITATES THE WRITING ACQUISITION: DIFFERENTIAL APPROACH

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Gennevilliers, France

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Letter knowledge is a powerful predictor of the future reading acquisition. Consequently, lower-skilled children are at risk of future difficulties in this learning. How to help these children to acquire the alphabetic principle? Our aim was to evaluate the effect of a multisensory exploration of letters with a differential approach. Five-year-old children (lower vs higher-skilled) were tested on letter-sound knowledge and on letter writing before and after training. Four matched groups which differed on the letter shape exploration were constituted: a Control group (C, no contact with letters), a Visual group (V), a Visuo-Haptic group (VH) and a Visuo-Graphomotor group (VG). A significant improvement in trained letter-sounds was identified after the V, VH and VG groups compared to the C group. With regard to letter writing, the pattern suggests that highlighting the shape could constitute a good teaching method, particularly in the case of low-skilled children.

A-0009

SUBJECTIVE FREQUENCY, IMAGEABILITY AND CONCRETENESS NORMS FOR 3,800 EUROPEAN PORTUGUESE WORDS

A. P. Soares, A. Costa, J. Machado, A. Silva, J. Oliveira, A. M. Gonçalves, M. Comesaña

Human Cognition Lab, CIPSI, School of Psychology, University of Minho, Braga, Portugal.

Words are widely used as stimuli in cognitive research. Because of their complexity, using words requires strict control of their objective and subjective properties (Soares et al., 2010). In this paper we present normative data for 3,800 European Portuguese words according to three subjective indices that are scarce in Portuguese in spite of being extensively used in the international research: subjective frequency (i.e., the estimation of how commonly a word is encountered in its written or spoken form), imageability (i.e., the ease with which a target word evokes a corresponding mental image) and concreteness (i.e., the degree to which words refer to objects, persons, places, or things that can be experienced by the senses) (Balota et al. 2001; Clark & Paivio, 2004; Paivio, Yuille, & Madigan, 1968). The ratings were obtained from a large sample of college students who were native speakers of European Portuguese. Each participant rated 100 words drawn randomly from the full set of words in the three subjective indices using a web survey procedure. Additionally, in order to assess the contribution of these variables in word recognition times, we collected lexical decision times for a subset of 1,920 words. The norms can be downloaded at <http://p-pal.di.uminho.pt/about/databases>.

A-0010

CAPTURE BY FEAR REVISITED: AN ELECTROPHYSIOLOGICAL INVESTIGATION

Mei-Ching Lien, Roberson Taylor, Eric Ruthruff

Oregon State University, Corvallis, Oregon, USA; Oregon State University, Corvallis, Oregon, USA; University of New Mexico, Albuquerque, New Mexico, USA

The present study, using a cuing paradigm, reexamined previous claims of an attentional bias toward fearful faces. Participants searched a target display for a letter in a specific color. This target display was always preceded by a non-informative cue display, which contained either colored boxes (one target color and one distractor color) or emotional faces (one fearful face and one neutral face). The cue could appear in the same location as the target (validly cued trials) or different (invalidly cued trials). To determine whether the cues captured attention, we used an electrophysiological measure of spatial attention known as the N2pc component of the event-related potential. Replicating previous studies, the target color cue produced a substantial N2pc effect and a robust cue validity effect on behavioral data (response times and proportion of errors), indicating strong attention capture by stimuli that match what participants are looking for. However, neither of these indicators of attention capture was present for the task-irrelevant fearful face cue. Our findings suggest that, in contrast to some previous research, negative stimuli (such as fearful facial expressions) do not generally have the inherent power to capture spatial attention against our will.

A-0011

SONG AND SPEECH: EXAMINING THE LINK BETWEEN SINGING TALENT AND SPEECH IMITATION ABILITY

Markus Christiner, Susanne Reiterer

Centre for Language Learning and Teaching Research, University of Vienna, Vienna, Austria

In previous research we isolated musicality and love of singing amongst the most powerful predictors for accent imitation and pronunciation talent in foreign languages. We now took a closer look at what is the common ground between singing and the ability to imitate speech. This study focused on whether good singing performance predicts successful speech imitation in foreign languages and which are the exact subcomponents of musicality and singing that contribute. 41 amateur singers were tested for their singing abilities, speech imitation skills, musical talent and working memory. Singing ability and performance was evaluated according to four parameters: quality of voice, pitch, rhythm and creativity. Speech imitation was tested with unknown language Hindi and English, evaluated by 7 Hindi and 7 English native speakers. Results indicated that singing performance is a good indicator for aptitude in speech imitation ($r=0.6$, $p<.000$), better than general musicality and far better than expertise in instrument playing. A multiple regression revealed that 65 per cent of the variance of the speech imitation scores could be explained by singing performance together with working memory and educational background. Our findings point to a close relation between singing and speech articulation behaviour through articulatory flexibility.

A-0012

JUST A GLANCE: FEAR OF CLOSENESS IN AMBIVALENT EYES

Catarina Silva⁽¹⁾⁽²⁾, Christine Deruelle⁽²⁾, David da Fonseca⁽³⁾, Andreia Santos⁽⁴⁾, Isabel Soares⁽⁵⁾, Francisco Esteves⁽¹⁾⁽⁶⁾

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5 Universidade do Minho, Escola de Psicologia, Minho, Portugal;

6 MidSweden University, Psychology, Östersund, Sweden;

Previous research suggests that individual differences in attachment style may play an important role on attention mechanisms to socio-emotional information. In this eye-tracking study, we compared preferential orienting of attention to socio-emotional scenes in individuals with different attachment style. Eye movements were recorded while participants inspected pairs of scenes (positive-neutral, negative-neutral, or neutral-neutral). Early attention orienting, the first image fixated in the pair, showed the typical threat-detection advantage to negative images in all participants independent of attachment style. The robustness of this effect remained at later processing stages, indicated by the total fixation to the images during the 3-second presentation. Conversely, viewing positive-neutral pairs elicited only an early processing advantage, yielding significant differences between the groups. All participants showed a preference of gaze towards positive images. However, individuals with a preoccupied attachment style exceptionally engaged in longer first fixation duration for neutral than for positive images. These findings suggest a dissociation between early attention orienting and later attention allocation mechanisms when processing positive stimuli, in individuals with a preoccupied attachment style only: a diverted response from positive scenes most likely related to the activation of what occupies the preoccupied people's mind – an attachment-related ambivalence.

A-0014

A STUDY ABOUT THE EFFECTS OF AFFECTIVE VALENCE ON A SOURCE-MONITORING ERROR: CRYPTOMNESIA

Aline Beaufort, Serge Brédart, Tim Perfect, Hedwige Dehon

University of Liège, Belgium ; University of Plymouth, UK

In this experimental study, the impact of affective valence on rates of involuntary plagiarism (cryptomnesia) was investigated using the Brown and Murphy (1989) three-stage paradigm. At first, dyads of participants (N=96, 48 females, mean age = 19 years) took part in an adaptation of the Alternative Uses Task. Participants were asked to generate alternately novel, non-conventional uses for three objects (one positive, one negative and one neutral). One week later, participants were instructed (1) to recall their own ideas of the previous week (Recall-Own task), (2) to generate four new ideas (Generate-New task) for each objects, (3) to assign confidence ratings to their responses, and (4) to make a Remember-Know-Guess judgment for their RO responses. Confidence ratings

were lower for plagiarized responses than for correct responses. Remember responses were significantly more often attributed to correct responses than to plagiarisms. The reverse was true for the Guess judgments. The rates of plagiarism in RO and GN tasks were of 10.67% and 15.12% respectively. A significantly lower rate of plagiarism was observed for the negative object in RO and GN task. In conclusion, this study suggests that affective valence may affect cryptomnesia.

A-0015
STROOP TASK CONFLICT CONTROL IS DEPENDENT ON THE OCCURRENCE OF INFORMATIONAL CONFLICT

Yulia Levin, Joseph Tzelgov

Ben-Gurion University of the Negev, Beer Sheva, Israel

According to the conflict-monitoring model (Botvinick et al., 2001), the conflict caused by classic Stroop stimuli (e.g., red printed in blue ink) expresses itself and is estimated by the system at the response module. However, the conflict in the response module is a direct outcome of the informational conflict, which can only be caused by incongruent stimuli. Thus, according to the architecture of the model, when the system does not experience informational conflict, but only task conflict, no modulation of control should be evident because the model does not assume any independent monitoring of the task conflict. This hypothesis was tested in the present study by excluding incongruent stimuli from the design and by manipulating the proportion of task conflicting (i.e., various congruent and neutral stimuli) versus non-conflicting stimuli (i.e., geometric shapes). No effect for proportion manipulation was obtained, indicating that task conflict is not monitored independently of informational conflict. The insensitivity of the system to variations in task conflict magnitude was also supported by the reaction time pattern observed for different stimulus types. Finally, no marker of task conflict was obtained in the analysis of the τ parameter, indicating no task conflict detection in the absence of informational conflict.

A-0016
ARE 1/2 AND 0.5 REPRESENTED IN THE SAME WAY?

Dana Ganor-Stern

Achva Academic College, Achva, Israel

Adults' processing of unit and decimal fractions was investigated using the numerical comparison task. When unit fractions were compared to integers, the pattern of distance effect found suggests that they were represented holistically on the same mental number line as integers; however, their representation was undifferentiated, as they were perceived to have the same magnitude. This was found both with simultaneous and with sequential presentation. When decimal fractions were compared to integers, the pattern of results suggests that they were also represented holistically on the same mental number line with integers, but their representation was differentiated. Possible explanations for the different patterns found for unit and decimal fractions are discussed. Moreover, compatibility between the magnitudes of the fraction components and the integer affected integer-fraction comparisons in the case of decimal fractions and unit

fractions presented simultaneously. The compatibility effect, reported often for two-digit numbers, suggests the existence of a components representation in addition to the holistic representation, and it reflects the whole number bias. Interestingly, the compatibility effect was not present when unit fractions were presented sequentially, suggesting that such presentation reduces the components representation of fractions and the whole number bias.

A-0017
ERPS TALK: ARE METAPHORS ABSTRACT OR CONCRETE?

Bálint Forgács, Megan D. Bardolph, Ben D. Amsel, Katherine A. DeLong, Marta Kutas

Central European University; University of California San Diego

Metaphorical expressions often involve words with a physical meaning ("broken heart"). This observation has led to the proposal that metaphors are understood concretely, and to claims of language being embodied or even "physical". In order to test this hypothesis, we measured event-related potentials (ERPs) to assess whether metaphorical expressions evoke a concreteness effect similarly to physical expressions, relative to abstract expressions. Participants viewed three conditions of novel adjective noun word pairs: (1) Physical, easy to experience with the senses ("printed schedule"); (2) Abstract, difficult to experience with the senses ("conditional schedule"); and (3) Metaphorical, a physical adjective with a noun yielding a figurative expression ("thin schedule"). ERPs for the nouns varied with hemispheres. Over left posterior sites the pattern was similar to the one evoked by adjectives: There was a greater negativity for Physical and Metaphorical expressions relative to Abstract ones. However, over right posterior sites Abstract and Metaphorical conditions did not differ, with the Physical condition showing a greater sustained negativity. Based on these results we propose that metaphors are processed similarly to abstract expressions in at least in some areas of the brain, even though they are constituted of physical adjectives.

A-0018
LITERACY ACQUISITION IN L1 VS. IN L2: SAME LANGUAGE BUT DIFFERENT TRAJECTORIES

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(2) BCBL - Basque Center on Cognition, Brain and Language, San Sebastian, Spain.

Research on visual word recognition has shown that lexical organization in European languages follows orthographic principles, whereas lexical organization in Semitic languages is determined by morphological features. This suggests that the transition from one language family to another should entail a shift in principles of organization of lexical space. In the present study we investigated how native speakers of Russian (an Indo-European language) learn to read in Hebrew (a Semitic language), comparing them to Hebrew speakers who learn to read their own native language. All participants were tested in a series of tasks, including simple lexical decision, naming, and cross-modal priming, that comprised of four conditions: morphologically related, semantically related, phonologically related and control.

The results suggest that learning to read Hebrew as a L1 and learning to read it as L2 are qualitatively different processes with different trajectories.

A-0019

DISSOCIATIONS BETWEEN PERCEPTION AND ACTION DEPEND ON THE RELATIVE POTENCY OF EGOCENTRIC AND ALLOCENTRIC INFORMATION

Rouwen Cañal-Bruland, Frank Voorwald, Kirsten Wielaard, John van der Kamp

MOVE Research Institute Amsterdam, Faculty of Human Movement Sciences, VU University Amsterdam, The Netherlands

We scrutinized the proposal that the visual system comprises two functionally separate but interacting systems, where the ventral stream serves 'vision for perception' and the dorsal 'vision for action' (Milner & Goodale, 1995). In three experiments, participants either performed a perception task (i.e., estimating distance) or a motor task (i.e., throwing a beanbag) towards the end location of the shaft of a large-scale Müller-Lyer illusion. Participants either stood at one end of the shaft (Exp. 1) or at a distance of 1.5m from the shaft (Exp. 2 & 3) of a configuration with one hoop (Exp. 1 & 3) or two hoops (Exp. 2) as its tails. Exp. 1 revealed an illusion effect on the perception task, but not on the motor task, providing evidence for a dissociation between perception and action. Exp. 2 showed neither the typical illusion effects nor a dissociation. Exp. 3 revealed an illusion effect on both tasks, indicating no dissociation between perception and action. Together, the presence (Exp. 1) and absence (Exp. 3) of a dissociation may indicate that the distinction between the two visual streams is not uniquely functional (i.e., perception versus action), but depends on the relative potency of egocentric and allocentric information.

A-0020

THE APPROXIMATE NUMBER SYSTEM IS NOT PREDICTIVE FOR SYMBOLIC NUMBER PROCESSING IN KINDERGARTNERS

Delphine Sasanguie, Emmy Defever, Bert Reynvoet

KU Leuven Kulak, Kortrijk, Belgium

The relation between the approximate number system (ANS) and symbolic number processing skills remains unclear. Some theories assume that children acquire the numerical meaning of symbols by mapping them onto the pre-existing ANS. Others suggest that in addition to the ANS, children also develop a separate, exact representational system for symbolic number processing. In the current study, we contribute to this debate by investigating whether the non-symbolic number processing of kindergartners is predictive for symbolic number processing. Results revealed no association between the accuracy of the kindergartners on a non-symbolic number comparison task and their performance on the symbolic comparison task six months later, suggesting that there are two distinct representational systems for the ANS and numerical symbols.

A-0021

THE SENSE OF COMMITMENT

John Michael

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The paper aims to establish the theoretical need for a minimal analogue of the concept of commitment that is applicable to young children, and to develop the notion of a sense of commitment as such a minimal analogue. The paper focuses on commitments within the context of joint action, i.e. within a context that is both fundamental and paradigmatic for human sociality in general. The paper aims to articulate the functions that commitments fulfill, and thus also the functions that a minimal analogue of commitment should be able to fulfill, as well as the demands that can be placed upon such a minimal analogue. In developing the notion of a sense of commitment as a minimal analogue, the paper focuses on emotions and action-related cues as constitutive components of the sense of commitment. Thus, it aims to conceptualize the link between commitment and emotion, and specifically to develop the concept of feeling committed as a component of the sense of commitment. Furthermore, it aims to conceptualize the link between habitual interaction patterns and commitment, and to develop the concept of acting committed as a further component of the sense of commitment.

A-0022

COUNTING ON THE INTERNAL CLOCK

Joseph Glicksohn, Aviva Berkovich-Ohana, Yair Dor-Ziderman, Abraham Goldstein

Department of Criminology, and The Leslie and Susan Gonda (Goldschmied) Multidisciplinary Brain Research Center, Bar-Ilan University, Israel

Time production (TP) with or without chronometric counting both instantiates and reflects the working of an internal clock, as originally posited by Treisman. We exploit the fact that a number of participants, who had previously participated in a (published) EEG study wherein TP was assessed, and who had employed chronometric counting then, would be coming back to the lab to participate in a second study, this time using MEG. We specifically requested that they do not employ chronometric counting this time, thus allowing us to contrast TP with and without counting. We also complement the study of TP by employing an online EEG/MEG recording during TP, and in this we follow in the footsteps of Treisman. We report a qualitative difference between TP implemented by counting and TP without counting: The first is a linear function of target duration (T), while the second is not. Furthermore, in the first mode of TP, the bilateral parieto-occipital cortex is more active than in the second. We tentatively suggest that a qualitative difference between the counting and no-counting conditions may be seen in the differential activity (counting) or not (no counting) in parieto-occipital cortex.

A-0023

IN A NOISY WORLD (SOME) FORGETTING HELPS CROSS-SITUATIONAL LEARNING

Paul Ibbotson, Diana García López, Alan J. McKane

The Open University; University of Manchester

In order that future generations can profit from the hard-won innovations of previous generations, cumulative cultural evolution needs to be underwritten by powerful learning mechanisms. With respect to language, these mechanisms need to be robust enough to acquire normative patterns of use in the face of considerable communicative indeterminacy or noise. We introduce a novel computational model that is founded on a domain-general and cognitively plausible learning mechanism designed to handle three types of noise: referential ambiguity, within-speaker variance and between-speaker variance. The model learns word meanings incrementally as probabilistic associations between words and their referents. We find (1) an optimum store-loss ratio of memory improves word learning (2) this interacts with different statistical distributions of word use and (3) the learning mechanism is robust enough to overcome between-speaker variance. We discuss the results with respect to a more psychologically plausible account of cross-situational learning.

A-0024

DON'T BE TOO STRICT WITH YOURSELF! RIGID NEGATIVE SELF-REPRESENTATION IN HEALTHY SUBJECTS MIMICS NEUROCOGNITIVE PROFILE OF DEPRESSION FOR AUTOBIOGRAPHICAL MEMORY

Marco Sperduti, Pénélope Martinelli, Sandrine Kalenzaga, Thierry Gallarda, Isabelle Amado, Marie-Odile Krebs, Catherine Oppenheim, Pascale Piolino

Centre de Psychiatrie et Neurosciences, Laboratoire Mémoire et Cognition, Paris, France.

Autobiographical memory comprises episodic and semantic representations. Depression is characterized by a shift from episodic to semantic memories retrieval (overgeneralization). This effect could be linked to reduced executive resources and could lead to a general and pervasive negative self-representation. Even in non clinical population executive function and autobiographical memory specificity are closely linked, and in turns overgeneral memories could lead to depressive responses. We made the hypothesis that healthy subjects showing a rigid negative self-image would mimic the neurocognitive profile of patients. We assessed executive functions and the self-image profile in healthy subjects, and recorded their brain activity, by means of fMRI, while they retrieved episodic autobiographical memories. We reported that a more rigid negative self-image corresponded to lower executive functions performances and less vivid memories. Moreover higher negative self-image resulted in attenuated activity in the ventrolateral prefrontal cortex and the anterior cingulate cortex that contrarily positively correlated with executive and memories performances. These regions have constantly been reported to be activated by strategic memory retrieval and consistently show functional and structural alteration in depression. We proposed that rigid negative self-image could represent a marker or a vulnerability trait of depression possibly linked to reduced executive functions.

A-0025

TASK CONFLICT VERSUS INFORMATIONAL CONFLICT IN THE STROOP EFFECT

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It has been suggested that the Stroop task reflects two conflicts — task and informational. In this study we manipulated task conflict by varying the proportion of color words versus non-letter neutrals. We also manipulated the informational conflict orthogonally by varying the proportion of congruent to incongruent trials. We replicated previous findings showing increasing the ratio of incongruent to congruent trials reduces the Stroop effect (e.g., Logan, 1980) as does the increase of color words (Tzelgov et al., 1992), but in parallel we found a negative facilitation effect as a marker of task conflict under specific conditions. A significant three-way interaction among stimulus type and the two proportion manipulations (color words vs. neutrals and congruent vs. incongruent manipulations) indicated that even though the two manipulations were independent, their effect was not additive. Our results provide direct evidence for the importance of task conflict in explaining the Stroop effect and are consistent with Botvinick et al.'s (2001) conflict monitoring model and similar models that attribute the Stroop effect to conflict arriving from the response generation layer.

Keywords: Stroop, task conflict, informational conflict, control, negative facilitation

A-0026

REPLICATION OF A SENSORY MASKING EFFECT WITH REACTIVATED MEMORY COMPONENTS (A MEMORY MASKING EFFECT)

Amandine Rey, Rémy Versace

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Masking is used in perceptual tasks in order to disrupt the processing of a target. The aim of this study was to replicate this effect by replacing the sensorial present mask by a reactivated mask in memory. The learning phase consisted of a systematic association between a mask (or a non-mask) and a sound (high-pitched or low-pitched). In the test phase, the sound was presented simultaneously with a picture representing an animal or an objet. Half of the picture had a high sensitivity to the mask and the other half had a low sensitivity. The participants were asked to categorize the pictures as accurately as possible (living vs. 'non-living'). The results showed that participants were significantly slower to categorize the pictures with a high sensitivity when pictures were presented simultaneously with the sound previously associated with the mask rather than the non-mask, whereas no difference was observed for the pictures with a low sensitivity. This study provides an argument in favor of the similarity of memory and perceptual processes. We propose that the difference between perception and memory is that, in the former, sensory properties are perceptually present, whereas, in the latter, they are absent but reactivated.

A-0028

ALTERED PRE-REFLECTIVE SENSE OF AGENCY IN AUTISM SPECTRUM DISORDERS

Tiziana Zalla, Marco Sperduti

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Autism Spectrum Disorders (ASDs) are characterized by impairments in social interaction, communication and stereotyped behavior. Recently a renewed interest for self-representation in ASDs subjects has emerged. Previous findings suggest a dissociation between impaired declarative aspects of self-representation and spared implicit processes, including the sense of agency (SoA). Nevertheless, so far only reflective SoA mechanisms have been investigated in ASDs subjects. Here, we presented two studies in which we investigated reflective and pre-reflective SoA in a group of ASDs participants. In the first study, participants played a video game in which subjects' control underwent different manipulation. Participants were asked to make judgment of agency (JoA) and judgment of performance (JoP). JoA in individuals with ASDs predominantly relied on the outcomes rather than on sensory-motor cues and was mainly based on the JoP. In a second study, we assessed intentional binding (IB), a well established implicit measure of SoA, in ASDs and control participants with typical development. We reported a significantly reduced IB in ASDs group. Overall, our results suggest that individuals with HFAs have an altered pre-reflective self-representation that could be linked with other aspect of ASDs symptomatology in the domains of social interaction and motor control.

A-0029

A COLLECTION OF EVIDENCES FOR THE EXISTENCE OF PRE-ATTENTIVE PROCESSES OF TEMPORAL ENCODING MANIFESTED IN SIMULTANEOUS LOCAL AND GLOBAL REPRESENTATION OF TIME IN THE HUMAN BRAIN

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In a series of experiments we tested for the existence of automatic pre-attentive encoding of time at the neural level. In an fMRI experiment we tested whether time is represented within category selective areas in the brain, which typically encode the shape of visual stimuli by imposing different degrees of duration's variance on visual stimuli (e.g. faces and natural-scenes) practicing a block design experiment. Using the same fMRI experimental design and manipulation, we also tested for global effects in the brain. Results indicate the existence of both local (within the FFA and PPA) and global (e.g. Cerebellum, Basal-Ganglia and Thalamus) representations of time. However, activation in the Cerebellum and Thalamus peaks relatively late with respect to the Basal-Ganglia, FFA and PPA. In an ERP experiment we tested for the early detection of temporal discrimination as well as for implicit temporal expectation in the visual modality, using the oddball paradigm. Results indicate an accurate covert estimation of durations based on implicit temporal expectation, as well as pre-attentive duration discrimination. Based on all our findings we concluded temporal estimation entails pre-attentive processes along

with the well-established attentive processes. We also conclude that time has a local and global representation which may interact.

A-0031

ENHANCED ATTENTION REVEALS SEMANTIC INTERFERENCE FROM DISTRACTOR PICTURES DURING PICTURE NAMING

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When a target picture is named in the presence of a distractor picture naming is facilitated if there is a phonological relation between the two pictures. In contrast, semantically related distractor pictures typically have no effect on naming latencies. This pattern is surprising as, on all theoretical accounts, phonological processing is preceded by semantic-conceptual processing. We investigated whether semantic effects of picture distractors are observable if sufficient attention is allocated to the distractor pictures. Attention to the pictures was manipulated by means of arrow cues pointing to the target (valid), to the distractor (invalid), or to both pictures (neutral). Responses were fastest with valid cues and slowest with invalid cues. Importantly, semantic interference was only found with invalid cues. When the cueing manipulation was replaced by a SOA-manipulation no semantic effect was found. This suggests that the interference effect was indeed caused by increased attention to distractor pictures with invalid cues, not by differences in relative timing of target and distractor processing under the different cueing conditions. Our findings emphasise the role of attention in the activation of context object names and support competitive models of lexical selection, while challenging the response exclusion hypothesis.

A-0033

CONSUMERS FAVOR 'RIGHT BRAIN' TRAINING: BRAIN-BASED PRODUCT NAMES INFLUENCE PERCEPTIONS OF INTEREST, EFFICACY, AND SCIENTIFIC RATIONALE.

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In recent years the neuromarketing of educational products has become increasingly common. However researchers have expressed concern about the misapplication of neuroscience to education marketing, fearing that consumers may be deceived into investing in apparently „brain-based“ products under the misapprehension that they will be more effective. The present study investigated whether these fears are justified. We presented 180 participants with one of four advertisements for an identical educational program, named either ‚Right Brain‘ training or ‚Right Start‘ training; the advertisements either did, or did not, include an MRI brain image in one corner. Participants were asked to read the advertisement thoroughly, and then indicate their responses to questions assessing i) their interest in the product, ii) the effectiveness of the product, and iii) the scientific rationale of the product, on 6-point Likert scales. Results indicate that ‚Right Brain‘ training was perceived as more interesting, more educationally valuable,

and scientifically stronger than an identical product named ‚Right Start‘ training. The presence of an unrelated MRI brain image enhanced the perceived scientific rationale of the product. These results confirm that researchers‘ fears are justified: by implying a strong scientific basis, „brain-based“ product names are remarkably effective in implicitly manipulating consumer opinion.

A-0034

THE DEVELOPMENT OF THE SEMANTIC NETWORK IN CHILDHOOD AND ITS DETERIORATION IN ALZHEIMER’S DISEASE: A COMPARATIVE STUDY

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According to Rubial-Alvarez et al. (2013), the comparison of cognitive functioning between children and Alzheimer’s disease patients (AD) shows an inverse evolution pattern that supports the hypothesis of retrogenesis. The purpose of our research is to analyze the retrogenesis process of the lexico-semantic network in order to better understand the conceptual organization of semantic memory. 90 children aged 5-9 and 90 patients at different stages of the Alzheimer’s disease will be tested. We elaborate a unique and original experimental paradigm adapted to these different populations. First of all, we adapted a semantic memory questionnaire by developing a computing interface. Secondly, we created a priming paradigm in order to evaluate children and AD patients on the words relations strength in their semantic memory. Many pre-tests and psycholinguistic variables analyses (verbal association, frequency, age of acquisition, conceptual strength, ...) have allowed to select 22 words (11 naturals and 11 manufactured), each of them being associated with a taxonomic and a thematic linked word. Finally, a semantic pictorial sorting test will be proposed in order to evaluate more explicitly the concepts organization. Experiments are now in progress. The semantic memory questionnaire, the priming paradigm and the first results will be presented.

A-0035

WHAT YOU LIKE IS WHAT HAS DECREASED: FEATURE-BASED PERCEPTION OF THE SCARCITY ENHANCES OBJECT VALUE

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Scarce objects attract people. This study examined whether perceiving the scarcity is based only upon object features, which have decreased, or it can be generalized to different features over the category. In our experiment, white and black cookies were used as stimuli that participants were to evaluate. In a white-decrease condition, a plate that contained 9 white and 1 black cookies was first exposed to participants. However, the experimenter subsequently exchanged it for a new plate containing 4 white and 1 black cookies; that is, five white cookies decreased in front of the participants. In a black-decrease condition, four white and 6 black cookies were initially presented, and five black cookies decreased then. After such manipulations of the scarcity, the participants rated how much they liked a white and black cookie respectively. Even though all the participants tasted the same cookies between the

conditions, the likeability was rated higher for a cookie whose color was same as the decreased cookies than for that of different color; i.e. object value was selectively enhanced by what had decreased in each condition. These results suggest that the human cognitive system performs elaborate, yet rather finical, discrimination of object features when perceiving the scarcity.

A-0036

AUTOMATIC PROCESSING OF TEMPORAL ORDER OF MAGNITUDE

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It was found that magnitude comparisons are faster when the numbers are presented in ascending compared to descending temporal order (e.g., Ben-Meir, Ganor-Stern, & Tzelgov, 2012; Müller & Schwarz, 2008). The same pattern was found for comparisons of both numerical and physical magnitudes, thus suggesting that this advantage for ascending temporal order of magnitude is a general property of our magnitude system. But, is temporal order of magnitude processed automatically? In order to explore this possibility, we used a same/different task, which is a cardinal and not an ordinal task, and thus does not trigger the processing of temporal order of magnitude. In this task participants judged whether the sequentially presented numbers were identical in numerical value in the numerical task or identical in physical size in the physical task. An advantage for ascending compared to descending temporal order of magnitude was found for both tasks. However, it was found only when participants pressed the right key for „different“ response, and not when they pressed the left key for „different“ response. This suggests that under specific conditions, temporal order can be shown to be processed automatically.

A-0037

IMPACT OF A TRAINING ON NUMERICAL ABILITIES IN LOW LANGUAGE-SKILLED CHILDREN.

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Our project aims at a better understanding of the relationships between language development and numerical abilities. Recent data show indeed that children with low language skills develop difficulties in arithmetic. More precisely, we will investigate the links between language abilities and the knowledge of the counting sequence, the counting skills, the memory for elementary arithmetic facts, phonology, lexicon, and morphosyntax. In order to do so, we have assessed language and numerical skills in 200 children in the second year of primary school to identify a small group of children with low language skills. In a later stage, we will develop a specific training aiming at enhancing arithmetic skills for those children and evaluate its effectiveness.

Our hypothesis is that delays in language development can lead to arithmetic impairments through a causal chain of difficulties: language difficulties could hinder the

acquisition of the counting sequence, which could affect the acquisition of counting, then impacting on the ability to store arithmetic facts and, as a consequence, the ability to make exact calculations. We will test this hypothesis by developing a training study.

A-0038

THE CONTRIBUTION OF READING DIRECTION TO THE ASSUMED LIGHT SOURCE: EVIDENCE FROM ENGLISH AND HEBREW READERS

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Light source assumptions, such as the assumption that there is one light source shining from above, enable observers to perceive depth in two dimensional shaded objects. Recent research has demonstrated that the assumed light source direction is left of vertical for most observers, although the reason for this remains unknown. We investigated the left lighting bias in two experiments with left and right handed English and Hebrew readers. Participants performed a shape perception task with a novel stimulus consisting of six linked hexagons forming a hexagon at their centre and lit from one side. Experiment one confirmed an above left lighting bias in first language English participants, with no effect of handedness. Experiment two found that first language Hebrew participants have a significantly reduced left lighting bias, also with no effect of handedness. We conclude that handedness does not contribute to the lighting bias; however the bias is affected by scanning direction, which in turn is affected by reading direction. The finding that first language Hebrew participants showed a small left bias, rather than an opposite bias to the right, suggests that scanning direction may not be the sole factor influencing the light bias.

A-0039

RAISE YOUR HANDS IN THE AIR AND SAY YEAH: EVIDENCE FOR A SOCIAL HAND-POSTURE EFFECT

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Previous research has shown that one's own hand position affects spatial attention in a covert orienting of attention paradigm. The present study examined if and how hand position affects spatial attention in a social Simon task. A Simon task was distributed across two individuals, each person was taking care of only one of two responses with varying hand positions. An Individual go/nogo and a standard (two-choice) Simon task were also used as control tasks. The size of the Simon effect was modulated by hand position in the social Simon task, but not in the Individual go/nogo nor in the standard Simon task. A second experiment tested if the modulatory effect of hand position on the social Simon effect is related to one's own or the other person's hand position. The findings of both experiments are discussed in relation to different spatial attention mechanisms (prioritization of space and attentional inhibition) and their relevance for joint action.

A-0041

AGENCY AND OBEDIENCE TO AUTHORITY: AN EMPIRICAL EFFORT ON THE VALIDITY OF THE AGENTIC STATE THEORY

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In an attempt to explain his findings on obedience to authority, Stanley Milgram (1974) posited his agentic state theory. According to this theory, an individual under the influence of a powerful authority figure may lose his/her sense of autonomy, making him/her more likely to obey. In an attempt to shed more light on the processes behind obedience to authority, and specifically the agentic shift, we conducted a number of studies in which we measured and manipulated the sense of agency. Using both explicit and implicit agency paradigms, we investigated agency levels after obedience, in the presence of authority related cues, and whether repeatedly experiencing a low sense of agency may lead to a higher susceptibility to persuasion. Results showed that while obedience lowered the sense of agency, the presence of authority related cues actually increased experienced agency. Finally, results also showed that participants that have repeatedly experienced lower levels of agency were more likely to be influenced by others.

A-0042

THE RELATIVITY OF SELF AND OTHER: EVIDENCE FROM THE SOCIAL SIMON TASK

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Western societies take it for granted that people own some sort of "self", a concept that refers to the phenomenal and social identity of a person over time. Eastern cultures are often more skeptical; e.g., Buddhism considers the self as superfluous and seeks to overcome it through meditation. This suggests that what we consider "self" and "other" are cognitive constructs that are open for modification. We report findings from several studies that indeed provide evidence that one's distinction between self and other (as assessed by the Social Simon effect) depends on dynamic psychological factors, such as (1) one's religious belief; (2) whether one's attention is drawn to either personal interdependence (e.g., by having to circle all relational pronouns in a text, such as "we", "our", or "us") or independence (by having to circle pronouns such as "I", "my", or "me"); and (3) whether one's current cognitive control state supports divergent thinking (induced by the Alternate Uses Task) or convergent thinking (induced by the Remote Association Task). Being a Buddhist, attending to interdependence, and engaging in divergent thinking lead to a stronger Social Simon effect, suggesting more pronounced self-other integration.

A-0043

EFFECTS OF EMOTIONAL INTELLIGENCE ON INHIBITING RETALIATION FOR OSTRACISM

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Emotional intelligence plays an important role in coordinating social interaction. The interpersonal consequences of retaliation are generally destructive in that retaliation can escalate conflict and lead to long-lasting reciprocal chains of retaliatory and counter retaliatory behaviors. This study investigated the effects of emotional intelligence on inhibiting retaliation for ostracism by using an experimental paradigm. Seventy-six university students (44 men and 32 women) played an online ball-tossing game called Cyberball with three other players, who were in fact virtual and controlled by the experimenters. In the first session, each participant and another player were either ostracized or included by the other two players. In the second session, the participant had to decide whether or not to ostracize the other two players, who were the ostracism offenders in the previous ostracism condition, by throwing back the ball to the other player. The results showed that those who have higher ability in regulating emotions in the self, one of the subscales of emotional intelligence, could better inhibit retaliation for ostracism. This finding suggests that emotionally intelligent people, who are better able to regulate their own emotional responses, can inhibit inappropriate emotional behaviors in interpersonal situations for coordinating social interaction.

A-0044

COMPETITOR RULE ACTIVATION: EVIDENCE FROM TASK SWITCHING

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A major challenge in task switching is overcoming the interference from the formerly relevant but now irrelevant task set (Allport, Styles, & Hsieh, 1994). This interference may be due to a carryover of previously irrelevant rule(s) inhibition or previously relevant rule priming. Whereas the carryover of inhibition has been unequivocally supported behaviorally, direct behavioral evidence for rule priming is yet to be established. In two experiments and a re-analysis of two published experiments, we show that a formerly relevant rule incurs more interference than a formerly irrelevant rule when these rules generate response competition, thus showing competitor rule priming (CRP).

A-0045

PROBLEM SOLVING AND WORKING MEMORY UPDATING DIFFICULTIES IN A GROUP OF POOR COMPREHENDERS

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Reading comprehension seems related with problem-solving and working memory updating. However, the relationship between these three components has never

been examined in a single study, neither in general nor in particular with reference to the case of children with reading comprehension difficulties. The aim of the present project was twofold. First, we investigated whether good comprehenders had a better performance at an updating task as well as a problem solving task respect to poor comprehenders, matched for decoding abilities.

Secondly, we evaluated whether an eventual difference in problem-solving between poor and good comprehenders would be due to a difference in an underlying common process (working memory updating) or would be present even when the contribution of updating was controlled for. Problem-solving abilities, text comprehension, and working memory updating were investigated in children with a specific difficulty at comprehending written texts (poor comprehenders) and control children matched for gender, age, schooling, and reading decoding ability. Poor comprehenders were less competent not only in the tasks that required a good text comprehension but also in problem-solving and updating tasks. However, the updating difficulty was partly domain specific and the difference in problem solving remained also when the contribution of updating was partialled-out.

A-0046

INTENTIONAL BINDING FOR TWO EFFECT STIMULI?

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When an action produces an effect, the effect is perceived earlier in time than a stimulus presented unrelated to an action. Despite lots of studies on this intentional binding (IB) effect, its underlying mechanisms and its constraints are still not fully understood.

In this study we assessed IB when actions were followed by two consecutive effects. In one condition, participants were led to believe that their actions produced both effects. In another condition, participants believed to cause only the first effect stimulus. In both conditions, we observed IB for the first effect stimulus, while time judgments for the second stimulus were only marginally biased, irrespective of whether participants believed to have caused this second effect or not. These results suggest that events occurring later in unfolding action effect sequences may not be bound to actions. Results are discussed with respect to current accounts of intentional binding.

A-0047

COOPERATION OR COMPETITION OF THE TWO HEMISPHERES IN PROCESSING CHARACTERS PRESENTED AT VERTICAL MIDLINE

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Little is known about how the hemispheres interact in processing of stimuli presented at vertical midline. Processing might be mutually independent or cooperative. Here we measured target identification and visually evoked EEG potentials while stimulus streams containing

two targets, T1 and T2, were either presented at vertical midline above and below fixation, or laterally, left and right. With left and right streams, potentials evoked by filler stimuli and by T2 were earlier at the right than the left visual cortex, and T2 was better identified left than right, confirming earlier results and suggesting better capabilities of the right hemisphere in this task. With streams above and below fixation, EEG potentials evoked by filler stimuli and by T2 were likewise earlier at the right than the left hemisphere, and T2 was generally identified as well as, but not better than left T2. These results suggest right-hemisphere preference for this task even with stimuli at vertical midline, and no added value through hemispheric cooperation. Lacking asymmetry for T1 amidst asymmetries for filler stimuli and for T2 might indicate alternating access of the hemispheres to midline stimuli as one means of hemispheric division of labor.

A-0048
EFFECTS OF VERBATIM VS. GIST RETRIEVAL GOALS ACROSS REPEATED MEMORY TESTS

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People are exposed to numerous episodes in everyday life and repeatedly recollect them in different social contexts, motivated by different goals. We investigated whether differences in the abstraction level of retrieval at one point in time, due to different memory goals, affect memory performance at a later time as a function of the consistency or discrepancy of the memory goals on these two occasions. Participants were presented with short stories and were tested on half of them by providing either a gist summary or a verbatim reproduction. Seventy-two hours later, they were tested on all the stories, summarizing half of them and reproducing the other half. Both interpolated summary and interpolated reproduction yielded significant testing effects for both final summaries and final reproductions. For final reproductions, the testing effect was larger following interpolated reproduction than following interpolated summary, whether memory performance was evaluated in terms of memory quantity or in terms of global correspondence. Surprisingly, these differences derived from beneficial effects of interpolated summary on the previously untested items. Interestingly, for the previously tested items, interpolated summary was equally beneficial for the subsequent reproduction of story details as interpolated reproduction. Theoretical and practical implications of the findings will be discussed.

A-0049
TWO SEPARATE PROCESSES AFFECT THE DEVELOPMENT OF THE MENTAL NUMBER LINE

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Numerical comparisons are frequently used as a means to tap into the mental representations of numerical magnitudes. Two processes are apparently involved in numerical comparisons: the analog comparison process, which produces the distance effect, and the processing of the end stimuli (i.e., the stimuli representing the smallest

and the largest magnitudes of a set), which results in the end effect. In automatic numerical processing, when tested using a physical comparison task, the end effect is reflected in an enlarged size congruency effect that is insensitive to intra-pair numerical distance. Evidence of the two processes was shown for adults; however, there are no reports of the two processes in children. The current study tested these two processes in intentional and automatic numerical judgments of kindergartners aged 5- to 6-years old. The number 1 was found to have a special status as the lower end of the set, as implied by both intentional and automatic end effects. The distance effect was found in intentional comparisons of numbers but was absent in automatic processing. These results imply that the two phenomena develop at a different pace and have implications for our understanding of the emergence of numerical knowledge in children.

A-0050
PREFERENTIAL ACCESS OF THREAT TO WORKING MEMORY IN ANXIETY

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Anxiety is characterized by difficulties in regulating processing of threat, including threat-related information that is no longer present or not relevant to goal-directed behavior. One possible mechanism underlying these problems may be deficits in gating task-irrelevant threat cues from working memory, thus allowing such information to interfere with ongoing behavior and cognition. Here we present data from two recent studies that examined neural markers of attentional filtering and the subsequent storage of threat in working memory using a face adaption of the change detection task. In Study 1, using event-related potentials, we found that on average, threat-distracters were difficult to filter as indexed by increased contralateral delay activity during the delay interval of the working memory task. Furthermore, this effect was exaggerated in individuals high in trait anxiety. In Study 2, we used a variant of the same task in an fMRI setting and found that activation in the dorsal medial prefrontal cortex, middle frontal gyrus, and visual cortex was enhanced for threat-related distracters relative to neutral distracters or targets. Collectively, these studies help clarify the neurocognitive mechanisms instantiating filtering of and unnecessary storage of threat in working memory that may promote worry and intrusive memories in anxiety.

A-0051
THREAT IN CONTEXT: CURRENT GOALS SHAPE EARLY ATTENTION TO THREAT

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Numerous studies have found attentional bias towards signals of threat. The attentional prioritization of threat is assumed to reflect an adaptive mechanism that serves survival. In line with this reasoning, many accounts characterize attention to threat as hard-wired, unconditional, and automatic. In contrast, the present talk suggests that early attention to threat depends on people's current goal. Specifically, I propose that threatening information will attract

attention when it is relevant to people's current goal but not when it is goal-irrelevant or when it interferes with this goal. In order to test this hypothesis, I combined visual cueing tasks with a separate task that induced a temporary goal. In several experiments, I found that attention was oriented to neutral but goal-relevant stimuli when these stimuli were simultaneously presented with threatening information in the visual cueing tasks. This finding was replicated in a sample of highly trait anxious participants and with signals of imminent threat. Importantly, threatening events attracted attention when attention to threat facilitated achievement of the current goal (e.g., reaching safety). These findings suggest that early attentional processes serve the pursuit of the current goal.

A-0052

FROM TARRAGONA TO PENNSYLVANIA: COLLABORATIONS ON BILINGUAL LANGUAGE PROCESSING

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Rosa Sanchez-Casas was a cherished friend and collaborator. She visited the Center for Language Science at Penn State on a sabbatical in the Spring, 2007. Her time with us led to many wonderful studies of lexical and sentence processing in bilinguals, collaborative projects at Penn State and the University of Pittsburgh, and exchanges of students across the ocean. In 2011, Rosa and her group in Tarragona became a partner with us on a PIRE project (Partnerships in International Research and Education) funded by the US National Science Foundation. In this talk we and our students honor her memory by sharing some of the research on which we have collaborated.

A-0053

THE INFLUENCE OF AWARENESS ON PERCEPTUAL SEQUENCE LEARNING

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In the current research, we examined the effect of explicit knowledge on perceptual sequence learning. Participants were required to react to the colour of a target, presented among two distractors. The mapping of the colours onto the response keys changed on every trial, so that a deterministic perceptual sequence could be inserted on the colour of the target while motor responses changed randomly. In the implicit condition, participants were not informed about the sequenced nature of the target colour. In the explicit condition, on the other hand, participants were informed that the colour of the target was sequenced and were instructed to intentionally search for this sequence. Our results indicated that only participants who showed awareness of the sequenced nature of the target in a post experimental assessment learned the colour sequence, irrespective of whether these participants belonged to the implicit or the explicit condition. Participants who remained unaware of the sequence showed no perceptual sequence learning. These results suggest that perceptual sequence learning depends on sequence awareness.

A-0054

COGNITIVE DETERMINANTS OF FREEZING OF GAIT IN PARKINSON'S DISEASE: AUTOMATICITY AND CONTROL

Jochen Vandebossche, Natacha Deroost, Eric Soetens, Daphné Coomans, Eric Kerckhofs

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Recent studies emphasize a key role of controlled operations, such as set-shifting and inhibition, in the occurrence of freezing of gait (FOG) in Parkinson's disease (PD). However, FOG can also be characterized as a de-automatization disorder, showing impairments in both the execution and acquisition of automaticity. The observed deficits in automaticity and executive functioning indicate that both processes are malfunctioning in freezers. Therefore, to explain FOG from a cognitive-based perspective, we present a model describing the pathways involved in automatic and controlled processes prior to a FOG episode. Crucially, we focus on disturbances in automaticity and control, regulated by the frontostriatal circuitry. In complex situations, non-freezing PD patients may compensate for deficits in automaticity by switching to increased cognitive control. However, as both automatic and controlled processes are more severely impaired in freezers, this hampers cognitive compensation in FOG, resulting in a potential breakdown.

A-0055

HOW SOCIAL IS THE JOINT FLANKER EFFECT? Thomas Dolk, Bernhard Hommel, Wolfgang Prinz, Roman Liepelt

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Recent research suggests that joint action can lead to the co-representation of one's own and other's actions and tasks. Evidence for this view comes from tasks including automatic Stimulus-Response (joint go-nogo Simon), symbolic S-R (joint go-nogo SNARC) and arbitrary S-R links (joint go-nogo Flanker). While the mechanisms on tasks with automatic S-R links are now widely discussed, much less is known about the mechanisms underlying the joint Flanker effect. Here, we manipulated the social nature of alternative action events implemented in the joint go-nogo Flanker task to investigate whether the resulting S-R compatibility effect is based on task co-representation. Experiment 1 provided evidence for a go-nogo Flanker effect when response alternatives were socially produced (by a human co-actor). In Experiment 2 we found evidence for a go-nogo Flanker effect when a non-social inanimate object produced alternative action events. These findings show that the joint go-nogo Flanker effect can be produced in a non-social setting not needing the assumption of task co-representation.

A-0056

CONSOLIDATION-DEPENDENT SEMANTIC INFLUENCE ON WORD LEARNING IN THE BRAIN
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Learning a new spoken word requires discrimination between a novel sequence of sounds and similar known words. Word learning can be bolstered by semantic information, but the semantic influence on learning phonological forms specifically remains unclear. Whilst research on rapid word learning in adults further suggests phonological form learning can occur within a single session, extant data also support a role for offline consolidation in novel word learning. We thus investigated whether provision of semantic information facilitated the acquisition of phonological forms, and whether this learning enhancement was modulated by a period of overnight consolidation. Participants learnt novel pseudowords either consistently associated with a visual referent, or with no consistent meaning. An auditory oddball task then tested discrimination of these newly-learned phonological forms from known words. The mismatch negativity (MMN), a measure of auditory discrimination, was not elicited by either type of newly-learned pseudoword at the end of exposure on the first day. When participants returned to the lab after a period of overnight consolidation, the meaning-associated words elicited a MMN; the non-associated words remained unchanged. We suggest that semantic exposure facilitates the development of phonological representations, but that this process requires a period of offline consolidation.

A-0057

DERANGEMENT OF CONFLICT ADAPTATION WITH EMOTIONAL STIMULI IN CHILDREN WITH ADHD.

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Cognitive and emotional disturbances mostly co-occur in children with ADHD. It has been suggested that disturbed executive functioning may be caused by emotional dysregulation. We investigated the influence of emotional stimuli on executive functioning using a serial congruency task with emotional stimuli. Conflict detection was assessed by means of the congruency effect, and conflict adaptation by means of congruency compensation after incongruent trials. Forty-three children, aged between 8 and 12, of which 21 were diagnosed with ADHD, participated in three serial reaction time tasks in a counterbalanced order. Participants reacted with a left or right response button to yellow or purple colored smileys, appearing left or right from fixation. All children generally showed congruency effects, with faster reactions to congruent as compared to incongruent trials. When smileys were neutral, children also showed conflict adaptation, namely no congruency when the preceding trial was incongruent. With emotional smileys (happy or sad) and when emotion was relevant, ADHD-children showed significantly less conflict adaptation with sad faces than controls. When color was relevant and emotion irrelevant, neither controls nor ADHD children displayed the expected congruency pattern. These data indicate a strong interaction between emotion processing and derangement of executive functions in ADHD children.

A-0058

PRAGMATICS AND SOCIAL COGNITION – A DEVELOPMENTAL APPROACH
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The lecture stems from an empirical study investigating the social-cognitive background of the different aspects of pragmatic competence (metaphor-, humor-, irony comprehension and infringement of maxims) and their relationship to Theory of Mind (ToM) skills where interpretation is seen as meaning construction at a representational level, a result of an encounter of different minds (Alberti 2011). The study is based on two ToM tests: a verbal, first- and second order test (Wimmer and Perner 1983) and a novel non-verbal eyes-test we developed (Schnell 2012). We compare non-verbal and verbal ToM test results with performance in both verbal and non verbal tasks of pragmatic competence, to see if there is a verbal performance limitation as hypothesized by some researchers in cognitive development (Astington and Jenkins 1999). Our results suggest that ToM skills and pragmatic competence do correlate, and verbal ToM tasks prove to be more predictive in forecasting pragmatic abilities. Furthermore, the cognitive mechanisms responsible for humor and irony processing are different. Children were more successful in irony tasks than in humor tasks, suggesting that they rely on different heuristics, possibly on a short-cut strategy in irony comprehension, and make use of ToM skills only when simpler heuristics do not suffice.

A-0059

SIZE MATTERS! BUT WHICH SIZE?

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When visiting the supermarket, we usually search for the shorter line. How do we make these estimations? Do we estimate based on numerosity or area, density or other continuous properties? We approached this question using different methodologies - behavioral, imaging and evolutionary computation. Behavioral and imaging studies revealed discrimination between continuous magnitudes is faster and more accurate than between discrete magnitudes. Moreover, both discrimination tasks activated similar parietal areas. Similarly, in evolutionary computation simulations, we found that artificial neural networks (ANNs) that excelled in size perception presented a significant advantage in evolving the ability to count, over those that evolved this ability from scratch. In addition, ANNs trained to perceive size of continuous stimuli presented better counting skills than ANNs trained with discrete stimuli. These findings converge to one main suggestion; the ability to estimate numerosity was developed based on a more primary system that discriminates continuous properties, and involves the same brain regions used in estimation of discrete magnitudes. Moreover, it seems the brain uses holistic processing as a default strategy when comparing magnitudes. We suggest that studying the contribution of continuous properties to the comparative judgment process can shed light on normal and impaired numerical development.

A-0060

LONG TERM STABILITY OF THE FRENCH WISC-IV INDEX SCORES: INTELLECTUAL STRENGTHS AND WEAKNESSES

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The Wechsler Intelligence Scale for Children-four edition (WISC-IV) is frequently used to assess a child's overall intellectual ability. The clinical interpretation of the WISC-IV is currently based on a Full Scale Intelligence Quotient and 4 Index standard scores (Verbal Comprehension: VCI; Perceptual Reasoning: PRI; Processing Speed: PSI; and Working Memory: WMI). The analysis of these Index scores allows the practitioners to develop hypotheses regarding normative and personal strengths and weaknesses. The goal of this study was to explore the long-term stability of personal strengths and personal weaknesses. The sample consisted of 96 non-clinical French-speaking Swiss children aged between 8 and 12 years (mean age = 9.92; SD = 1.34). Children were tested twice with the WISC-IV in an average test-retest interval of 2.33 years.

In order to determine personal strengths/weaknesses, we compute the mean of the child's index standard scores. Then, the mean of all index standard scores was subtracted from each index standard score. Results indicated that on both assessments, 51.9%, 37.5%, 58.6% and 67.6% of children demonstrated same interpretable cognitive strength or weakness for VCI, PRI, PSI, and WMI, respectively.

In sum, results suggest that personal strengths/weaknesses interpreted with the WISC-IV Index scores aren't stable in long term.

A-0061

LEARNING AND CONSOLIDATION OF NEW VOCABULARY IN AUTISM SPECTRUM DISORDER

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Children can acquire new words rapidly; however, the integration of novel and existing knowledge (measured by engagement in lexical competition) requires a consolidation period that is associated with sleep. Vocabulary development in autism spectrum disorder (ASD) is characterized by rich heterogeneity that is not well accounted for by current theories. Children with ASD also show elevated rates of sleep disturbance. However, we do not know whether individual differences in language learning are associated with aberrant patterns of consolidation. Here, we examined how new words are consolidated and integrated with existing knowledge over time. Children with ASD and typically develop (TD) peers showed similar improvements in recognition and recall of novel words (e.g., biscial) 24-hours after training. However, striking group differences emerged for lexical integration: TD children showed competition for exiting words (e.g., biscuit) after 24-hours (suggesting that the new words had been integrated with existing knowledge) but children with ASD showed immediate competition effects

that diminished after 24-hours. For verbally able children with ASD, these results suggest strengths in initial learning and consolidation of explicit memory but impairments in lexical integration. The results are discussed in relation to a dual-memory systems account.

A-0062

DEDUCTIVE REASONING AND LEARNING

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We report a research on correlations between level of fluid intelligence (measured by Raven's Advanced Progressive Matrices test) and fluencies in two kinds of deductions: simple (operationalized by means of syllogistic reasoning tasks and measured by Deductive Reasoning test) and difficult ones (operationalized by means of reasoning involving questions as one of the premises and the conclusion, and measured by Erotetic Reasoning test; both reasoning tests were developed by the authors). We observed that although participants of higher ability (with respect to fluid intelligence) performed better than participants of lower ability in both kinds of deductive tasks, those who undergone extensive training in formal logic obtained significantly higher results than the rest of this group in tasks involving difficult deductions. We conclude on this basis that fluency in difficult deductions, while related to fluid intelligence, depends also on subjects' experience and that this does not hold in case of simple deductions. We show also that these findings fit well into Competence ← - → Procedural processing model of deductive reasoning by Ricco and Overton.

A-0063

ON THE LENGTH EFFECT IN PICTURE-NONWORD INTERFERENCE

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Much is known about the effect on picture naming of an irrelevant word superimposed upon the picture (picture-word interference), but little is known about what happens when the superimposed irrelevant letter string is a pronounceable nonword (picture-nonword interference); this is the paradigm we used in our two experiments.

Experiment 1 showed a nonword distractor length effect. Pictures-naming latencies were faster for short distractors (4.5 phonemes on average) than for long ones (7.5 phonemes on average).

Because in Experiment 1 the long distractors had both more phonemes and more syllables than the short distractors, we carried out a second experiment which independently varied syllabic length and phonemic length of the nonword distractors, so as to determine whether the distractor length effect is driven by syllabic length or phonemic length.

The results strongly suggest that there is a competition between the target and distractors phonemes at the phoneme level. We will discuss what these results tell us about models of reading and speech production reporting simulations of the results using a version of the DRC model that has a form of semantic system.

A-0066

ANOTHER SPARC WHILE HUNTING THE SNARC ON SHORT-TERM MEMORY LANDS: WHAT IF ORDER IN VERBAL SHORT-TERM MEMORY WAS CODED SPATIALLY?

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Lists of 5 consonants were presented sequentially in the center of the screen to 60 participants, at a presentation rate of 5s per item (experiment 1) or 1s per item (experiment 2). After each list, a consonant was displayed, participants had to judge whether or not the consonant was in the list just presented by pressing one of two response keys. Unlike classic probe recognition tasks (Sternberg, 1966), the left-/right-hand key assignment was varied: the answer "yes" (as the answer "no") was assigned for half the trials to one hand and for the other half to the other hand. Results showed a Positional SNARC (Spatial-Numerical Associated Response Code) effect coined SPARC (Spatial-Positional Associated Response Code): the letters presented in the first positions were preferentially associated with the left hand responses (faster responses and lower error rates), while the letters presented in the last positions were preferentially associated with the right hand responses. This result is compatible with the idea that participants spatially reorganized each list creating a left to right mental line representation based on the order the items entered in Short-Term Memory (STM). This is compatible with the idea that order in verbal STM could be spatially coded.

A-0067

AGEING AND FEATURE BINDING IN VISUAL WORKING MEMORY: THE ROLE OF PRESENTATION TIME.

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Our ability to hold information in visual working memory (VWM) declines considerably across the adult lifespan (Johnson et al., 2010). It has been proposed that increasing age may impair the ability to bind the different features of an object (e.g. shape and colour) into a coherent object-file (Brockmole et al., 2008). The majority of studies addressing this suggestion have shown that VWM for combinations is no more age-sensitive than VWM for individual features. However, one recent study has suggested that older adults struggle to bind features in VWM when given more time to study memory objects, whereas following shorter presentation this ability is preserved (Brown & Brockmole, 2010). The present study assessed the effect of presentation time, within-subjects, on older (aged 67-78) and younger (aged 18-25) adults' ability to bind shape and colour of different objects for a change detection task. We replicate the common finding that older adults have a markedly lower VWM capacity relative to younger adults. However, this age effect was no more pronounced for bindings compared to individual features, regardless of whether objects were presented for a long or short study period. We conclude that age does not selectively impair feature binding in VWM.

A-0068

DISCRETE VERSUS CONTINUOUS QUANTITIES IN NON-PRIMATE SPECIES: THE CASE OF FISH

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Research on infants, apes, monkeys and prosimians has demonstrated that rudimentary numerical abilities pre-date the evolution of language. Such abilities are preserved when non-numerical continuous quantities (i.e. cumulative surface area, density, and overall space) are controlled for, suggesting the existence of a true numerical discrimination based on discrete information. Yet there is controversy as to whether more distant-related species to humans (such as non-primate species) represent numbers mentally or rather base their judgments on continuous quantities. Recently fish become a new model to investigate numerical abilities in non-primate species. Free choice tests and training procedures demonstrated the existence of quantity abilities in several fish species. In particular, it was shown that mosquitofish can use both continuous quantities (cumulative surface area and the overall space occupied by the stimuli) and numerical information. When trained to use either information (only discrete or only continuous quantities), mosquitofish learning rate does not differ between the two conditions, suggesting that processing numerical information is not more cognitively demanding than processing continuous information. Multiple cues (the combination of discrete and continuous quantities) represent the easiest condition. This aligns with literature on primates not supporting the idea of a cognitive discontinuity between primate and non-primate species.

A-0069

BRIDGING THE GAP BETWEEN NUMERICAL COGNITION TASKS USED IN DIFFERENT AGE GROUPS: THE CHANGE DETECTION TASK

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In order to use the acuity of the ANS as a screening instrument to detect future math problems, it is important to model ANS acuity over development. To date, the trajectory of ANS acuity may not be accurately described, because different tasks were used for different age groups. In the current study, we present a paradigm for adults that shares more characteristics with the tasks that are used for infants. Participants perceived two streams of images, one remaining constant in magnitude and a second stream alternating between two different magnitudes. They were instructed to indicate the changing stream. We obtained a typical ratio effect in accuracy. Discrimination performance depended on the ratio between the presented numerosities. Further, we contrasted the paradigm with the typical tasks used for adults (i.e., comparison and same-different), making use of the same ratios and stimuli. The results indicated significant differences in performance between all tasks, except between the change detection and the same-different task. Further, there was no significant relationship between performances on the three tasks. These results suggest that a task that is more similar to infant tasks is not comparable to the most frequently used task in adults (i.e., comparison).

A-0071

QUANTIFYING THE RELIANCE ON SUBLEXICAL STRATEGIES IN GERMAN AND ENGLISH READING

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The size of the sublexical units employed during nonword reading has been under debate in the past decades of reading research. Nonwords may be read either via small units (Grapheme-Phoneme Correspondences, GPCs), or large units (body-rime correspondences). GPC rules differ in terms of their dependence on the context surrounding a grapheme: a rule like "a" → /æ/ ("a" is pronounced as in "cat") is an example of a non-context-sensitive GPC rule; "[w]a" → /o/ (an "a" is pronounced as in "swan" when preceded by a "w") is a context-sensitive GPC rule. We tested adult readers in a nonword reading task, designed to estimate the reliance on each strategy. In Experiment 1, we used vowel length in German show that all three sublexical strategies are used during nonword reading. We then quantified the degree to which each strategy is used. In Experiment 2 we present similar findings with English nonwords. These results showed greater reliance on context-sensitive rules than German readers, and less reliance on non-context-sensitive GPCs. In Experiment 3, we compared adult readers with varying proficiency in German, by comparing Experiment 1 to data from a non-university sample. Implications for cross-linguistic theories of reading and computational models are discussed.

A-0072

EFFECT OF READING ACQUISITION ON WORKING MEMORY DEVELOPMENT

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Many studies have demonstrated a strong association between working memory (WM) capacities and early reading abilities, most of them highlighting the role of the former on the latter. However, studies comparing illiterate and ex-illiterate adults on WM tasks suggest that literacy acquisition has a beneficial impact on memory processes and/or representations. Hence, the aim of this study was to examine, in beginning readers, the potential effect of reading acquisition on WM capacities growth. Using a cutoff design, we compared performance on WM tasks of children (i) of similar ages but either still preliterate or already decoders (3rd kindergarteners vs. 1st graders born at the beginning vs. end of the year) and (ii) of different ages but similar reading levels (1st graders born at the beginning vs. end of the year, both decoders). Groups were matched on critical control variables (IQ, SES, family literacy environment) according to background information gathered from questionnaires and assessments. If the practice of grapheme-to-phoneme conversion strengthens WM, we may predict better performance among beginning readers than among preliterate children of the same age. Results will be presented at the conference.

A-0073

ITEM-SPECIFIC PROPORTION CONGRUENCY: DISSOCIATING CONTINGENCY AND CONFLICT ADAPTATION

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A new method of directly dissociating between contingencies and proportion congruency (conflict adaptation) in the ISPC paradigm is presented. This was done with three different types of incongruent words that allow a comparison of: (a) high versus low contingency while keeping proportion congruency constant, and (b) high versus low proportion congruency while keeping contingency constant. Results demonstrated a significant contingency effect, but no effect of proportion congruence. It was further shown that the proportion congruency associated with the colour does not matter, either. Thus, the results provide further support for the notion that ISPC effects are not due to conflict adaptation, but instead to contingency learning.

A-0074

VISUAL-PROCESSING AND ATTENTION IN GENERAL-GIFTED AND EXCELLING-IN-MATHEMATICS ADOLESCENTS

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Little empirical data is available concerning the cognitive abilities of gifted individuals in general and especially those who excel in mathematics. This paper presents a part of large research aimed multidimensional examination of mathematical giftedness. This study examined visual-processing and attention abilities of 10th -12th grades students divided into four groups as follows: Gifted students who excel in mathematics (G-EM), gifted students who do not excel in mathematics (G-NEM), non-gifted students who excel in mathematics (NG-EM) and regular students (NG-NEM). 170 students who comprised these groups performed a battery of cognitive tasks: visual-spatial memory, speed of processing, visual-perception and attention. The results support the notion that the differences between the groups are task depended. General giftedness (G factor) was related to attention and visual-perception and Excellence in mathematics (EM factor) was associated with high visual-spatial memory. In addition, an interaction between G and EM factors was found with regard to speed of processing tasks. It seems that G-EM students can be characterized by superior performance especially on speed of processing tasks. Our findings add to the theoretical knowledge about the cognitive abilities of students who perform different levels of intelligence and mathematical ability.

A-0075

NOVELTY DISTRACTION AND POST-ERROR SLOWING AS MANIFESTATIONS OF SURPRISE-RELATED SLOWING

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The present study aimed to explore the potential bridge between two well established sources of response slowing in sustained attention tasks: novelty distraction and post-error slowing. Novelty distraction consists in the slowing of responses in a primary categorization task following the presentation of an unexpected change in an otherwise repeated stream of auditory distractors (novels among standards). Post-error slowing consists in the relative slowing of responses in a given trial subsequent to the production of an error on the previous trial. The present study sought to examine the possible link between post-error slowing and novelty distraction by administering an auditory-visual oddball task to a sample of 100 participants. The results revealed main effects of post-error slowing and novelty distraction as well as a significant interaction between these: RTs being slowest following an error and a novel sound. Response times were accurately modeled using the amount of surprise involved in each trial (based on Information Theory). We conclude that, for both post-error slowing and novelty distraction, (1) response slowing results from processes triggered by the occurrence of an unexpected event violating the cognitive system's expectations; and (2) response slowing is proportional to the amount of surprise conveyed by this event.

A-0076

THE ERROR-INDUCED ATTENTIONAL BLINK EFFECT FOR UNEXPECTED ERRORS

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Errors are typically followed by a series of behavioural changes. Although most of these changes are well understood, accuracy changes following errors are not. A new paradigm is presented where participants performed a flanker task followed by a rapid serial visual presentation (RSVP) of numbers (1-9). In most trials, a letter was presented on three possible positions of the RSVP (1-3-6). This was done with and without immediate feedback on the flanker task. In both experiments participants had worse target detection after an error in the flanker task. These findings support non-adaptive accounts for error monitoring that predict decreased post-error performance (Jentsch & Dudschig, 2009; Dudschig & Jentsch, 2009; Notebaert et al., 2009). In a third experiment we tried to dissociate between a bottleneck and an orienting account and showed decreased target detection after irrelevant red signals, irrespective of frequency. This result is interpreted in support for the bottleneck account. It appears that processing of unexpected error-like events interferes with subsequent information processing.

A-0077

THE EFFECT OF ALCOHOL AND PLACEBO ON POST-ERROR ADJUSTMENTS

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Several studies have shown detrimental effects of alcohol on post-error adjustments. In contrast to previous studies, which focused on only one aspect of post-error adaptive behavior, we compared the effect of alcohol and placebo on post-error slowing (PES), post-error reduction of interference (PERI) and post-error improvement of accuracy (PIA). Moreover, we used a between-subjects design (N = 45) comparing a control condition to both an alcohol and an alcohol-placebo condition as to disentangle physiological and expectancy effects of alcohol. In a standard Stroop congruency task, we found that intoxicated participants as well as participants with the incorrect belief of being intoxicated showed significant decreased PES compared to a control group. The underlying mechanisms of this effect are discussed in terms of the orienting account (Notebaert et al., 2009). Assuming alcohol expectancy increases error expectancy, the saliency of errors decreases and the error becomes an unsurprising event. As shown in Houtman et al. (2011), an unsurprising error will result in decreased PES. Furthermore, we found evidence for a condition-independent post-error increase of interference and post-error decrease of accuracy. This condition-independence supports previous research showing PES, PERI, and PIA are not caused by one and the same mechanism.

A-0078

EFFECTS OF SPEAKER'S SOCIAL HIERARCHY ON SENTENCE COMPREHENSION A WEEK HAS SEVEN DAYS, DEPENDING ON WHO SAYS IT.

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How much do social factors associated to a speaker can influence how humans understand a message? Here we have analyzed the effects of social hierarchy on the perceived credibility of sentences that vary in their degree of plausibility. We obtained two types of responses: behavioural overt plausibility judgements and electrophysiological, unconscious responses (modulations of the N400 component). Sentences were uttered by two speakers with different hierarchical statuses (as previously established through a hierarchical video game based on a visual discrimination task). Participants heard three subsets of sentences with different plausibility values depending on the last word (high-, intermediate- and low-plausibility). No traces of social hierarchy effects were detected in participants' overt judgements. However, brain activity in response to differences in plausibility was modulated by the social status of the speaker. When listening to the superior speaker, the modulation of the N400 component followed the expected pattern (inverse relationship between amplitudes and sentence plausibility). However, when participants heard the inferior speaker, the amplitude of the N400 for high-plausible sentences matched that of

the intermediate plausibility (increased amplitude). This result is interpreted as indicating that participants did not trust low ranking speakers, even if they uttered high-plausible sentences.

A-0079

SPECIFICITY OF NEURAL RESPONSES TO EMOTION

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While considerable work has identified brain regions consistently involved in emotion processing, virtually no studies have sought to characterize the specificity of this neural representation. In this study we used multivariate machine learning techniques to identify a neural network capable of predicting whether an individual is viewing an emotionally arousing or neutral image. We then assessed the specificity of this network by testing whether this pattern was expressed in separate datasets (e.g., viewing pain, experiencing pain, and working memory). The algorithm was able to successfully classify the picture type from brain activity with 91% accuracy with the dACC, anterior insula, PAG, and amygdalae being the most reliably predictive. Importantly, the emotion pattern demonstrated remarkable convergent and discriminant validity as it was able to successfully predict when participants were observing pictures depicting someone else experiencing pain, but was unable to determine when they were actually experiencing pain. Interestingly, the pattern was also expressed when participants were engaged in a working memory task. These results suggest that neural networks predictive of emotion are spatially distinct from networks that process physical pain, but may also reflect more deliberative executive control processes involved in directed attention or emotion regulation.

A-0080

A DIFFUSION MODEL ACCOUNT OF POST-ERROR SLOWING

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People tend to slow down after they make an error. This phenomenon, generally referred to as post-error slowing, has been hypothesized to reflect perceptual distraction, time wasted on irrelevant processes, an a priori bias against the response made in error, increased variability in a priori bias, or an increase in response caution. Although the response caution interpretation has dominated the empirical literature, little research has attempted to test this interpretation in the context of a formal process model. Here, we used the drift diffusion model to isolate and identify the psychological processes responsible for post-error slowing. We apply the model to a set of different paradigms featuring both young and old participants. We find overall support for the increased response caution interpretation, although other processes sometimes play a role as well. In general, the diffusion model decomposition of post-error

slowing allows conclusions about psychological processes that are more detailed and more informative than those obtained using traditional methods of analysis.

A-0081

THE EFFECT OF MATHS ANXIETY ON COGNITIVE REFLECTION

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When asked to solve mathematical problems, some people experience anxiety and threat, which can lead to impaired maths performance (Ashcraft, 2002). The present study investigated the effect of maths anxiety on performance on the cognitive reflection test (CRT; Frederick, 2005), which is based on mathematical word problems, and it is a measure of a person's ability to resist intuitive response tendencies, and rely on precise computations instead. The CRT has been found to correlate strongly with intelligence, time preferences risk-taking, and rational thinking. We predicted that maths anxiety would impair performance on the CRT. In our study a large number of secondary school and university students (over 300 participants/group) were administered the CRT, together with measures of maths anxiety, test anxiety, and general mathematical abilities (corresponding to the students' educational level). As predicted, maths anxiety was a significant predictor of cognitive reflection, even after controlling for the effects of general mathematical knowledge and test anxiety. Path analyses indicated that the effect of maths anxiety on the CRT was partly mediated by general mathematical knowledge, but there was still a direct effect of maths anxiety on the CRT. We also discuss developmental and gender differences on our measures

A-0082

THE PERVASIVE EFFECTS OF REWARD ON SKILL LEARNING: FROM VISUAL SELECTIVE ATTENTION TO VISUO-MOTOR PERFORMANCE

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Visual selective attention underlies goal directed behavior by allowing privileged processing of relevant information, while concurrently suppressing processing of irrelevant and potentially distracting visual input. Recent findings indicate that rewards exert a powerful influence on the deployment of visual selective attention, so that stimuli consistently associated with reward may become more salient and attract attentional resources following a value learning process. In our previous work we showed that reward-based modulations of attentional processing may go well beyond such Pavlovian form of associative learning, and act as a lever for the development and learning of specific attentional skills (operant conditioning of attention). Specifically, reward signals were found to modulate both target selection and/or distracter suppression, revealing a form of reward-mediated attentional skill learning. Similar effects of reward delivery were observed in a new

task, assessing visuomotor integration, and implying the acquisition of a new behavioral skill. Interestingly, different patterns of learning emerged in participants with different traits and performance style, perhaps reflecting an underlying variability in the degree of sensitivity to external reward. We propose that both attentional and visuomotor reward-based modulations impinge on procedural memory traces, which in turn modulate processes responsible for attentional, as well as visuomotor performance.

A-0083

TIME PERCEPTION IN PICTURE-WORD INTERFERENCE TASKS

Enes Avcu

This paper studies time perception concurrently with a picture-word interference task. According to the Attentional Gate Model, there exists a strong relation between attentional processes and prospective duration judgments in which people are informed that they are required to estimate a time period in advance. Prospective duration judgments can be used as a measure of the amount of mental load. Thus, we want to look at the effect of the high vs. low load on time judgments. We use the picture-word interference task to compare duration estimates in two different conditions: in the categorically (semantic) related part of the task we expected to find time to be underestimated since workload in is high, whereas in the phonologically related part of the task we expected to find time estimates akin to the actual time of the experiment. The results we obtained are encouraging in the sense that there is a significant difference between two conditions and we found that after the semantic part of the task the subjects underestimate the time contrary to the phonological facilitation part in which subjects' time judgments were close to the actual time of that condition. Moreover, there is a challenging difference between genders.

A-0084

THE CONTRIBUTION OF PARTIAL AND CONTEXTUAL INFORMATION TO THE FEELING OF KNOWING IN EPISODIC MEMORY

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When people fail to retrieve a memory target, they can still accurately predict whether they know the missing answer. The metamemory judgment of Feeling of Knowing (FOK) is a prediction concerning the likelihood of future recognition of a currently unrecalled item. According to the accessibility model (Koriat, 1993,1995), FOK for an unretrieved target relies on the quantity of information that can be retrieved, such as partial or contextual information. Koriat demonstrated this for working memory and semantic memory. The current study aimed to assess the validity of the accessibility model for episodic memory, in an ecological task. We also predicted that the retrieval of contextual information will affect FOK. Participants learned the names of imaginary animals (TOTimals, Schwartz & Smith, 1997). These stimuli allowed us to experimentally

control the nature and amount of contextual information. We varied the amount of contextual information (country, diet, weight) that accompanied the name and image of the TOTimal. The results showed concordance between accessibility and FOK. FOK increased with the retrieval of partial and contextual information. The current study demonstrated that the accessibility of contextual information affected FOK ratings. Both findings are consistent with the accessibility model applied to episodic memory.

A-0085

MEMORY FOR EMOTIONAL EVENTS IN THE MISINFORMATION PARADIGM: MOTIVATION MATTERS

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In the misinformation paradigm, misleading information is presented after witnessing an event. False memories are formed when this information is mistakenly remembered as part of the event. Two experiments were designed to examine the influence of the emotional content of an event on memory. In Experiment 1, valence and arousal were manipulated by presenting six types of photographs (positive with high/low arousal, negative with high/low arousal, ambiguous, neutral), followed by exposure to misleading suggestions about both central and peripheral details. Negative and ambiguous events elicited fewer correct and more false memories for peripheral details than positive and neutral events. Results thus pointed to the importance of valence, but goal-relevance might have been a confounding factor. Therefore, Experiment 2 evaluated the effect of both positive and negative pre-goal and post-goal emotion (hope, fear, happiness, devastation) on memory for goal-relevant and goal-irrelevant details. Participants viewed a slideshow and elaborated on true and false information regarding the main character's emotions and actions. Pre-goal emotional elaboration led to more false memories for peripheral (goal-irrelevant) details than post-goal emotional elaboration and perceptual elaboration. Results support the view that appraisals of goal-relevance, rather than valence or arousal, affect the type of details encoded and remembered.

A-0086

COGNITIVE CONTROL OF CONVERGENT AND DIVERGENT THINKING: A CONTROL-STATE APPROACH TO HUMAN CREATIVITY

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Creativity is often assumed to represent a unitary trait or skill. However, there is increasing evidence that creative performance reflects the contribution of separable subcomponents which presumably rely on dissociable cognitive and neural mechanisms. I will provide an overview of findings from our lab that suggest that convergent and divergent creative thinking call for different configurations of the cognitive system—different cognitive control

states that is. Among other things, we used convergent- and divergent-thinking tasks as task primes that we hypothesized to induce control states that provide strong versus weak top-down control of, and local competition between alternative stimulus and response codes. As predicted, we were able to demonstrate that convergent-thinking primes made conflict resolution in a logically unrelated but temporarily close global-local task, semantic Stroop task, and Simon task more efficient than divergent-thinking primes did. Also as predicted, we observed that divergent-thinking primes improve performance in an Attentional-Blink task.

A-0087

TO APPEAR STRAIGHT OR SUCCESSFUL: IMPACT OF MASCULINITY THREAT AND TASK IMPORTANCE ON TEST RESULTS

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This study was designed to test the effect of masculinity threat and perceived task importance on speed and accuracy in an experimental test. A total of 100 male respondents completed the „social sensitivity test“ which consisted of three types of tasks: to determine gender, eye color or emotional state of the person on the photograph they were exposed to for 150-300 ms. The „masculinity threat“ group was told that homosexual men were better at the task they were about to do; controls received no specific information. The „important task“ group was told the measured ability was highly predictive of future career success; controls were just informed about the test content. Results showed a main effect of masculinity threat on both dependent variables: participants who were told that homosexual men are better at the experimental task were slower and less accurate than controls. The effect was demonstrated on overall score, as well as on each task separately, albeit it decreased through experiment. Task importance was not significant, nor was interaction. The effects of masculinity threat can be interpreted as analogous to stereotype threat: the possibility of being identified as a member of a minority group (homosexuals) decreased respondents' success rate.

A-0088

ASYMMETRIC DOMINANCE EFFECT DEPENDING ON TEMPORAL AND SOCIAL DISTANCE OF DECISION

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Construal level theory investigates how psychological distance (social, temporal, spatial or hypothetical) effects decision-making. It predicts that non-compensatory strategies will be activated in high distance situation: for example, „asymmetric dominance effect“ should be more pronounced if deciding for future events in comparison to present, and for other person in comparison to oneself. This effect refers to the situation in which adding an inferior option (decoy) increases the share of a relatively dominant option (target). A total of 1486 respondents, visitors of a cultural festival, choose which exhibition, concert or food

promotion to attend. We varied temporal distance (now/next year), social distance (me/other) and decoy position (dominated by A/B). There was a significant AD effect for the exhibition choice, at both levels of temporal and social distance; AD for concert choice was significant only for present but not for future choices; there was no significant effect for traditional food choice. Results did not corroborate CLT predictions. This might be due to the way competing options were presented: numerically for exhibition, narratively for food promotion and combined for concert, leading the respondents to compare them using different standards. Future research on impact of option presentation on preferences is warranted.

A-0089

THE IMPACT OF SURPRISE AND EXPECTANCY ON THE EMOTIONAL MODULATION OF THE ATTENTIONAL BLINK

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The attentional blink effect (AB; Raymond, Shapiro, & Arnell, 1992) is diminished when T2 is an arousing stimulus (e.g., Anderson, 2005; Keil & Ihssen, 2004). The aim of this study was to examine the role of expectancy. According to the surprise-attention hypothesis (e.g., Horstmann, 2002; 2006) stimuli that deviate from expectations capture attention. Because participants in an AB experiment probably do not expect to encounter taboo words, surprise might be partly responsible for the modulation of the AB by taboo stimuli. However, an alternative explanation is that because in such experiments, arousing T2 stimuli are presented relatively often, participants' are in fact no longer surprised. Instead, their attentional set becomes „geared“ to process such stimuli. In two studies, we tried to disentangle these explanations by manipulating the extent to which participants expected to encounter arousing T2 stimuli. Even though we found evidence that AB effects can be modulated by participants' attentional set, we also find support for the „surprise“ hypothesis.

A-0090

SUBLEXICAL AND EMOTIONAL PROCESSING IN BILINGUALS' VISUAL WORD RECOGNITION

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Some of the main research interests of Rosa M^a Sánchez-Casas were sublexical processing in visual word recognition (her very early research in Spanish), bilingualist's word recognition and the processing of words with emotional contents. In honour of her, firstly we will present briefly the work that we carried out in collaboration with her about sublexical morphological processing using ERPs. We found some differences between derivational and inflexional morphology, both temporally and in locations of the N400 component. In addition, binding together three of the fields Rosa was interested about, we will present some experiments with the goal of study whether cross language lexical activation in bilinguals is already mediated at a sublexical level. Effects of syllable frequency in the non-presented language were found.

Lastly, one study tested if emotional states affect differently

to first and second language word processing in late second language learners. The results showed the lexical frequency effect in the N400 component for the L1 words, but this effect was maximal at a later time-window in the case of L2 words. Additionally, ERPs under a sad transient mood showed larger negative amplitudes than under the happy transient mood in both L1 and L2 conditions.

A-0091

IMPROVING MAGNITUDE REPRESENTATION AND NUMERICAL ESTIMATION OF PRESCHOOLERS BY PLAYING A NUMBER GAME

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This study examined the effect of playing a number memory game and linear board game on the symbolic and non-symbolic comparison and numerical estimation performance in 5-year-old preschoolers. Children were randomly assigned to one of the two experimental conditions or to the control condition. The goal of the game was to find two matching cards; in the experimental conditions a card with a digit and one with the corresponding amount of objects (canonically or randomly arranged) and in the control condition a card with a colour and one with the corresponding coloured objects. If a match was found, they could move forward on the game board. All children played the game twice a week, over a period of four weeks. During this period, the game increased in difficulty by using higher numbers on the cards. Performance on both tasks was measured by means of a pre-post design. The results showed a very small improvement only on the comparison. Crucially, no differences were found between the experimental and control conditions. These findings are in line with previous intervention studies where the effects were also very limited and thus confirm the required cautiousness to draw conclusions based on short-term intervention studies.

A-0092

COGNITIVE CONTROL AND THE COMT VAL158MET POLYMORPHISM: GENETIC MODULATION OF VIDEOGAME TRAINING AND TRANSFER TO TASK-SWITCHING EFFICIENCY

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The study investigated the possibility that successful transfer of game-based cognitive improvements to untrained tasks is modulated by preexisting neuro-developmental factors, such as genetic variability related to the catechol-O-methyltransferase (COMT)—an enzyme responsible for the degradation of dopamine. The COMT Val158Met genotype may differentially affect cognitive stability and flexibility, and we hypothesized that Val/Val homozygous individuals (who possess low prefrontal dopamine levels) show more pronounced cognitive

flexibility than Met/-carriers (who possess high prefrontal dopamine levels). We trained participants genotyped for the COMT Val158Met polymorphism on playing "Half-Life 2", a first-person shooter game which has been shown to improve cognitive flexibility. Pre-training (baseline) and post-training measures of cognitive flexibility were acquired by means of a task-switching paradigm. As expected, Val/Val homozygous individuals showed larger beneficial transfer effects than Met/-carriers. Our findings support the idea that genetic predisposition modulates transfer effects and that playing first-person shooter games promotes cognitive flexibility in individuals with a suitable genetic predisposition.

A-0093

PUTTING MEMORY TO WORK: A NOVEL GAZE-CONTINGENT VISUAL WORKING MEMORY TASK FOR INFANTS

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We tested 9-month-old infants' visual working memory capacity for object/location bindings - what is where - with a novel paradigm that used gaze-contingent rewards and measured infants' anticipatory gaze responses (using a Tobii T120 eye tracker). Loosely based on the game 'Concentration', in test trials, three face-down cards were presented. Two flipped over sequentially (revealing, e.g., a triangle and then a star), and then flipped back face-down. Next, the third card was flipped to reveal a match (e.g. a star) to one of the previously seen, now-face-down cards. Infants received a reward (a short, engaging animation) if they subsequently looked to the matching card first (before it flipped over to reveal the match). Infants performed significantly above chance ($p < 0.001$). These results corroborate previous findings (Kaldy & Leslie, 2005; Oakes, Ross-Sheehy, & Luck, 2006) and point to rapid development of VWM for object/location bindings. Compared to Violation-of-Expectation paradigms that measure passive gaze responses to novelty, this paradigm presents a more challenging, but more ecologically relevant test of memory, as it measures the ability to make predictions based on remembered information. As well, this paradigm can be readily 'scaled-up' to test toddlers or older children (these studies are ongoing).

A-0094

GAMING TO SEE: ACTION VIDEO GAMING ENHANCES PROCESSING OF MASKED STIMULI

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Recent research revealed that action video game players outperform non-players in a wide range of attentional, perceptual and cognitive tasks. Here, we test, if expertise in action video games changes the detection thresholds for shortly presented, masked stimuli and the potential of such stimuli to bias behaviour. In a response priming paradigm, participants classified four animals pictured as targets as being small or large. Before each target one of four masked prime pictures was presented and either required

the same (congruent) or the alternative (incongruent) response. Unconscious prime processing was revealed by faster responses for congruent compared to incongruent conditions. Video game players showed larger congruence effect than non-players for 20 ms primes, whereas there was no group difference for 60 ms primes. In addition, action video game players detected masked primes at a lower threshold than non-players. Thus, action video game expertise is accompanied by faster and more efficient processing of shortly presented visual stimuli.

A-0095

MANY FACES OF EXPERTISE: FUSIFORM FACE AREA IN CHESS EXPERTS AND NOVICES

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The ability to recognize faces is arguably one of the most important and most practiced skills. The possible functions of the fusiform face area (FFA), generally believed to be responsible for face recognition, also feature these two characteristics. On the one hand, there are claims that the FFA has evolved into a face specific module due to great importance of face processing. On the other, the FFA is seen as a general visual expertise module that distinguishes between individual examples within a single category. Here we test this latter FFA expertise hypothesis using experts specialised in chess, a domain which does not share visible features with faces. We first show that chess expertise modulates the FFA activation when complex multi-object chess positions were presented. We then show that isolated chess objects do not produce different activation patterns among chess experts and novices. The two studies provide support for the general expertise view of the FFA function, but also extend its scope. The FFA does not merely seem to distinguish between different exemplars. It also seems to engage into parsing complex multi-object stimuli that contain numerous functional and spatial relations.

A-0096

THE ROLE OF AROUSAL IN MODULATING EXECUTIVE FUNCTIONS

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Securing efficient goal-directed behavior might involve what seem to be very different functions and brain systems. An example is the interaction between executive control—a system that deals with goal achievement—and alertness—a subcortical-based mechanism that modulates the level of arousal. Here, we present a series of studies conducted in order to reveal possible links between phasic arousal and executive control. Specifically, we show that warning cues that elevate arousal can interfere with aspects of selection when irrelevant spatial information has to be ignored (e.g., in the flanker task). Nevertheless, we show that phasic arousal can improve other aspects of executive control such as response inhibition (e.g., in a stop-signal task). These findings shed light on the way lower sub-cortical mechanisms modulate complex cognitive functions in order to achieve goal-directed behavior.

A-0097

AGE-RELATED INHIBITORY CONTROL PROCESSES IN MEMORY RETRIEVAL AND THE ROLE OF OUTPUT INTERFERENCE

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Retrieval-induced forgetting is often characterised as an index of inhibitory control during memory retrieval. Non-inhibitory mechanisms, however, are also acknowledged to be potential contributors to this forgetting effect. In our first study, we used a modified retrieval practice paradigm in which practised items were not cued for retrieval at final test, thereby obviating the possibility that any observed forgetting could be a function of stronger practised items blocking weaker unpractised items. Retrieval-induced forgetting emerged for young adults and for younger-old adults, but not for older-old adults, consistent with an age-related inhibitory deficit. In a second study, we explored further the effects of output interference on retrieval-induced forgetting by manipulating whether practised items were retrieved early or late. We found that retrieval-induced forgetting emerged irrespective of retrieval order for both young and younger-old adults. Older-old adults, in contrast, showed retrieval-induced forgetting only when practised items were cued early. We explore what these patterns of results mean for an inhibitory account of retrieval-induced forgetting, and the extent to which such output interference effects could be construed as evidence of inhibition. Implications for what we mean by inhibitory processing and how we index inhibitory activity in memory retrieval are also considered.

A-0098

THE BENEFITS OF AUTOMATIC INHIBITION

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Social concept priming tends to trigger automatic behavior that is in line with the primed concept. Lately, We (Golfarb, Aisenberg, & Henik, 2011) primed participants with the social concept “dyslexia” (that relates to reading difficulties) before they performed the Stroop task. We found that the Stroop effect was reduced and even failed to reach significance after the dyslectic person priming. This suggests that the influence of automatic inhibition that is triggered by social priming is much stronger than the intended inhibition. In the current study I examine whether intentional inhibition abilities can be improved by performing automatic inhibition training. This study compared the improvement in the Stroop task as a result of different inhibition practice phases: In Exp. 1 the practice phase involved training in automatic inhibition (social priming of „dyslexia”), in Exp. 2 it involved non-automatic inhibition, and in Exp. 3 this phase involved a control training. The results revealed that practicing automatic inhibition leads to the most improvement in the mental control mechanism and that inhibition abilities can be improved by performing automatic training.

A-0099

COGNITIVE LOAD OR EMOTIONAL AROUSAL? THE ACCURACY OF INDIRECT METHODS OF DECEPTION DETECTION IN DIFFERENT LIE SCENARIOS.

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Previous studies have suggested that indirect methods of deception detection can improve the accuracy of veracity assessments. The present study was undertaken to test whether the accuracy of various indirect questions varies when they are utilized in different lie scenarios. College students (total N = 362) viewed either truthful or deceptive messages concerning mock crime, opinion on a social issue or description of an acquaintance. After each statement they answered either a direct question or one of 3 indirect questions concerning the cognitive load (thinking hard / opinion certainty) of the sender or the emotions displayed by him or her (ambivalent emotions). The results revealed that the accuracy of indirect questions varied between the lie scenarios and not all indirect questions allowed more accurate differentiation between truthful and deceptive statements than answering a direct question. The question concerning cognitive load of the sender (thinking hard) achieved the highest efficacy, however, in questioning scenarios only and not in free narrative scenario. The results obtained could confirm the hypothesis that the effectiveness of the indirect method depends to some extent on a lie scenario-question type match. The theoretical and practical implications of these results are discussed.

Keywords: deception, deception detection, indirect method

A-0100

AGE DIFFERENCES IN CHILDREN'S SUSCEPTIBILITY TO IMMEDIATE MISINFORMATION ACCEPTANCE : WHO ARE THE MOST VULNERABLE ?

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Suggestibility is a complex and multidimensional concept (Ornstein & Elischberger, 2004) whose interest particularly lies in a better understanding of false testimony. One facet of suggestibility, the "Immediate Misinformation Acceptance" (IMA), is observed when a person accepts immediately erroneous information suggested through questions (cf. Eisen, Morgan & Mickes, 2002). It is now well documented that younger children are more likely than older children or adults to accept immediately misinformation. "IMA" has been mostly studied by using a between-subjects design (e.g., Roebbers & Schneider, 2000). In this case, children answer either misleading, or unbiased questions. Few studies have examined the IMA by using a within-subjects design. Such a design, in which children answer both misleading and unbiased questions, eliminates the problems due to individual differences. The aim of the present study was to examine the IMA in three age groups. 6-, 10- and 14-year-olds answered individually both unbiased and misleading questions about a short film that they watched previously. Statistical analyzes indicated

a significant interaction between age and the IMA. More specifically, the results showed a susceptibility to immediate erroneous suggestions only for the 6-year-olds age group. Implications for the debate on a transitional period regarding IMA will be discussed.

A-0101

ERRORS INITIALLY BOOST BUT ULTIMATELY FADE SUBSEQUENT VISUAL PROCESSING

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Errors have traditionally been described as information processing failures but recently research focused on the emotional aspects of error processing. Studies revealed that errors increase autonomic arousal and prime defensive reflexes (Hajcak & Foti, 2008; Hajcak, McDonald, & Simons, 2003; Wessel, Danielmeier, & Ullsperger, 2011). Furthermore, Carp and Compton (2009) showed reduced alpha power following errors, indicating increased cortical arousal. The emotional response to errors is also believed to (negatively) influence subsequent information processing (Notebaert et al., 2009). By combining a flanker and a visual oddball task, we investigated the effect of errors in the flanker task on visual ERP components of the oddball task. The results show a larger N100 after errors, similar to the effect observed after high-arousal primes (Hinojosa, Méndez-Bérteolo, & Pozo, 2012). However, both the P200 and the P300 amplitude was reduced after error trials, indicating diminished higher-order processing after errors. The results suggest that errors create a short-lived boost in information processing (N100) that is followed by reduced visual processing. The results are discussed in terms of the orienting (Notebaert et al., 2009) and bottleneck account for post-error slowing (Jentzsch & Dudschig, 2009; Dudschig & Jentzsch, 2009).

A-0102

ROLE OF ARTICULATORY MOTOR PLANNING ON PICTURES CATEGORIZATION: A KINEMATIC STUDY

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Behavioral and neuroimaging studies provide evidence of automatic activation of phonology (i.e., articulatory motor planning) during the covert recognition of lexical stimuli. A kinematic study is presented exploring the role of articulatory speech-motor planning on the semantic categorization of pictures. We measured participants' hand movements toward one of two items alternative by recording the streaming x,y coordinates of the computer mouse during the choice. Participants categorized a set of 41 colored pictures of natural and artifact objects, based on their category congruency with a previously presented cued-word. Semantic and phonological relations between the cued-word and the target responses, and between the target responses were varied. Trajectory spatial attraction towards target alternatives was present for the Competitor condition (e.g., the cue-word was semantically related to the correct response target, and phonologically related to the other) with respect to the Non-Competitor condition (e.g., the cue-word was semantically and a phonologically

related with the correct response target). Results indicate that articulatory information influences the semantic categorization of pictures, in line with previous results using auditory stimuli. Here articulatory information is elicited in the presence of pictures and lexical stimuli, plausibly through covert speech-motor planning activity, and modulates the dynamic competition between choice alternatives.

A-0103

PREDICTION OF EVENT VALENCE BY TIME OF OCCURRENCE: A CASE OF ANTICIPATIVE EMOTION REGULATION?

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Human cognition and behaviour are to a large degree guided by affective information, and affective aspects are prevalent in our everyday environment. Fast and efficient processing of these affective aspects is essential for successful communication, goal-directed behaviour and social interaction. We investigated whether valence processing can be assisted by temporally specific expectancy. Emotional aspects of situations often accord to characteristic temporal patterns. Sales pitches, for example, often begin with a rather negatively framed offer; follow by a positively framed one. Does the temporal predictability of such patterns assist one in cognitively processing the emotional framing? We investigated whether temporal predictability of valence assists linguistic processing on the single word level. In a response time experiment we presented words with negative or positive valence after a long or a short warning interval. Participants had to categorize the word's gender. Interval duration and valence were both task-irrelevant but were correlated with each other (valence was predictable from interval duration with a probability of .8). Response times were faster for frequent combinations of valence and interval than for infrequent. We conclude that temporal valence predictability assists valence processing. Valence being task irrelevant excludes an interpretation in terms of temporally specific response preparations.

A-0104

EFFECTS OF ATTENTION AND CUE REDUNDANCY ON CONCURRENT SOUND SEGREGATION AS EVALUATED WITH EVENT-RELATED POTENTIALS (ERPS)

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This study was aimed at assessing the effects of attention and of the presence of multiple cues on concurrent sound segregation as evaluated with the object-related negativity (ORN) component of the event related potential. Participants were presented with sequences in which 50% of the sounds were harmonic complex tones. The other half had one or two of their harmonic partials mistuned by +8 %, delayed by 100 milliseconds, or delivered with different interaural time and intensity difference compared

with the other partials (perceived location difference). In separate blocks, one, two, or three manipulations were combined. Participants either watched a silent movie (passive listening) or marked on each trial whether they heard one or two concurrent sounds (active listening) while the electroencephalogram (EEG) was recorded. The manipulations elicited larger ORN amplitudes in the active than in the passive listening situation. Perceived location difference was found to be a weaker cue for concurrent sound segregation and for ORN than the other manipulations. Sub additive ORN amplitude effects were observed for the various cue combinations. This suggests that ORN indexes the perception of two concurrent sounds, rather than the strength or reliability of the sensory evidence driving the perceptual decision.

A-0106

EVALUATING THE CONSTRUCT VALIDITY OF IMPLICIT ASSOCIATION TESTS USING CONFIRMATORY FACTOR ANALYSIS MODELS.

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The Implicit Association Test (IAT) is a valuable method for assessing implicit bias and prejudice. However, a critical examination of the psychometric properties of this task indicates that substantial error and method variances may be thwarting efforts to accurately estimate underlying attitudes. The current study examined data from 198 participants who completed four IATs, two priming tasks and two attitude questionnaires related to racial prejudices. The IATs measured attitudes towards people from the Middle East and Europe (Racial IAT) and countries in the Middle East and Europe (Country IAT). Two of the four IATs were traditional verbal IATs and two were pictorial IATs. Confirmatory factor analyses, including multiple-trait by multiple-method, revealed high error and method variances for performance on all the IATs. Despite this, each of the IATs possessed good internal construct validity. Strong convergent validity between the verbal and pictorial versions of the IAT was also found. These findings have implications for the interpretation of IAT scores, raising concerns for previous interpretations and theories derived from IAT scores that have not considered the high error and method variances within them.

A-0107

SIZE IS IN THE EYES OF THE BEHOLDER: RELEVANCE-SPECIFIC BIAS IN THOSE AFRAID OF SPIDERS

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Previous studies demonstrated that individual differences can modulate the perceived size of an object. Two factors that affect perceived size are stimulus valence and its self-relevance to the observer. Whereas most of the previous literature focused on perceptual size, the current study examined whether these factors also modulate conceptual size. Spider pictures carry negative valence, but they are also self-relevant to those who are afraid of them. Thus, the current work used pictures of spiders and asked whether we all possess an exaggerated conceptual size of spiders

(because of the negative valence they possess), or whether this size bias occurs only in people who are afraid of spiders (because spiders are self-relevant stimuli for them). Participants extremely high or low in fear of spider rated the conceptual size and the unpleasantness of pictures of spiders and other animals. Results indicated that although both groups rated spiders as more unpleasant than the other animals, only the highly fearful participants showed conceptual size bias for these stimuli. These findings suggest that bias in conceptual size is specific to the fear-inducing stimulus and is not directly influenced by the stimulus unpleasantness.

A-0108

EFFECTS OF CROSS-MODAL VISION-OLFACTION INFLUENCES IN A PRIMING TASK: A CASE IN THE WINE DOMAIN

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We performed two experiments to assess the role of vision-olfaction interactions on wine categorization. A priming task was used and the congruence between the prime and the target was manipulated. In experiment 1, a visual prime representing a picture of a red or white wine or water (control) was presented before smelling a red or white wine. 43 participants had to answer as fast as possible whether the wine they smelt was a red or a white wine. There were 8 controls, 8 congruent and 8 incongruent trials. Results indicated shorter reaction times in the congruent conditions, confirming facilitation on the olfactory categorization of odors due to the presence of prior congruent visual information. In experiment 2, the inverse relationship was tested. The procedure was similar to experiment 1 except that red and white wines as well as water were presented as primes to smell and pictures of a red or white wines were presented as targets. Results demonstrated again facilitation due to the presentation of an olfactory congruent prime on the visual red or white categorization of pictures. These results are discussed regarding perceptual cross-modalities and categorization, with some issues in the wine domain.

A-0109

RIGHTING A WRONG: DISSOCIABLE EFFECTS OF DORSOMEDIAL FRONTAL AND BASAL GANGLIA DAMAGE ON ERROR INHIBITION AND CORRECTION

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A critical aspect of self control is spontaneous prevention or adjustment of inappropriate responses. The basal ganglia (BG), the dorsomedial frontal cortex (DMF) and the right inferior frontal cortex (rIFG) has been implicated in externally signaled response inhibition. However, their role in spontaneous response inhibition and adjustment is unclear. Here we examined spontaneous error inhibition and correction in patients with selective lesions to each

of these three regions, and in healthy controls. Using a sensitive kinematic response apparatus, we monitored movement acceleration every ten ms from initiation to maximum acceleration while subjects performed a two choice flanker task. Error acceleration and acceleration-change was initially greater and then smaller than that of correct responses, consistent with engagement of an inhibitory mechanism shortly after response onset. This inhibitory phenomenon was not detected in BG patients. In contrast, DMF damage was associated with slower acceleration of the correction. Right IFG damage had no effect on error inhibition or correction. This work clarifies the component processes involved in spontaneously rectifying an error, arguing for a dissociable role for the BG in error inhibition, but not correction, and the DMF in rapid error correction, but not error inhibition.

A-0111

THE CONTRIBUTION OF LOW-LEVEL SENSORY FEATURES VERSUS KNOWLEDGE-BASED FACTORS FOR ENCODING OF OBJECTS IN WORKING MEMORY

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Brief presentation of a complex scene entails that only a few objects can be fully processed and stored in memory. Both low-level sensory salience and high-level semantic (e.g. conceptual mismatch between an object and the scene) contribute to this selection process. We used fMRI to investigate these factors during encoding in WM. Subjects were presented with complex scenes that on some trials included also an out-of-context object. Following a retention interval, participants judged the location of a target-object extracted from the initial scene. The target was selected according to its high/low salience and its in-/congruence with the scene. Retrieval performance increased with increasing object salience, particularly so in conditions entailing a greater target uncertainty (context-congruent trials). Encoding-related fMRI results showed that target saliency (high vs. low) activated the superior parietal cortex specifically in context-congruent trials. By contrast, the encoding of incongruent trials recruited the inferior parietal cortex, suggesting knowledge-based focussing of attention toward the out-of-context object. A control condition with pre-cued targets indicated that this effect was not entirely due to high certainty about the target identity during encoding. We conclude that activity in parietal cortex reflects perceptual and semantic factors for the selection of objects for encoding in WM.

A-0112

THE VIRTUAL-HAND ILLUSION: EVIDENCE FOR INTERACTIONS BETWEEN PERCEIVED BODY OWNERSHIP AND EMPATHY

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The rubber hand illusion (RHI) shows that participants perceive a rubber hand in front of them as part of their body when the rubber hand and the participant's real covered hand are stroked synchronously. We replicated the RHI by means of Virtual Reality: Participants wearing a dataglove perceived a virtual hand as being their own if it moved in sync with their own movements rather than with a temporal delay. To make the experience more realistic, we used visual-tactile stimulation: contact of the virtual hand and a virtual object (a ball or knife) was accompanied by the activation of a vibrator integrated into the data glove. Reliable illusions and effects on the galvanic skin response (GSR) were obtained in the sync condition. Moreover, while sync modulated the GSR effect in the "impact" (ball contact) condition (more GSR with sync), the "threat" condition (knife cut) elevated GSR levels under both conditions. This suggests that perceived body ownership is less relevant for (i.e., does not modulate) threatening events, which fits with findings from research on empathy. Another study investigated whether multisensory integration is necessary and sufficient for body ownership.

A-0113

DYNAMICAL REPRESENTATIONS IN PEOPLE WITH CEREBRAL PALSY: AN ACTION-PERCEPTION CASE?

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Previous research suggests that People with Cerebral Palsy (PCP) have ability to engage in Mental Imagery (MI) when performing mental rotation tasks, though with specific limitations as regards the time of execution.

The main objective of this study was to test whether similar limitations would show up in tasks allegedly involving dynamic representations, such as Representational Momentum (RepMom), the forward mislocalisation of the vanishing point of a moving target.

Many questions appear of importance. Is there a link between MI and Movement extrapolation? Does MI "slowdown" extend to other dynamical representation paradigms? Is mental rotation slowdown in PCP reflecting MI impairments?

48 PCP and 48 age-matched controls participated in the experiments. Two response conditions were used: with motor involvement (mouse/track-ball) and without (probe method). Different response delays were also imposed on the response, to assess the temporal course of RepMom in each group.

PCP displayed larger RepMom than controls when a motor response was required, but lesser RepMom than controls in the probe condition. The peak of RepMom in PCP was arrived at delays of 600 ms, later than in control subjects. Results are discussed in light of an extrapolation mechanism calling upon the motor underpinnings of action-perception circuits.

A-0114

'BUT' HOW DO CHILDREN REASON WITH IT?

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Our research aimed at investigating whether 8-to-12-year-old children spontaneously make the conventional implicature induced by 'but' -combined with 'so' and 'nevertheless'- in 'p but q' sentences constructed as distancing-contrastive connections. 'But' (and 'so') direct the reader towards the conclusion stemming from the q-argument (p but q, so q), whereas 'nevertheless' overrules the q-conclusion in favor of the p-argument (p but q, nevertheless p). We presented the children with short stories ending with a 'p but q' sentence and they were instructed to indicate the 'appropriate' conclusion introduced by either 'so' or 'nevertheless'. In addition, we measured children's working memory (WM)-capacity in order to explore the possibility that making these inferences is effortful. Our results show that children do make the inferences to a certain extent but are very sensitive to the content of the p- and q-arguments. Whenever the p- or q-argument is an absurd argument (contrasted with a sensible argument), this argument almost always gets ignored in favor of the sensible argument, irrespective of the 'appropriate' conclusion 'but' directs the reader to. Our WM-measures do not show a reliable effect. Children with a high WM-span did not make the inference more often than children with a low WM-span.

A-0115

BINDING HAS A COST IN VISUAL WORKING MEMORY BUT NOT IN VISUAL SHORT-TERM MEMORY

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In the literature on temporary visuo-spatial binding, the terms 'visual short-term memory' and 'visual working memory' tend to be used interchangeably. Within the multiple component framework for working memory, visual short-term memory is viewed as a passive temporary store (a visual cache) that is one component within a working memory system that includes domain-specific storage and domain general processing. The visual cache stores the visual characteristics of material from visual or auditory presentation. This paper will present a mixture of published and new evidence focused on the concept of a visual cache, demonstrating that (a) there is no cost in change detection performance for bound visual features (b) there is no evidence of learning across multiple repeated presentations of the same stimulus array (c) there is no age-related binding impairment. New and published evidence will also be presented demonstrating that when the binding task involves additional components of working memory there is evidence for a cost of binding, of learning across trials, and of an age-related impairment.

A-0116

ATTENTIONAL SELECTION FOR SHORT-TERM MEMORY: GAZE-DIRECTION AT ENCODING PREDICTS RETRIEVAL ACTIVITY IN POSTERIOR PARIETAL CORTEX

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Remembering of complex visual stimuli demands a tight interplay between memory functions and attentional selection. Here, we examined this interplay during free-viewing of complex and dynamic visual scenes (8 videos, approx. 5 min each). We used patterns of fixation to index attentional selection for encoding in short-term memory, and exploited these to predict brain activity during retrieval. Each video was characterized by 8 different actors/actresses who entered twice into the scene, at unpredictable times: the first appearance corresponded to the memory "encoding" phase, while the second presentation represented the memory "retrieval" phase. We monitored gaze-direction and used the tendency of the subjects to look towards each actor during the encoding phase as an index of attentional selection. Accordingly, we categorised each actors as: "high probability of selection/encoding", when subjects fixated the actor more during the first than the second presentation; versus "low probability of selection/encoding", when subjects fixated the actor more during the second than the first presentation. The fMRI analyses considered the brain activity during retrieval, as a function of fixation probability at encoding. This revealed activation in the posterior parietal cortex (SPG), plus occipital visual areas (FFA). We conclude that eye-movements during encoding can predict retrieval-related activation.

A-0117

PROCESSING OF CONCURRENT SOUNDS IN NEWBORN INFANTS

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Disentangling concurrent sounds is fundamental for veridical perception of sound sources. While this function has received much attention in adults, little is known about its developmental trajectory. The human auditory system uses both instantaneous and sequential cues for parsing the acoustic input. By measuring event-related brain potentials (ERPs) we tested whether two instantaneous cues of source segregation (mistuning and delaying one

partial of a complex tone) are processed by newborn infants. Neonates were presented with sequences of complex tones. In separate blocks, for half of the tones, one harmonic was either mistuned by 8%, or both mistuned (8%) and delayed by 100ms. An ERP component termed the object-related negativity (ORN) was elicited by the mistuned and delayed, but not by the mistuned-only tones. ORN is known to correlate with perception of two concurrent sounds in adults. These results suggest that 1) the ability to segregate concurrent sounds is functional at birth but 2) the processing of harmonic structure does not yet reach the resolution required for segregation. That is, at birth, infants are either more sensitive to temporal than to spectral cues of concurrent segregation, or they need redundant cues for separating sounds arriving simultaneously to their ears.

A-0118

CAN CHILDREN MONITOR THEIR FOOD INTAKE?: NOVEL INSIGHTS INTO TEMPORAL MEMORY.

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Frequency processing, that is the ability to accurately determine how many times an event or series of events have happened, is argued to be a crucial 'facet of cognition' (Hasher & Chromiak, 1977), yet how and when this ability develops remains unclear. This research investigates frequency processing from a novel direction which aims to understand whether children can estimate, and therefore monitor, the frequency of their daily fruit intake, an essential ability for consuming the recommended 5 a day. Children (aged 8-11 years) were given smoothies 0-4 times daily for one week; they were then questioned about their intake at the end of each day and after a week delay. In a second study children completed short computer based frequency and mathematical competence tasks, as research suggests frequency processing may require people to enumerate how many events they can recall from memory (Brown, 2008). A two way ANOVA (age x delay) explored the accuracy of fruit intake recall and correlations between frequency judgements and children's ability to monitor fruit intake (controlling for age) were conducted. Conclusions allow for a greater understanding of the nature of frequency processing and its importance for monitoring food intake.

A-0119

REDUCING THE MISINFORMATION EFFECT: THE ROLE OF TYPE AND TEMPORAL PLACEMENT OF WARNING INSTRUCTIONS

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The present experiments document that warnings about misinformation reduce false memories in the misinformation paradigm, however, the temporal placement of the warning instruction and the type of the warning affect the level of susceptibility to suggestions. A total of 388 participants were shown a video or read a narrative about street mugging and were misinformed about some details of the event. In experiment 1a and 1b participants were warned about

misinformation before encoding, before misinformation, before a final test or were not warned at all. In experiment 2a and 2b the participants were warned prior to encoding and the warning, depending on condition, was short and specific or long and detailed. The results revealed that the warning reduces the misinformation effect, however, in a slightly different manner depending on the format of the original information. When the original information was presented verbally as a narrative, the warning positively affected memory when presented prior to a final test. When the original information was visual the warning reduced the misinformation effect when presented before the final test or before encoding. Furthermore, longer and more detailed instruction did not reduce the misinformation effect as compared to the short instruction. (false memory, warning instruction)

A-0120

EFFECTS OF AGEING ON THE RATE OF VISUAL INFORMATION PROCESSING; A TIME-ACCURACY FUNCTION ANALYSIS

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Age related decline has been observed for a number of different types of processing speed (Salthouse, 2000), including psychophysical processing speed (the speed at which a representation of a physical stimulus can be formed). Although ageing influences speed-accuracy trade-off (Starns & Ratcliff, 2010), rarely have estimates of psychophysical processing speed been derived from studies using a time-accuracy function methodology which are not influenced by speed-accuracy trade-offs. In three experiments a time-accuracy function design was used that required identification of gabor patch orientation after differing amounts of stimulus exposure. Modelling time-accuracy functions enabled estimation of the rate of visual information processing in a task with a single stimulus (Experiment 1), distracting stimuli (Experiment 2) or two stimuli with the target being post cued on stimulus offset (Experiment 3). Older adults displayed deficits in visual information processing, primarily when interfering items were present, suggesting difficulties with inhibiting distracting items and encoding and maintaining multiple distinct object representations.

A-0122

ENCODING STRATEGY EFFECT ON FALSE RECALL AND RECOGNITION IN THE DRM PARADIGM

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The present study investigated memory vulnerability to distortions within the DRM paradigm, which reliably elicits false memories to a non-presented word after studying a list of words associated to this critical lure. Various encoding strategies were used (imagery, whispering, loud speaking, counting, and control) to test their influence on recall and recognition of critical lures and studied words. In recall, the highest rate of false recall and the lowest rate of correct recall were obtained in "counting" condition where the participants were engaged in dual task (memorizing and vowel counting). Using signal detection analyses it

was revealed that true recognition was higher than false recognition only after imagery and loud speaking encoding. In "whispering" and "counting" conditions and in control condition, in which a specific way of encoding had not been suggested, a strong competition between verbatim and gist traces was revealed. "Imagery" and "loud speaking" encoding, due to involving additional codes (i.e., pictorial in the form of a vivid mental image or acoustic -following loud speaking), not only increased true recognition, which proves the access to verbatim traces, but also reduced false recognition which suggests lower susceptibility to gist. The results are discussed in terms of distinctiveness heuristic.

A-0123

WHAT DO TRANSPOSED-LETTER EFFECTS REFLECT?

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Transposed-letter (TL) effects have dominated current research on orthographic processing, but what do they reflect? In this talk we will contrast two very different types of explanation. One is that TL effects reflect positional noise. The other is that over and above effects of positional noise common to all object processing, they also reflect the very nature of the mechanism used to code for letter position information. Evidence for the latter type of theory is provided by experiments examining: 1) TL effects in different kinds of stimuli; 2) the time-course of adjacent and non-adjacent TL effects; and 3) the developmental trajectory of TL effects.

A-0124

IMPROVED SUSTAINED ATTENTION ABILITY IN THE ELDERLY: THE ROLE OF MONITORING PROCESSES

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Monitoring is one of several cognitive control mechanisms that act collectively to maintain sustained attention performance (Sarter & Paolone, 2011). Performance monitoring and especially monitoring of incorrect responses are essential functions for goal-directed behavior. Incorrect responses in reaction time tasks are associated with a negative component of the event-related potential (ERP), the error related negativity (ERN), and a positive component, the error positivity (Pe). Correct responses are followed by a smaller negative component, the correct response negativity (CRN). In order to improve our knowledge on sustained attention ability in elderly (findings in this topic are currently inconsistent), we propose to examine the effects of age on monitoring processes in a situation of sustained attention. Results were obtained from 30 subjects (15 young and 15 old) who performed a 72-minute Go/No-Go task. For analysis, the task was divided into 3 periods of 24 minutes each. Behavioral results (error rates) revealed that older adults maintained stable performance over time, whereas they deteriorated in the younger group. The preliminary ERP results show larger ERN and CRN amplitudes in the elderly compared to the young group, suggesting an increased general monitoring in the elderly all along the task to achieve better sustained attention performance.

A-0125

EVENT-RELATED POTENTIALS REVEAL TASK-RELATED MODULATION OF THE RESPECTIVE CONTRIBUTIONS OF WORD FORM AND MEANING DURING VISUAL SEARCH FOR WORDS

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During visual search for a target word within words, both the visual appearance and meaning of words are taken into account. The attentional sensitization model (Kiefer & Martens, 2010) suggests that perceptual and semantic word processing pathways are differentially sensitized according to search requirements. In this experiment, participants had to identify a target word during serial, foveal presentations of words that could be semantically-related, orthographically-related or unrelated to the target. The target word was given either literally (literal task) or defined by its category (categorical task). Participants always took more time to reject orthographically-related words than unrelated words, whereas semantically-related words were longer to reject only during the categorical task. Frontal ERP showed an early (about 150ms) modulation of word processing according to its relationship with the target and task requirements. For example, in the categorical task, semantically-related words evoked more positive frontal potentials than unrelated words between 150 and 300ms, whereas there was no difference between these potentials in the literal task. In addition, frontal ERP revealed a strong, task-related modulation of word processing between 250 and 400ms. Altogether, the data suggest that the way the target word is defined induces early top-down modulation of word processing.

A-0126

TASK AND AGE DEPENDENT EFFECTS OF VISUAL STIMULUS PROPERTIES ON CHILDREN'S EXPLICIT NUMEROSITY JUDGMENTS

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Researchers investigating numerosity processing manipulate the visual stimulus properties (e.g. surface). This is done to control for the confound between numerosity and its visual properties and should allow the examination of pure number processes. Nevertheless, previous studies showed that visual cues remained to exert their influence on numerosity judgments. This study therefore investigated how these visual properties affect numerosity judgments in different tasks throughout development. Our findings showed a task- and age-dependent influence of the visual stimulus properties on numerosity judgments. This is problematic for studies investigating the development of numerosity processing throughout development. Furthermore, no meaningful relationship between the performance on the comparison and same-different task and mathematics achievement was found. The absence of such a relationship could be due to the strong influence that the visual stimulus manipulations had on children's performance. Together, our results showed that the influence of visual cues can differ between children, change throughout development and depends on the task at hand.

The result that numerosity processing is compromised by the influence of the visual stimulus manipulations shows the necessity for future studies to take these manipulations into account.

A-0127

DO SOCIAL HIERARCHIES MODULATE NEURAL MECHANISMS OF REPETITION SUPPRESSION?

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The ability to infer one's status in a social hierarchy is crucial for successful social interaction. Several studies have shown that viewing a superior individual differentially engaged perceptual-attentional, saliency and cognitive brain systems Zink et al. (2008). In a realistic social environment, Foulsham et al. (2010) showed that, high rank individuals are looked at more often and for longer than low-status targets. We designed an Event Related Potential study where we analyzed how the repetition suppression effect in the N400 can be modulated by the hierarchical status of a speaker. We tested 16 female University Students (mean age= 23.6, std= 2.7). First, we established a hierarchical context through a video game and then we presented a string of auditory Spanish words, with a CVCV structure. Different tokens of the same words were consecutively repeated four times (filler words up to three times). Stimuli could be uttered by a high-rank or a low-rank speaker (as determined in the video game). We observed differences in the suppression of the N400 response as a function of the speaker rank, being stronger for the superior one. This result suggests that the social status of the speaker affects basic mechanisms involved in lexical processing.

A-0128

PUT ON THAT COLOUR, IT FITS YOUR EMOTION: COLOUR APPROPRIATENESS AS A FUNCTION OF EXPRESSED EMOTION

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People readily associate affective meaning to colours. Whereas hue is considered the most salient descriptor of colour and colour-emotion associations, colour brightness has strong affective connotations too, especially of pleasantness. Furthermore, colour appropriateness has been found to depend not only on functional features of an object but also on its perceived affective properties. To test whether such affectively driven colour-matching can be elicited by nonverbally expressed emotion, we investigated whether i) colour hue and brightness are systematically associated with dynamic bodily expressions of positive (joy) or negative (fear) emotions, and ii) expressions of joy are associated with brighter colours than are expressions of fear. Pixels belonging to the expressors' upper body clothing were desaturated to a mid level grey. Results confirmed that colours selected as most appropriate for the joy expressions were brighter than those for the fear expressions. Regarding hue selection, results indicate that

colours along the red-yellow spectrum were deemed more appropriate for joy expressions and blue-ish hues for fear expressions. In an ongoing, extended set of experiments, we are establishing the stability of these findings. If non-verbal emotion expressions elicit stable colour choices, we can conjecture that colour in clothing can be used to communicate emotions.

A-0129

ARE THE FACILITATORY EFFECTS OF COGNATE WORDS REAL? A STUDY WITH PORTUGUESE/ ENGLISH BILINGUAL CHILDREN AND ADULTS

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Most studies focusing on the processing of cognate words have revealed an advantage for these words over noncognates in naming and word-recognition tasks. Several theoretical accounts have been proposed to account for this differential processing. The lexical-morphological proposal developed by Rosa Sánchez-Casas and colleagues (Sánchez-Casas & García-Albea, 2005) claims that cognates are differently processed because they share the same morphological representation in bilingual memory. However, more recent studies with non-identical cognate words (circus in English and circo in Portuguese) that varied in the degree of orthographic and phonological overlap have revealed an effect of inhibition rather than facilitation (Comesaña et al., 2012), a datum that does not fit well with the lexical-morphological hypothesis. Specifically, the effect of inhibition due to phonological overlap was greater when the orthographic similarity of cognates was low. As in the majority of studies the phonological overlap of cognate words was neglected, in the present study we further explore the locus of the cognate effects by manipulating the orthographic and phonological overlap of cognate words. Children and adult bilinguals performed a go-no go task combined with a masked priming paradigm. The results are discussed in the light of the localist connectionist account (Dijkstra et al., 2010).

A-0130

SLOW TO ANGER, QUICK TO FORGIVE: EXPLORING THE IMPLICIT SELF-CONCEPT OF FORGIVENESS

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Traditionally, researchers have subscribed to the belief that forgiveness is a purely decisional process, thereby neglecting the role of automatic, intuitive influences. Recent advancements, however, have consistently shown that forgiveness often depends on implicit (i.e., non-deliberative) processing. We examined the role of automaticity in forgiving a recalled, actual past offence by measuring response time (RT) to state forgiveness ratings. To provide an alternative to self-report, and hence, to foster

a multi-method approach, an implicit association test (IAT) of forgiveness was employed. Implicit (IAT-measured) and explicit (self-reported) forgiveness predicted shorter RTs of state forgiveness ratings. Implicit forgiveness demonstrated high reliability as well as incremental predictive validity over and above explicit forgiveness. Our findings suggest that measuring individual differences in response latencies of state forgiveness ratings are highly informative when examining implicit processes in forgiveness, further corroborating the notion of automatic forgiveness. The newly introduced forgiveness IAT could advance forgiveness research beyond what is known from self-report scales.

A-0131

EFFECTS OF ROLE-PLAY EXPERIENCE ON PRIMARY SCHOOL CHILDREN'S MINDREADING OF PEOPLE WITH RESTRICTED COLOR VISION

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The present study examined the effects of role-play experience on reading the mind of people with restricted color vision. It is normally difficult but very important to understand people with different cognitive styles, including those with restricted color vision. We explored the mechanisms of reading the mind of people with restricted color vision. Forty-one primary school children (mean; 9.4 years old, range; 8-11 years old) were introduced to a color version of the Director Task. In this task, participants respond according to a director's instruction. In the restricted color vision condition, participants saw different colored objects from the director's perspective; thus, participants had to work out the director's intentions according to his/her color vision. Before the test phase, the role-play group participants experienced a role-play in which they enacted the role of a person with restricted color vision. No-role-play group participants made significantly more errors in the restricted color vision condition than in the normal color vision condition, whereas there was no such difference between the conditions among role-play participants. This finding suggests that a role-play experience could activate children's ability for the mindreading of people with restricted color vision.

A-0132

UNDERSTANDING AND EXPRESSING EMOTIONS IN YOUNG CHILDREN; USING VERBAL AND NONVERBAL TASKS.

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It is important to understand and to express emotions in order to communicate with other people and to keep good relationships with them. Though these abilities seem to develop during the preschool period, many previous studies have focused mainly on the children's ability to understand emotions, with very few focusing on their production of emotions. The present study investigated young children's ability to express emotions using a verbal task and two nonverbal tasks (a drawing task and a making facial expression task). Forty-four young children (4-6 years old) participated individually in the study. The experimenter told a story and asked him/her to answer what kind of feeling (happy, sad, angry, fear or surprise)

the protagonist would feel, to draw the protagonist's facial expression on a contour of human face, and to make the same kind of facial expression as that of the protagonist. The result showed that there was a significant correlation between the drawing task and the making facial expression task. This finding suggests that nonverbal tasks can elucidate a different aspect from that in the verbal task and that the drawing task can be a good measure for the ability to express facial expressions in young children.

A-0133

THE NEURAL NETWORK FOR TOOL-RELATED COGNITION: AN ACTIVATION LIKELIHOOD ESTIMATION META-ANALYSIS.

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One of the most intriguing human cognitive functions is the ability to use tools. We can choose a tool from a number of objects and use it without much deliberate thought. However, little is known about how concepts of tools and of their use are represented in the brain. In this presentation, we review the tool-related neural activations reported by a set of neuroimaging studies and perform a series of activation likelihood estimation (ALE) analyses to identify tool-related neural areas dedicated either to task-general or to task-specific processes associated with tools. The results indicate the following: 1) Common, task-general processing regions for tools are located in the left inferior parietal lobule (IPL) and posterior middle temporal gyrus (pMTG), which may code biological and non-biological motions associated with tools, respectively. 2) Task-specific regions were also identified such that producing actions to manipulate tools recruits the superior parietal (IPS, SPL) cortex whereas identification of tools activate the medial occipito-temporal cortex. These two regions correspond to the dorsal "how" or ventral "what" pathway, respectively, according to the classical distinction of visual-processing pathways. The study clarifies the areas contributed to building task-general representation of tools and those implementing task-specific cognitive process associated with tools.

A-0134

SOCIAL PRIMING IMPROVES COGNITIVE CONTROL IN OLD ADULTS—EVIDENCE FROM SIMON TASK

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Aging is related to deficits in inhibitory control. We examined whether social priming of cognitive states affects the inhibitory process in old adults. Three groups of old adults performed a cognitive control task (Simon task), and were then assigned to three different manipulations of social priming (i.e., thinking about an 82 year-old person): 1) Negative—characterized by poor cognitive abilities. 2) Neutral—characterized by acts irrelevant to cognitive

abilities. 3) Positive—excellent cognitive abilities. After the manipulation the Simon task was performed again. Results showed a significant decrease in the magnitude of the Simon and interference effects after the positive manipulation, but not after the neutral and negative manipulations. This suggests a decrease in conflict interference resulting from positive cognitive state priming. Furthermore, a healthy pattern of sequential analysis (Gratton) that was absent before the manipulation in all 3 groups appeared after the positive manipulation. Namely, the Simon effect was only present after congruent but not after incongruent trials for the positive manipulation group. Our study provides evidence that an implicit social concept of a positive cognitive condition in old age affects the inhibitory control process of the elderly and improves cognitive abilities.

A-0135

ARE EXPLICIT REPORTS AND EYE MOVEMENT MEASURES OF MEMORY DISSOCIATED?

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Previous studies have suggested that eye movements can be used as a veridical index of memory. This study examined the relationship between participants' explicit reports on a recognition memory test and their eye movements. After studying 60 Chinese characters, participants received a recognition memory test containing 36 trials. For each trial they had to indicate, among one studied character and two nonstudied homonyms, which character they had studied. Participants' eye movements were monitored while they viewed the three-character display. Experiment 1 showed that participants' viewing time was longer for the endorsed characters than the nonendorsed characters. More importantly, the viewing time for the studied characters was longer than that for the nonstudied characters, regardless whether participants endorsed these characters. Participants in Experiment 2 had to make bets regarding the likelihood that the testing character was studied, by allocating a total of 9 points to each of the three testing characters. The result revealed a significant correlation between the mean point allocated to a test character and its viewing time at some time bins. The current findings are discussed in terms of using the eye movement as a measure of implicit memory and its relationship with other explicit memory measures.

A-0136

DISSOCIABLE NETWORKS CONTROL CONFLICT DURING PERCEPTION AND RESPONSE SELECTION: A TMS STUDY

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Current models of conflict processing propose that cognitive control resolves conflict in the Flanker task by enhancing task-relevant stimulus processing at a perceptual level. However, because conflicts occur at both a perceptual and a response selection level in that task, we tested the hypothesis of conflict-specific control networks for perceptual and response selection conflicts

using transcranial magnetic stimulation (TMS). TMS of the pre-supplementary motor area (pre-SMA) selectively disrupted the processing of response selection conflict, whereas TMS of the posterior intraparietal sulcus/inferior parietal lobule (IPS/IPL) interfered with perceptual conflict processing. In more detail, the pre-SMA seems to resolve response selection conflict mainly when no conflicts have occurred in the previous trial. In contrast, the IPS/IPL may resolve perceptual conflicts selectively when a conflict has occurred in the previous trial. The current data show the need for revising models of cognitive control by providing evidence for the existence of conflict-specific control networks resolving conflict at different processing levels.

A-0137

MEGASTUDIES: THE LATEST ADDITIONS

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In this talk we review the latest developments in the megastudy approach of visual word recognition, focusing on data from the Dutch and English language. First the collection of new data is described (the Dutch Lexicon Projects 2 and 3) and we discuss some findings that make the collection of new data easier and less work intensive, making the approach feasible for other languages and research groups. Then we discuss the contribution of newly collected word variables: Affective ratings, SUBTLEX-UK word frequencies, concreteness ratings, and percentages known. This research shows how gradually but surely we are getting a coherent picture of the factors influencing visual word recognition.

A-0138

COMPARING TWO WAYS OF CONTROL FOR THE VISUAL CUES ON NON-SYMBOLIC NUMEROSITY ESTIMATION TASK

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A major amount of literature indicates that humans convey an approximate number system (ANS) that enables us to process non-symbolic number information in the environment. However, the application of this primary skill includes processing of visual cues as well as numerosity. For instance, estimating the number of people crossing a road not only induce number perception but also perception of visual properties such as size and density. Therefore, researchers manipulate the sensory properties of dots to prevent participants to base their judgments on a single visual property. One way of control involving the total luminance, the total occupied area, the item size, and free area around each item revealed increasing estimates with increasing numerosity (Izard & Dehaene, 2008). In contrast, another way of control involving the convex hull, the aggregate surface of the dots, and density showed that estimates were correlated with the visual cues (Gebuis & Reynvoet, 2012). In the current study, we will directly compare the two designs in adults (within subjects) and we expect to find more near estimates and shorter reaction

times with the first mentioned design. We aim to determine the best stimulus that measures numerosity judgment while visual cue effects are minimized.

A-0139

WHAT CAN SYNAESTHESIA TEACH US ABOUT SOUND SYMBOLISM?

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Sound symbolism is a linguistic device that directly links phonological form to semantic meaning. Sound symbolism can allow speakers to understand the meanings of etymologically unfamiliar foreign words, although the mechanisms are not well understood. We examined whether sound symbolism is mediated by the same types of cross-modal processes that typify synaesthetic experiences. Synaesthesia is an inherited condition in which stimuli (e.g., words) cause additional, unusual cross-modal percepts (e.g., colours). Synaesthesia may be an exaggerated form of normal cross-sensory processing; if so, we may find synaesthesia-like correlates in normal cross-modal processing, such as in sound symbolism. To test this we predicted that synaesthetes may have superior sound symbolic understanding. In our study, 20 grapheme-colour synaesthetes (who experience colours from letters/digits) and 60 non-synaesthete controls were presented with adjectives from 10 unfamiliar languages (e.g., ,avraam' [Tamil]) and were asked to guess each meaning from two choices (e.g., loud/quiet). Both groups showed superior understanding compared to chance, but synaesthetes significantly outperformed controls. This heightened ability suggests that sound symbolism may rely on the type of cross-sensory integration that drives synaesthetes' unusual experiences. It also suggests synaesthesia co-occurs with heightened multisensory skills in domains unrelated to the specific form of synaesthesia.

A-0140

TASK SWITCHING, MODALITY COMPATIBILITY, AND THE SUPRA-MODAL FUNCTION OF EYE MOVEMENTS

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Previous research suggested that specific pairings of stimulus and response modalities (visual-manual and auditory-vocal tasks) lead to better dual-task performance than other pairings (visual-vocal and auditory-manual tasks). In the present task-switching study, we further examined this modality compatibility effect and investigated the role of response modality by additionally studying oculomotor responses as an alternative to manual responses. Interestingly, the switch cost pattern revealed a much stronger modality compatibility effect for groups in which vocal and manual responses were combined as compared to a group involving vocal and oculomotor responses, where the modality compatibility effect was largely abolished. We suggest that in the vocal-manual response groups the modality compatibility effect is based on cross-talk of central processing codes due to preferred

stimulus-response modality processing pathways, whereas the oculomotor response modality may be shielded against cross-talk due to the supra-modal functional importance of visual orientation.

A-0141

CUE-TARGET SIMILARITY MODULATES EXOGENOUS ATTENTIONAL EFFECTS

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Exogenous attention is an involuntary, reflexive orienting response that results in enhanced processing at the attended location. There is evidence to suggest that the properties of an exogenous cue can impact attentional effects. The current experiment was designed to investigate the effects of cue-target similarity in a dual task paradigm. Four random-dot kinematograms (RDKs) were presented, one in each quadrant of the screen. Thirty-four participants were required to simultaneously discriminate colour change and coherent motion direction, in independently selected RDKs. A brief exogenous cue comprised of four dots preceded the target display, and was uninformative as to the upcoming location of either task. The cue was either a colour change cue or a luminance change cue, designed according to visual streams: ventral and dorsal visual streams, respectively. The results show an interaction between cue properties and target stimulus: There was a validity effect for the motion task following both cues, but there was a validity effect for the colour task only following a colour cue, not a luminance cue. Therefore, simple cue-target similarities affect exogenous attentional effects, suggesting that capture is closely tied to within-pathway processes.

A-0143

DIFFERENTIAL USE OF VERBAL CODING BY YOUNG AND OLDER ADULTS IN STATIC AND DYNAMIC VISUAL TASKS

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The study assessed the effect of 'easy' (ETN) and 'hard' (HTN) to name patterns on young (18-25, n=48) and older (60-75, n=48) adult's performance on static and dynamic versions of the Visual Patterns task (VPT). Brown, Forbes and McConnell (2006) produced a modified version of the VPT and found that young and older adults showed lower visual spans in the HTN condition than in the ETN. Do older adults continue to show the effect of nameability in randomised and ordered dynamic versions of the visual patterns task that require serial order recall? Johnson, Logie and Brockmole's (2010) results suggest that older adults would be more likely to continue to use dual-coding than younger adults. Participants from two age groups sat through four conditions (2 static/2 dynamic). Our results indicated an effect of nameability in one, but not both dynamic

conditions. In the static condition, young and older adults showed a benefit from ETN, but this was affected by the type of dynamic task presentation in older adults. This suggests that older adults are more reliant on strategy use to simply maintain performance in visuospatial tasks, whereas strategy use is employed by younger adults to supplement performance when it is of benefit.

A-0144

IMPLICIT TASK SEQUENCE LEARNING

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Implicit task sequence learning (TSL) can be considered as an extension of implicit sequence learning which is typically tested with the classical serial reaction time task (SRTT). By design, in the SRTT there is a correlation between the sequence of stimuli to which participants must attend and the sequence of motor movements/key presses with which participants must respond. The TSL paradigm allows to disentangle this correlation and to separately manipulate the presences/absence of a sequence of tasks, a sequence of responses, and even other streams of information such as stimulus locations or stimulus-response mappings. Here I review the state of TSL research which seems to point at the critical role of the presence of correlated streams of information in implicit sequence learning. On a more general level, I propose that beyond correlated streams of information, a simple statistical learning mechanism may also be involved in implicit sequence learning, and that the relative contribution of these two explanations differ according to task requirements. With this differentiation, conflicting results can be integrated into a coherent framework.

A-0145

REPRESENTATIONAL AND SOCIAL CONSTRAINTS ON SPATIAL PERSPECTIVE-TAKING

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How do social constraints (the conversational partner's viewpoint) and representational constraints (e.g., the speaker's viewpoint, the partners' misalignment, the layout's intrinsic orientation) shape the perspective of speakers' descriptions and the spatial memory representations supporting those descriptions? In collaborative spatial perspective-taking tasks, speakers describing randomly configured layouts used partner-centered spatial expressions (e.g., to your left) more frequently when misaligned by 90° and egocentric ones when misaligned by the oblique 135° (Exp 1). When describing layouts that had a symmetrical structure, speakers used more egocentric expressions when the intrinsic structure was aligned with their own viewpoint, and more partner-centered expressions when it was aligned with their partner (Exp 2). Memory tests preceding descriptions revealed that when the partner's viewpoint was unavailable, speakers encoded layouts egocentrically or according to the layout's intrinsic structure if one was available. When the partner's viewpoint was available, they encoded it in memory, and

even used it as an organizing direction if it was aligned with the layout's intrinsic structure. Altogether, speakers jointly weigh social and representational cues, whether perceptually available or known in advance, to determine how to organize spatial information in memory and how to adapt their descriptions in ways that minimize their collective effort.

A-0146

HOW FLUENCY OF PROCESSING MODULATES SEQUENTIAL CONFLICT ADAPTATION

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Cognitive control enables adaptive behavior in a dynamically changing environment. In this context, one prominent adaptation effect is the sequential conflict adjustment, i.e. the observation of reduced response interference on trials following conflict trials. The objective of the research to be presented here was to show how an affective stimulus feature like perceptual fluency modulates such conflict adaptation effects. Experiment 1 used a flanker interference task, Experiment 2 a color-word Stroop task. Fluency of processing was manipulated in runs of ten trials via stimulus contrast (high vs. low fluency). As hypothesized, significant interactions of conflict-adaptation by fluency of processing emerged: significant conflict adaptation effects were only found in fluent trials but not in disfluent trials. We interpret these results as evidence that the intrinsic reward signal after successful conflict resolution is counteracted by the aversive stimulus characteristics in disfluent trials.

A-0147

DEMAND CHARACTERISTICS IN RESEARCH ON SUBJECTIVE EXPERIENCES OF MEMORY

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The study of déjà vu (DV) and tip-of-the-tongue (TOT) relies almost entirely on self-report of subjective experiences, with the worry this makes it susceptible to demand characteristics (O'Connor & Moulin, 2010). We investigated how the methodology used impacts on the report of an experience in a simple recognition paradigm (where we would not expect DV or TOT to occur). A first study looked at reports of DV during and after a recognition task, with DV reports changing with how participants were asked about it. A second online study compared the effect of repeated questioning on subjective experiences (DV and TOT) and an objectively verifiable phenomenon (stimuli colour). While the number of participants reporting subjective experiences was very high, repeatedly asking whether the words appeared in a colour that was not present in the study had a negligible effect on its report. This suggests there are specific circumstances under which participants become unreliable reviewers of their experiences. A follow up study with the same paradigm demonstrated that reports of real-life experiences of DV and TOT are rated lower on emotionality, intensity and salience than

the experimentally-generated reports. Overall, the three experiments help us better understand the nature of experimentally-generated self-reports.

A-0148

HOW LITERACY ACQUISITION INFLUENCES VISUAL PROCESSING OF FACES AND OBJECTS

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Reading is a cultural invention too recent to involve dedicated genetic or developmental mechanisms.

It has been proposed that reading processes rely on partial recycling of pre-existing brain systems (Neuronal Recycling hypothesis, Dehaene, 2004). This hypothesis is supported by fMRI studies showing that reading acquisition leads to development of a strong response to written materials in the left fusiform gyrus, the „visual word form area“ (VWFA, Cohen et al., 2000; Dehaene & Cohen, 2011), and that learning to read competes with the cortical representation of other visual objects, and particularly faces (Dehaene et al. 2010). This leads to a stronger right-hemispheric lateralization for faces with literacy acquisition (Dehaene et al. 2010).

In this study, we evaluated whether this reorganization of the brain's visual object processing impacts behaviourally the processing of non-linguistic visual stimuli. Three groups of adult illiterates, ex-illiterates and literates were tested with a face and object recognition and memory battery (Facial Expressive Action Stimulus Test, FEAST, Huis in't Veld, Van den Stock, & de Gelder, 2012). This measures diverse aspects of visual processing such as configuration- versus feature-based face and objects processing. Results will be presented at the conference.

A-0149

VENTRAL AND DORSAL STREAM PROCESSES IN VISUAL WORD RECOGNITION IN DYSLEXIA: COMPARISONS BETWEEN DYSLEXICS, POOR READERS AND EXPERT READERS.

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Fluent reading relies on interplay between the ventral and dorsal pathways. Words displayed in a familiar format involve parallel processing in the left ventral stream. In contrast, words displayed in an unfamiliar format are processed serially in the dorsal stream. Impairments of both ventral and dorsal streams have been described in dyslexia. The aim of the present study was to investigate the time course of ventral and dorsal stream processing in a single task of lexical access in dyslexic adults. Dyslexics were compared to controls matched in age and controls matched in reading level. Participants performed a lexical decision task in which the visual format (i.e. horizontal vs. vertical) was manipulated. Event related potentials were recorded at both ventral (P7-P8) and dorsal (P3-P4) sites. When words were displayed horizontally, controls and dyslexics differed in the involvement of the ventral stream. By contrast, the involvement of the dorsal stream was similar in the three groups. When words were displayed vertically, in both

groups of controls, only the dorsal stream was involved, in line with a serial reading strategy. In contrast, in dyslexics, both ventral and dorsal streams were involved, suggesting the use of a different reading strategy.

A-0150

EFFECTS OF AGE AND WORKING MEMORY SPAN ON SUSTAINED ATTENTION ABILITY.

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The cognitive control of attention (involving performance and error monitoring, maintenance of task rules “online”, filtering of distractors, suppression of competitive or prepotent responses) is required for successful performance in sustained attention tasks (Sarter & Paolone, 2011). Weak cognitive control induces attentional lapses and/or vigilance decrement (in a time-on-task perspective). If a growing body of research suggests that older adults show impaired performance in tasks requiring a high degree of cognitive control, the mechanisms that lead to such age-related declines are still under debate: generalized slowing, reduced working memory capacity, inhibitory deficits... In this perspective, our experiment compared sustained attention performance in three age groups (18–30, 40–55, 65–80 years), each divided in two sub-groups of high and low working memory span. We used the sustained attention to response task (SART, Robertson et al, 1997) for 30 minutes and emphasized accuracy (not speed) during task instructions. Behavioral measures (commission errors, post-error slowing) combined with subjective evaluations (the scale of Task-Unrelated Thoughts, the Cognitive Failures Questionnaire) have been recorded to test whether age and working memory span interact on sustained attention ability.

A-0151

THE MEASUREMENT OF WORKING MEMORY CAPACITY THROUGH TIME-CONSTRAINED ELEMENTARY ACTIVITIES

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Working memory (WM) capacity is among the best predictors of fluid intelligence. To measure its capacity, traditional WM span tasks involve complex cognitive activities like reading comprehension or solving arithmetic problems while maintaining memory items (Redick, Unsworth, Kelly & Engle, 2012; Broadway & Engle, 2010). Nonetheless, it has been demonstrated that individual differences in such complex activities are nothing more than the concatenation of small differences in their elementary constituents (Barrouillet, Lépine & Camos, 2008). Consequently, it can be expected that span tasks involving elementary processes should be as good of predictors of fluid intelligence (Gf) as traditional tasks. This hypothesis was tested via confirmatory factor analyses using three traditional tasks, three span tasks involving time-constrained elementary activities and three non-verbal reasoning tasks. Latent variables issued from each

category of WM tasks were similarly correlated with the Gf factor. Finally, a model with a single unitary WM factor had a fit as good as the model with two distinct WM factors. We conclude that in the measurement of WM capacity time-constrained elementary activities can be substituted to complex activities in WM span tasks, allowing better adaptability to constraints in experimental settings and designs, or specificities of the population under study.

A-0152

REMOVAL OF INFORMATION FROM WORKING MEMORY

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Standard working memory (WM) updating tasks confound updating requirements with generic WM functions. We introduce a method for isolating a process unique to WM updating, namely the removal of no-longer relevant information. In a modified version of an established updating paradigm, to-be-updated items were cued before the new memoranda were presented. Longer cue-stimulus intervals—that is, longer removal time—led to faster updating, showing that people can actively remove information from WM. Well-established effects of item repetition and similarity on updating RTs were diminished with longer removal time, arguably because representational overlap between out-dated and new information becomes less influential when out-dated information can be removed prior to new encoding. The benefit of removal time was found only for partial updating, not for complete updating of entire memory sets. We conclude that removal of out-dated information can be experimentally isolated, and that removal is a unique, active WM updating process.

A-0153

THE EFFECT OF PHONOLOGICAL SIMILARITY AND ARTICULATORY SUPPRESSION ON SERIAL RECALL: A TEST OF THE SOB-CS MODEL

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Immediate serial recall of verbal lists is impaired when list items are phonologically similar to each other. This phonological-similarity effect is abolished under articulatory suppression. These two findings constitute a central piece of support for the phonological-loop model (Baddeley, 1986). Both findings can also be explained by an alternative model, SOB-CS (Oberauer, Lewandowsky, Farrell, Jarrold, & Greaves, 2012). The SOB-Cs model makes additional predictions that differ from those of the phonological-loop model: Phonological similarity has a detrimental effect on order memory but a beneficial effect on item memory. Both effects occur also under articulatory suppression. Articulatory suppression adds interference from irrelevant material, which impairs item memory more than order memory. As a consequence, the beneficial effect of similarity contributes more strongly to correct list recall under articulatory suppression, thereby abolishing the similarity effect on list-recall accuracy. Two experiments confirm the predictions of SOB-CS and contradict those of the phonological-loop model.

A-0154

HOW DOES LITERACY SHAPE LETTER PROCESSING?

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Letter position coding is crucial for efficient visual word recognition. Recent research has shown that the development of the mechanisms associated with letter position coding in children follows a somewhat unexpected trajectory, showing relatively small effects at the beginning of the reading acquisition process that immediately increase after minimal exposure to print, and that decrease gradually over time after this initial maximum. In this talk we will present data from two sets of experiments. In the first set of experiments we investigated the developmental trajectory of transposed-letter effects in further detail (as a marker of letter position coding). We found a progressive decrease in the magnitude of the transposed-letter effects as reading skill improves. In the second set of experiments we tested illiterate and literate adults to investigate the origin of this marker of letter position coding. While the transposed-letter effect was significant for the group of literates, illiterates showed negligible effects. These results suggest that letter position coding is an acquired process. We conclude that orthographic processing requires a specific type of visual analysis of two-dimensional sequences of elements that is absent in non-readers.

A-0155

IS STRATEGIC CONTROL IMPAIRED UNDER STRESS: EVIDENCE FROM THE STROOP EFFECT

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The ability to attend selectively to the task-relevant aspect of the stimulus is indispensable for adaptation and survival. Selectivity is particularly needed when people act under stress. In the current study, we employed the Stroop effect, psychology's "gold standard" of selectivity, testing performance under high- and low-stress. The unique feature of our study was the manipulation of contextual factors known to influence the Stroop effect. We focused particularly on color-word contingency, produced by the proportion of congruent stimuli in the list. It is well documented that the Stroop effect increases with the proportion of congruent stimuli, an effect typically interpreted as tapping strategic control in this task. Does stress impair strategic control? Does the effect of proportion congruent stimuli on the Stroop effect evaporate under stress? The results documented similar action of contextual factors under the high- and low-stress, in particular that of proportion congruency. We conclude that stress did not affect the way that proportion congruence shaped the Stroop effect. However, our conclusion is tentative given the small effect of stress in the current study.

A-0156

CONTEXTUAL FACTORS AFFECT THE SELECTIVITY OF ATTENTION: THE ROLE OF BASE RATE AND CORRELATION IN DETERMINING GARNER INTERFERENCE

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Each activity of everyday life requires some ability to attend selectively to certain features in the environment, excluding other irrelevant or distractive features. One classic measure that tests the human ability at selective attention is the Stroop task. However, the Stroop effect can be calculated only for a certain classes of stimuli, which entail agreement or conflict between the constituted dimensions. Another 'gold standard' of selectivity, Garner interference, is applicable to all classes of stimuli. In the present study, we calculated Garner interference to test selective attention to the color of colored shapes stimuli. The unique feature of our study was the joint manipulation of color-shape correlation and the base rate at which each attribute was presented. We found that these contextual factors affected the selectivity of attention as gauged by Garner interference. In particular, selective attention was sensitive to the a priori probability of a given attribute. These results extend into the domain of selective attention and speeded responding related results from the psychology of decision ad judgment. The finding that speeded attention is as sensitive as non speeded judgment to environmental factors related to base frequency of occurrence is consequential for theory and everyday life alike.

A-0157

ACTIVATION AND INHIBITION PROCESSES IN BILINGUALS

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A recurrent focus in Rosa's research was how morphology modulates language processing in monolingual and bilingual contexts. In our studies, we used morphological features of L1 and L2 languages to study activation and inhibition processes in bilinguals. Inhibition has been proposed as a candidate mechanism for language control (Green, 1998). In the present investigation we try to explore under which conditions language control is achieved by means of inhibitory mechanisms that suppress activation of the non-target language. We discuss evidence suggesting that bilinguals trigger inhibitory control during comprehension and production by manipulating language features that permit to assess both activation and inhibition of the non intended language (interlingual homograph, gender congruency, cognates, etc.). In addition, we also show data that indicate that the type of process used to achieve language selection depends on the bilinguals' language experience. Thus, our data suggests that inhibitory control seems to depend on a number of factors that include L2 fluency, immersion in L2 and training in translation.

References

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A-0158

CONTEXT-SENSITIVE ADJUSTMENT OF COGNITIVE CONTROL IN DUAL-TASK PERFORMANCE

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Performing two highly similar tasks at the same time requires an adaptive regulation of cognitive control to shield prioritized primary task processing from between-task (crosstalk) interference caused by secondary task processing. In the present study the authors investigated how implicitly and explicitly delivered information promote the flexible online adjustment of task shielding in dual-task performance. Context-specific implicit activation of cognitive control was implemented by location-dependent manipulations of the likelihood of between-task interference (i.e., locations containing high vs. low proportions of between-task interference trials). Following practice, between-task interference was reduced in a subsequent test session for locations associated with high (compared to locations with low) task shielding demands, indicating that the cognitive system can register and utilize implicit context-features (Experiments 1 and 2). In Experiments 3, cues were used that provided additional explicit top-down information. Whereas cues, validly indicating the interference level in the next trial failed to further optimize context-specific task shielding, cues indicating the location of subsequent stimulus presentation resulted in an instant adjustment of task shielding also in the first part of the experiment. Results highlight the role of implicit and explicit context-information in the flexible adjustment of task shielding control settings in dual-task performance.

A-0159

INDIVIDUAL DIFFERENCES IN FILTERING EFFICIENCY AND RESISTANCE TO ATTENTION CAPTURE

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Recent research on individual differences in working memory capacity suggests that performance differences in complex tasks, such as distractor filtering, are associated with the susceptibility to attention capture. For example, high-capacity individuals perform better in inhibiting the initiation of a reflexive saccade or ignoring salient but irrelevant information. However, the exact mechanism of this so-called attention control (e.g. disengagement or reengagement) is still unclear. In order to disentangle storage and processing, and to allocate the unique and combined impact on attention control, we underwent a battery of visual working memory tests along with attention tasks. In a spatial-cueing procedure, we compared the ability to disengage and reengage attention at an early and later stage of processing. We observed equivalent disengagement costs at any time course of processing

regardless of the individuals distractor filtering capacity, but at an early stage individuals worse in distractor-filtering couldn't benefit from valid cue trials. Surprisingly, individual differences in performing complex tasks seem only to be partially associated with attention control in terms of disengagement.

A-0160

THE ROLE OF INTENT IN MORAL JUDGEMENTS OF PURITY AND HARM VIOLATIONS

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We report the results of two experiments that test the role of intent in judgements of the moral responsibility of an individual for violations of moral principles of purity and harm. Participants read scenarios that resulted in harm violations, e.g., about an individual who cooked a meal for another person who is allergic to peanuts and added peanuts to the dish; or purity violations, e.g., about an individual who cooked meat for dinner and the meat came from their dog. The violations were described as having occurred accidentally or intentionally. Participants judged intentional violations to be more morally wrong than accidental ones, for both harm and purity violations, and their judgements of moral responsibility followed the same pattern. They created more counterfactual thoughts about accidental violations than intentional ones, and they judged that the actor would feel more shame and guilt for accidental violations than intentional ones. Guilt was also more strongly associated with harm than purity violations. We discuss the implications of the findings for recent research on the role of intent in different moral domains.

A-0161

THE EFFECTS OF ALCOHOL ON TEMPORAL EVENT PREDICTION

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Alcohol is one of the most widely consumed psychoactive substances in the world and a subject of intensive investigation. However, there are no studies investigating whether and how alcohol effects on temporal event prediction. In the present study, we evaluated the influence of a moderate dose of alcohol on temporal event prediction, using a variable foreperiod paradigm mimicking a computer game. 20 healthy volunteers, aged between 20 and 35 years participated. We found that participants formed specific temporal expectations irrespective of whether alcohol was administered or not. After learning temporal event predictability, participants transferred their expectancy to a new pair of foreperiods, according to relative foreperiod duration. This means, the event previously correlated with the shorter foreperiod was still expected at the shorter one of the new pair of foreperiods. However, after moderate alcohol administration, transfer was impaired suggesting that alcohol affects transfer of relative timing. Results are discussed within the context of the neuromodulatory effects of alcohol.

A-0162

ASYMMETRIES IN AUTOMATIC DETECTION OF VIOLATED REGULARITIES IN VISION

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Visual mismatch negativity (vMMN) is elicited by stimuli violating the sequential regularities of visual events. VMMN is elicited by deviant stimulus features (color, orientation, movement direction, etc.), but also by more complex regularities (e. g. conjunction of features, emotional expressions), even if the stimuli are non-attended. Here we report the results of studies showing that (1) without the acquisition of a perceptual category no vMMN appears to deviant stimuli. Random patterns within a sequence of symmetric ones elicited vMMN, but vMMN did not emerge to symmetric patterns within the sequence of random pattern (unlike symmetry, ‘randomness’ does not acquire a category); (2) Q-shape deviants within the context of O stimuli elicited vMMN, but no vMMN appeared in the reverse situation. This result is comparable to the search asymmetry findings of attention research. We argue that this relationship is more than a superficial similarity. (3) Another set of stimuli, N vs. V also elicits search asymmetry and vMMN asymmetry, but in this case the direction of asymmetry is just the opposite in the two paradigms. However, this apparent controvert is resolved by comparing the VMMN and visual search paradigms.

A-0163

HIGHER-ORDER SOCIAL COGNITION INFLUENCES EARLY MECHANISMS OF PERCEPTUAL SELECTION. AN EEG STUDY

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In a series of studies, we examined the impact of higher-order social cognition on early mechanisms of perceptual selection. With the use of a gaze-cueing paradigm, we manipulated participants’ beliefs about the gazer: gaze behavior was believed to result either from operations of a mind or from a machine. In Experiment 1, beliefs were manipulated by cue identity (human or robot), whereas in Experiment 2, cue identity (robot) remained identical across conditions, and beliefs were manipulated solely via instruction, which was irrelevant to the task. ERP results and behavior showed that participants’ attention was guided by gaze, but only when gaze was believed to be controlled by a human. Specifically, the P1 was more enhanced for validly cued, relative to invalidly cued, trials only when participants believed the gaze behavior was the result of a mind, rather than of a machine. This shows that early mechanisms of perceptual selection can be influenced by higher-order (task-irrelevant) beliefs about the observed scene. We propose a new model of social attention: the Intentional Stance Model (ISM), which conceptualizes social cognition’s influence on the early mechanisms of perceptual selection within the predictive-coding framework (Friston, K., 2005. *Philos T Roy Soc B* 360:815–836).

A-0164

RESPONSE INHIBITION IN ADHD ADULTS STUDY BY USING RT DISTRIBUTION ANALYSIS AND ELECTROMYOGRAPHIC ACTIVITY.

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Several theoretical models suggest that the core deficit in children with Attention Deficit Hyperactivity Disorder (ADHD) relies on response inhibition. However, research concerning the persistence of this deficit in adulthood is lacking.

In this study we evaluated performance obtained by adults with ADHD and healthy adults in a Simon Reaction Time (RT) task.

The ability to inhibit inappropriate responses elicited by irrelevant information was evaluated through two additional indexes: 1/ the analysis of RT and accuracy distribution, and 2/ The analysis of electromyographic activity (EMG), which provided the possibility to identify partial errors (subthreshold EMG burst associated with incorrect response and preceding the correct one).

The classic analysis of mean RT indicated a larger interference effect in adults with ADHD suggesting difficulties in inhibiting the automatic activation produced by the non relevant stimulus. However, in contrast, RT distribution analysis and analysis of partial errors revealed that the ability to inhibit the automatic response remains intact in these patients. In conclusion, further considerations concerning core deficit in adults with ADHD are discussed.

A-0165

FREE WILL : NOT EVERYBODY IS EQUAL

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The seminal study of Libet offers a strong challenge to our notion of free will. In this study, participants, whose brain activity is recorded through EEG, first make a voluntary movement and then report the moment when they felt the urge to move. Libet found that conscious intention unsurprisingly precedes action by about 200 msec. Crucially, relevant neural activity precedes conscious intention by about 350 msec, suggesting that the experience of intention is a mere epiphenomenon. Conscious intention is thus not the cause of the action, but merely its consequence. Libet proposed to rescue free will by suggesting that this state of affairs still leaves the possibility for consciousness to veto the unfolding action (“free won’t”). The Libet paradigm has attracted considerable criticism, however: the method used to collect subjective reports is questionable; results are quite variable, etc. Here, beyond these external factors, we explore another possible source of such variability: Factors internal to individuals, namely their personality traits. We hypothesized that free will is variable across individuals. Hundred participants performed the Libet task and answered questionnaires. Results obtained shown that personality plays a role in variability, suggesting that people differ in how they experience and report on voluntary movements.

A-0166

DIVIDED ATTENTION CAN ENHANCE MEMORY ENCODING: THE ATTENTIONAL BOOST EFFECT IN IMPLICIT MEMORY.

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Divided attention at encoding has long been known to disrupt later memory performance. Contrary to this long-standing result, the present study shows that detecting an infrequent target in a dual-task paradigm actually improves memory encoding for a concurrently presented word (the attentional boost effect). In the case of explicit recognition, the facilitation was relative, bringing accuracy in the divided attention condition up to the level reached in the full attention condition. On the other hand, an absolute facilitation was obtained in two perceptual implicit tasks (lexical decision and word fragment completion), with performance in the divided-attention condition exceeding the level observed in the full-attention condition. These findings follow from the hypothesis that the attentional boost effect reflects enhanced visual encoding of the study stimulus consequent to the transient orienting response to the dual-task target. The contrast between relative and absolute facilitation was due to the lower negative effect of divided attention on implicit memory.

A-0167

ADAPTATION TO UNCONSCIOUS CONFLICTS IN UNCONSCIOUS CONTEXTS

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We investigated how context-specific conflict adaptation depends on both awareness of the conflict and awareness of the context, and how timing of conflict and context is crucial. In Experiment 1, we used a priming paradigm in which the visibility of the prime was varied and the format of the target represented a context of either low interference (20% incongruent trials) or high interference (80% incongruent trials). By implementing inducing trials and test trials, we controlled for mechanisms of event learning. With visible primes, congruency effects were larger in the low-interference context than in the high-interference context. With masked primes, however, congruency effects were not modulated by the context. In Experiment 2, the format of the prime represented the context. Thus, with masked primes, both conflicting stimulus and context were presented unconsciously. Interestingly, context-specific conflict adaptation processes were now observed regardless of prime visibility. Even with masked primes, congruency effects were larger in the low-interference context than in the high-interference context. This indicates that context-specific conflict adaptation processes are able to operate independently of both conflict awareness and context awareness, but that a simultaneous occurrence of context and conflicting stimulus is crucial.

A-0168

SELF-GENERATED SOUNDS AND THEIR OMISSIONS: A WINDOW INTO THE NEURAL CODE OF SENSORY PREDICTIONS

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Sensory stimulation resulting from our own motor acts receives special treatment in the brain. The evidence suggests that the human brain actively predicts the immediate sensory consequences of motor commands, and the comparison between predicted and received sensory stimulation causes various effects on sensory processing of self-generated stimuli. However, little is known of the neural substrate of this comparison process. Moreover, despite predictive processing is viewed as a general principle in brain function, the representational code of prediction remains elusive. To unravel the neural code of automatic sensory predictions, in a series of experiments, we have studied brain responses elicited when a self-generated sound is unexpectedly omitted. ERP and fMRI results show that when button presses consistently produce a sound, the button press alone elicits early responses in auditory cortex. I will argue that motor acts trigger a pre-activation of the neural sensory representation of their predicted consequences. Hence, this pre-activation can only take place when the motor act can predict with confidence the specific physical characteristics of the stimulus it will trigger. Moreover, I will show that unexpected omissions elicit prediction error signals (N2 and P3) also only when specific predictions can be formulated.

A-0169

DISSOCIATING PERCEPTUAL AND CONCEPTUAL PROCESSES IN SCHIZOPHRENIA: FURTHER EVIDENCE FROM IDENTIFICATION IMPLICIT TASKS.

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Previous studies examining implicit memory in schizophrenic patients reported a dissociation between perceptually-based tasks (e.g., word-fragment completion; intact repetition priming) and conceptually-based tasks (e.g., category exemplar generation; reduced priming). In the present two experiments, we investigated whether this dissociation held with identification tasks, which are based on reaction times and thus provide purer measures of implicit memory. To this purpose, we compared repetition priming in lexical decision (a perceptual identification task) and category verification (a conceptual identification task) between 20 schizophrenics patients and 20 healthy controls. For lexical decision, the magnitude of repetition priming was comparable in the two groups. In contrast, for category verification, priming was significant in healthy controls, but not in schizophrenic patients. The present results confirm and extend previous evidence indicating that schizophrenia is associated with an impairment of those implicit processes which require the activation of prefrontal cortex (as opposed to processes primarily based on the activation of posterior cortex).

A-0170

CODING OF SERIAL ORDER IN VERBAL WORKING MEMORY IS SUPPORTED BY ORDINAL REPRESENTATIONS SHARED WITH NUMERICAL COGNITION

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While numerous models of serial order coding in verbal working memory (WM) exist, the nature of serial order representations remains debated. This set of studies explored the hypothesis that serial order WM is supported by ordinal representations shared with numerical cognition. A first experiment explored the neural correlates of serial position distance effects during a WM order probe recognition task and of ordinal distance effects during a numerical judgment task using fMRI. Activation responded parametrically in the bilateral intraparietal sulcus as a function of both serial position and numerical ordinal distances. In a developmental study in 5-6 year-old children, we determined the association between ordinal coding in a WM reconstruction task and a numerical judgment task. The precision of ordinal coding in the number judgment task predicted the precision of serial position errors in the WM task one year later. In a final study in 6-7 year-old children, the precision of ordinal coding in a WM task predicted phoneme ordering errors during a novel word learning task. These results suggest that serial order WM is based on ordinal coding processes shared with numerical cognition, and these processes support the well-established link between WM and language learning.

A-0171

READING AND SEARCHING ON WEB PAGES WITH ADVERTISEMENTS: THE IMPACT OF DISTANCE AND ANIMATION ON VISUAL STRATEGIES

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The economic model of the Internet is based on advertising which is more and more disrupting for people surfing the Web (e.g. pop-up, flash ads). The objective of our research was to assess the impact of online advertisements on visual strategies for two reading tasks. We focused on two features of advertisements: the position in the page and the animation.

We recorded participants' eye movements doing two different tasks: searching for a target-word (Scanning task) or reading the text in order to give it a title afterward (Rauding task). We built 24 Web pages containing a main menu on the top, a menu on the left and a central text extracted from newspapers websites. The ad was on the right side of the page at 0px, 40px or 80px from the end of the lines and was either dynamic or static.

The results showed that the animation of the advertisement impacts differently according to the task: dynamic ads seem more disrupting when people are scanning a text and static ads seem to have more influence on reading. Moreover, fixation durations indicate that the closer ads slowed down information processing. However, there is no difference between the 40px and 80px conditions.

A-0172

THE RESTLESS MIND WHILE DRIVING: WHAT ABOUT DRIVER'S THOUGHTS BEHIND THE WHEEL?

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About 25% of car crashes would be the consequence of driver's inattention. One of the sources of inattention is "mind-wandering" (MW) consisting in thinking to unrelated -task thoughts. According to literature, MW would be sensitive to individual and contextual characteristics. Moreover, it seems to have an impact on the on-going task. Present study investigated these issues, using an alternative off-line probe method which consisted in asking drivers to fill a questionnaire just after their last trip. It started by biographical and contextual trip information. In the following part, participants had to describe their off-task thoughts. Finally, the last part was dedicated to the self-estimation of the impact of MW on the driving task. MW affected 85.2% of the drivers, who spent 34.74% of their trip in MW. No biographical characteristics, but some contextual characteristics (to be alone in car, in monotonous road, etc...) had significant link with MW. Reported off-task thoughts were principally of neutral valence, present to future-oriented, and related to private concerns. Finally, the few number of drivers who estimated that MW impaired their driving performance, noticed degradation of their environmental scanning.

A-0173

EARLY CHILDHOOD LANGUAGE EXPOSURE SHAPES AUDITORY TEMPORAL ATTENTIONAL SKILLS IN ADULTHOOD

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We measured auditory stream segregation ability in 14 Welsh-English bilingual adults and 14 English monolinguals presented with sequences of high- and low-pitch tones alternating at various speeds by varying stimulus onset asynchronies (SOAs). Bilinguals started to segregate the tone sequence into two simultaneous high- and low-pitch streams for SOAs at which monolinguals continued to perceive a single stream composed of alternating individual high- and low-pitched sounds. This result shows that Welsh-English bilinguals require longer SOAs than monolinguals to perceive successive tones as separate suggesting slower automatic auditory attentional shifting is in bilinguals. Interestingly, we found no group difference in an analogous visual task, and the auditory group difference was exclusively driven by the bilingual participants who had been exposed to the two languages from birth (simultaneous early bilinguals). We interpret such effects in relation to differences in lexical stress distribution between Welsh and English and conclude that perceptual attentional mechanisms underlying auditory scene analysis are influenced by the nature of the linguistic rhythmic input provided during the first years of life.

A-0174

READING COMPREHENSION AND WM'S EXECUTIVE PROCESSES IN 3 TH GRADE PRIMARY STUDENTS

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Reading comprehension is a highly demanding task that involves the simultaneous process of extracting and constructing meaning in which working memory plays a crucial role. Reading comprehension skills have been linked to WM's executive processes such as semantic updating, connecting and integrating information, and inhibiting irrelevant information. The aim of this paper was to examine the capacity of WM's executive processes to predict reading comprehension in a sample of 77 third-grade Primary students. We used a Spanish version of the Diagnostic Assessment of Reading Comprehension (DARC) that scores four main components: prior knowledge, text memory, inferences, and integration. To measure WM's executive processes we used three new tests: the Analogy test in which participants are asked to read out loud and solve a series of verbal analogies and then to recall the word-solution of each analogy; the Semantic Updating test, in which participants are required to select and remember a limited number of the biggest elements that were named in a word list, while suppressing the rest of elements; and a Visuo-spatial test. Multiple regression results confirmed the role of WM's executive processes, particularly, semantic updating and inhibition, in the explanation of the main components of reading comprehension.

A-0175

MEMORY AND THE DYNAMIC SELF: RESTRUCTURING OF THE SELF FOLLOWING NOSTALGIC REVERIE

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This study examined self-concept, and the relationship between self-concept and memory, using a novel version of the 'I am' memory task (Rathbone, Moulin & Conway, 2008). It was of particular interest to determine whether reflecting on a self-relevant, nostalgic memory would impact on generating self-concept statements. The accessibility, valence, strength and quality of participants' self-concept were also examined. In a between subjects design participants wrote a description of either a nostalgic memory or a control topic (solar system), following which they were given 60 seconds to generate as many self-defining statements as possible, each beginning with the phrase 'I am'. Participants in the nostalgia condition were able to generate significantly more statements than those in the control condition, suggesting that having a nostalgic memory increased accessibility to self-concepts. The type of statement generated also varied following retrieval of a self-relevant memory. Participants in the nostalgia condition were more likely to generate psychological, trait-like descriptions, whereas those in the control condition generated proportionately more social and physical self-

concept statements. Findings support the idea that the self is reconstructive in relation to memories and promote the effectiveness of this novel task in exploring the dynamic nature of the working self.

A-0176

INFANTS LEARN FUNCTIONS OF NOVEL TOOLS FROM THE OUTCOMES OF INSTRUMENTAL DEMONSTRATIONS

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Tool-kinds are conceptualized through tool function – an unobservable abstract feature, whose relations to the available structural and behavioral information (e.g., to observable physical features or manners of use) are often cognitively opaque. It has been argued that one function of infants' goal-attribution is to support early social learning of tool functions from instrumental actions and demonstrations, despite the cognitive opacity of tools. The current series of studies provides a direct empirical test of this hypothesis. Using a violation-of-expectations paradigm, we show that 13.5-months-old infants map arbitrary outcomes of goal-directed actions to the particular novel tools employed to bring them about, even when different tools are operated in the same manner and their physical features provide no cues to the functions. These tool-outcome mappings were not formed if the very same end-states of action sequences could not be interpreted as the outcomes of goal-directed tool-use. We also found that the tool-outcome mappings acquired from infant-directed communicative demonstrations were more resilient to counter-evidence than those acquired from non-infant-directed demonstrations, suggesting that they received generic rather than episodic interpretation. Altogether, these results suggest that infants can rely on attributed goals to start learning about functions for tool-kinds.

A-0177

DYSLEXIC READERS AND SACCADE COMPUTATION: EFFECTS OF READING EXPOSURE AND VISUO-PERCEPTUAL CONSTRAINTS

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Some findings suggest the presence of preferred landing position (PLP) effects in children who are learning to read. Recently it has been shown that, in children from first to fifth grade, stimulus location has a strong effect on oculomotor development and lexical-decision time, in both central and parafoveal vision (Ducrot et al., 2013). The establishment of the PLP, which seems to be due to an eye-guiding mechanism based on a perceptual low-level processing, could also be influenced by print exposure. How does saccadic programming develop in children with

reading impairment? We assessed the eye movements of three groups of children: dyslexic readers, unimpaired reading-level controls, and unimpaired chronological-age controls, using a lateralized bisection task (participants were asked to move their eyes to a position they thought to be the middle of the stimulus, Ducrot & Pynte, 2002). The type of stimulus - linguistic factor (words vs non-linguistic stimuli) and discreteness (lines vs strings of hashes) - in combination with the stimulus presentation side (left vs. right) were manipulated. If reading exposure influences saccadic programming we should expect different PLP pattern for normal readers and for dyslexics. Results are discussed with respect to current theories of developmental dyslexia.

A-0180

SELF-HELP MEMORY INTERVENTION: ANALYSIS ON SPECIFIC AND TRANSFER EFFECTS IN COMMUNITY DWELLING AND REST-HOME RESIDENT OLDER ADULTS

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The present research is aimed to investigate the effects of a self-help training approach in producing memory improvements and transfer effects in community dwelling and rest-home resident older adults. Given the success of our previous memory training focused on teaching older adults about basic principles of memory and how to use them to adapt strategies to any given memory task (Bottiroli et al., 2013), we decided to evaluate its efficacy in a self-help training version. In this intervention participants were instructed to use a manual to learn metacognitive principles and two memory strategies. Two studies were realized in order to evaluate the efficacy of this approach in older adults being community dwelling (Study 1) or living in rest homes (Study 2). Participants in both studies were evaluated in a series of memory tasks, which were trained (with practice), analysed (only instructions on how to use the strategies on new material, without practice) and transfer. In both studies, results showed improvements not only in the trained tasks, but also in those analyzed and, most important, in those used in order to evaluate transfer effects. Such findings provides evidence of the efficacy of a self-help approach in both populations of older adults.

A-0181

A UNIFIED DESCRIPTION OF AUDITORY DEVIANCE DETECTION AND AUDITORY STREAM SEGREGATION

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Two of the most important goals of sensory information processing are to discover the distal causes (objects) of sensory information and to detect potentially important events in the environment. In the auditory modality, these two functions were studied separately within the framework of auditory scene analysis and deviance/target detection, respectively. Noting that both functions relate incoming information to what is already known about the environment we propose that object representation and deviance detection rely on common generative models. These models predict upcoming sounds on the basis of representations describing temporal/sequential regularities. Predictions help to identify the continuation of the acoustic signals from previously discovered sound sources, thus allowing the brain to detect the emergence of new sources as well as changes in the behavior of the known ones. Based on experimental evidence from psychology and cognitive neuroscience, here we describe a theoretical framework for auditory object formation in the form of a conceptual model, termed the Auditory Event Representation System (AERS). AERS produces auditory event representations which provide a full sensory description of the sounds, including their relation to the auditory context. Event representations can be consciously perceived and serve as objects in various cognitive operations.

A-0182

SERIAL OR PARALLEL PROCESSING IN CROSSMODAL ACTION?

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Dual-task performance has usually been investigated utilizing an experimental setup in which task overlap is manipulated by varying the onset interval between two stimuli. The typical finding that response times of the second task increase for large task overlap is typically interpreted as evidence for serial processing resulting from a bottleneck at the selection stage. However, sequential stimulus presentation might inherently induce a serial processing strategy, thus not reflecting a generic cognitive mechanism. In the present study participants executed responses towards a single auditory stimulus in single-task and dual-task conditions. To vary task overlap selection stage duration was manipulated utilizing specific S-R compatibility conditions: While one half of the participants responded spatially compatible in task A (e.g., saccade) and incompatible in task B (e.g., vocal response), the other half responded with inverted mappings. We conducted 3 Experiments using pairwise combination of saccades, manual responses, and vocal responses. The comparison of single- and dual-task conditions across experiments revealed that dual-task costs were not generally affected by task overlap, indicating limitations of basic response selection bottleneck accounts.

A-0183

ARE ANIMATES BETTER REMEMBERED THAN INANIMATES?

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In three experiments, we showed that animate entities are better remembered than inanimate entities. In Experiment 1, words denoting animate items were better recalled than words denoting inanimate items. Experiment 2 replicated this finding with the use of pictures instead of words. In Experiment 3, we found that animate words were better recognized than inanimate words. Importantly, we also showed that the recall rate of „Remember” responses were higher than that of „Know” responses for animates whereas the recall was equivalent for both responses for inanimate items. This latter finding suggests that animacy property enhances not only the quantity but also the quality of memory trace by the recall of contextual details of previous experiences (i.e. episodic memory). Finally, in Experiment 4, we tested whether part of the animacy effect was due to animate items being richer in terms of sensory/perceptual features than inanimate items. The findings provide further evidence for a functionalist view of memory championed by Nairne and coworkers (Nairne, 2010; Nairne & Pandeirada, 2010).

A-0184

PROCESSING AND MENTAL REPRESENTATIONS OF FRACTIONS

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Why is it so hard for pupils to understand fractions? How are fractions processed and mentally represented? We tackled these questions through a multi-pronged approach. In a first study, adults carried out matching and comparison tasks. Results showed that fractions processing depends on experimental conditions. We also investigated the development of mental representations of fractions. 5th, 6th and 7th-graders were tested with the same paradigms. Results showed that 5th-graders do not rely on representations of the magnitude of fractions in the comparison task, but those representations progressively develop from grade 6. In another study, we identified difficulties encountered by primary school pupils. Most 4th and 5th-graders had a limited notion of the meaning of fractions, basically referring to pieces of cake or pizza. Fractions as a notation for numbers appeared particularly hard to grasp. Building upon these results, we designed an intervention based on games in which children had to estimate and compare fractions. The intervention led to improvement in conceptual understanding of fractions. In sum, by combining different approaches, we hope to have improved understanding of fraction processing, while helping teachers get a better grasp of pupils’ difficulties and develop classroom activities that suit the needs of learners.

A-0185

IMPROVING NUMBER REPRESENTATIONS AND MATH PERFORMANCE THROUGH SIMPLE ARITHMETICAL TRAINING: A BEHAVIORAL AND FMRI STUDY

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Numbers are represented meaningfully in the brain, yet fluency in mathematics has previously been conceptualized as the result of drilled-based training that emphasizes the memorization of single-digit “math facts” to create verbal codes that can support efficient computation. This study investigates an alternative hypothesis: that increased skill can emerge from a drill-based training program that improves basic representations of number in the brain. A training program was designed to give extensive practice with multi-digit computation and was shaped by a neuroscience view of the brain systems that contribute to practice-based representational change. Training consisted of 5 one-hour sessions in which participants solved double-digit addition and subtraction problems. A control group was trained to simply type numbers, controlling for mere exposure to numbers and practice with keypad entry. Complex mathematical skills, a behavioral number comparison task and an imaging task involving adaptation to a range of numbers were tested before and after training. Across behavioral and imaging measures of representational change, evidence of more finely tuned numerical representation was found for Arithmetic, but not for Control participants. These changes were also found to be associated with improved mathematical performance. We argue that double-digit analog number representations were fine-tuned following training.

A-0186

DOES THE THOUGHT OF DEATH CONTRIBUTE TO THE MEMORY BENEFIT OF ENCODING WITH A SURVIVAL SCENARIO?

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The study tested whether the thought of death contributes to the survival processing advantage found in memory tests (i.e., the survival effect, e.g., Nairne, Thomson, & Pandeirada, 2007). In Study 1, participants had to judge unrelated words in four different encoding conditions: an ancestral survival scenario, a modern-day survival scenario (World War III), a “life-after-death” scenario, and a standard deep-processing control condition (pleasantness). In Study 2, we compared a more salient death-thought scenario (in which people imagine themselves on death row in a prison having had their request for clemency rejected and informed that they are about to be executed) with the scenarios used in Study 1 (except the pleasantness condition). Finally, in Study 3, we replicated Hart and Burns’ (2012) Experiment 3 on the influence of the thought of death on memory retention. Although the activation of death thoughts led to better retention compared to a control aversive situation (i.e., dental pain), overall the findings from Studies 1 and 2 did not support the hypothesis that activating death thoughts is responsible for the survival effect.

A-0187

SENTENCE COMPREHENSION IS DETERMINED BY STRUCTURE OF INFORMATION RATHER THAN BY SYNTACTIC STRUCTURE

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Object-Relatives („The woman that Sue kisses is sitting“) are more difficult to process (i.e. determine who kisses whom) than Subject-Relatives („The woman that kisses Sue is sitting“). This well-studied difference is attributed either to the inevitable processing of complex syntactic movement (linguistic accounts), or to increased working-memory demands caused by longer maintenance of unanalyzed noun-phrases (processing accounts). In typical Subject-Relatives the structure of information is canonical ([who] [did-what] [to-whom]), whereas in Object-Relatives this order is distorted. We now dissociated between the syntactic and informational aspects and asked which is crucial for the rate of extracting meaning from complex sentences. Using a novel picture verification design, with RT as the measure of comprehension efficiency, we find: 1. Canonical structure of task-relevant information is the crucial aspect rather than syntactic complexity (e.g. „The creature that [pushes] [Mr. Rhombus] is [Mr. Circle]“, Subject-Relative, is processed than the Object-Relative „The creature that [Mr. Rhombus] [pushes] is [Mr. Circle]“); 2. Sentences with canonical structure of information (easier to process) induce priming (i.e. processed faster when all sentences have the same structure), whereas sentences with non-canonical structures do not. These findings suggest that internal representations are based on structures of information rather than syntactic structures.

A-0188

EXPLORING THE IMPACT OF EXTRAVERSION AND SOCIAL CONFIDENCE ON FACE RECOGNITION

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It has been established that extraverts who are skilled at interpersonal interaction perform significantly better than introverts on a face-specific recognition memory task. In Experiment 1 we further investigate the relationship between extraversion and face recognition ability, focusing on famous face recognition and face matching. We utilise a task that taps into long term non-laboratory naturalistic memory, as compared to previous studies which have only looked at short term memory. Results indicate that more extraverted individuals perform significantly better on an upright famous face recognition task and show significantly larger face inversion effects. However our results did not find an effect of extraversion on face matching or inverted famous face recognition. In Experiment 2 we investigate the impact of social confidence on face recognition and find that socially confident individuals perform better at famous face recognition. Our findings demonstrate the large range of individual performance in face recognition tasks and show the impact of extraversion and social confidence on face recognition. The results are also discussed with regard to the classification of participants into ‘normal’ and ‘clinical’ (for example, developmental prosopagnosics; super-recognisers) groups.

A-0189

INDIVIDUAL DIFFERENCES IN MULTITASKING

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Demands involving the scheduling and interleaving of multiple activities have become increasingly prevalent. Despite the ubiquity of everyday requirements to multitask, individual differences in multiple task performance have gained limited attention in past research. In this study, participants completed a multitasking session with four monitoring tasks and separate tasks measuring executive functioning and spatial ability. Individual differences in executive functioning and spatial ability were independent predictors of monitoring accuracy, but only spatial ability mediated sex differences in multitasking. Menstrual changes accentuated these effects, such that sex differences in multitasking (and spatial ability) were eliminated between males and females who were in the luteal phase of the menstrual cycle but not between males and females who were in the menstrual phase. These findings suggest that multitasking involves spatiotemporal task coordination and that individual and sex-related differences in multiple-task performance reflect differences in spatial ability.

A-0190

INDUCTION OF FALSE MEMORIES BY INCREASING/DECREASING MEMORY SELF EFFICACY

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The aim of this research is to investigate the relationship between self-efficacy and false memory using the Deese/Roediger–McDermott (DRM) associative memory illusion, whereby people falsely remember words that were not aurally presented. In study 1, the relationship between memory self-efficacy (MSE) and susceptibility to associative memory illusions using the DRM procedure was investigated with ANOVA and multiple regression analysis. Significant difference was found in working memory scores and propensity to falsely recall and recognize critical words between people with low and high MSE. Susceptibility to false recall was significantly predicted by memory for words subscale mean scores in MSE questionnaire (MSEQ) but not by those reported to other subscale of MSEQ or to other personality dimensions (extraversion/introversion, neuroticism, impulsivity, absorption); neither by working memory.

In study 2, in order to manipulate the sensitivity of memory system that fails producing false memories, MSE was modified using a procedure inspired to previous researches. ANOVA showed a significant difference in sensitivity of memory system ($d' = zcI - zhits$) between increasing self-efficacy group and decreasing self-efficacy one. These findings suggest that the personal dimension of MSE underlies some individual variation in susceptibility to associative memory illusions by influencing cognitive processes involved during recall task.

A-0191

RAPID PARALLEL RECRUITMENT OF LEXICO-SEMANTIC AND PHONOLOGICAL KNOWLEDGE IN FRONTAL AND TEMPORAL CORTICES DURING SPEECH PRODUCTION.

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In this study we explored the spatio-temporal dynamics of processes related to lexical and phonological access in speech production. Fifteen English speakers named objects aloud while their MEG was recorded. We orthogonally manipulated the lexical frequency of the object names, as an index of lexico-semantic retrieval, and the articulator movement associated with the first phoneme of a picture's name (i.e., labial: Monkey vs. dental: Donkey), as an index of phonological/phonemic retrieval. We found early MEG activation for the lexical frequency effect (160 – 240 ms) which was pinpointed to the mid temporal gyrus and the left inferior frontal gyrus. Crucially, in the same time window we observed a stronger cortical response in the motor region responsible for tongue-movements when a picture's name started with a dental compared to a labial sound. Concurrently we also observed a double dissociation in source activity in function of type of first phoneme in the posterior part of the superior temporal gyrus (pSTG), a region typically associated with acoustic-to-phoneme mappings. Taken together and in contrast to the traditional hierarchical view underlying word production, these data offer compelling evidence for very rapid and parallel retrieval of lexico-semantic and phonological/phonetic knowledge associated with perceived objects.

A-0192

MEASURING METACOGNITIVE FEELINGS IN IMPLICIT LEARNING

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Studies have shown that knowledge acquired in implicit learning experiments may give rise to metacognitive feelings that reflect the acquired knowledge, even if the person is not consciously aware of knowledge details (e.g., Norman, Price, & Jones, 2011; Scott & Dienes, 2008). Recent studies have started systematically comparing the sensitivity of different metacognitive awareness scales in artificial grammar learning (AGL) and their relationship to classification accuracy. For example, Dienes and Seth (2010) compared the accuracy of confidence ratings and two forms of wagering in AGL, and Wierzchon, Asanowicz, Paulewicz, and Cleeremans (2012) additionally compared feelings of warmth, a 4AFC rule awareness scale and a continuous rule awareness scale with AGL performance. The focus of this talk is on how one can measure metacognitive awareness of rule knowledge in AGL. We compare a set of rule awareness scales that, unlike the scales used by Wierzchon et al., assess accuracy of self-reported rule knowledge. We discuss the extent to which each of these scales involves metacognition. We exemplify how different scales sometimes yield different results, but may be used in combination with trial-by-trial measures

of rule awareness to obtain more precise assessment of metacognitive rule awareness in AGL.

A-0193

INTENTIONAL BINDING AND SENSE OF RESPONSIBILITY : TEMPORAL UN-BINDING OF ACTIONS AND EFFECTS WHEN INFLICTING PAIN ON OTHERS

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The sense of agency (SoA) refers to the experience of controlling one's actions, and through them events in the outside world. Although SoA and sense of responsibility appear to be related concepts, hardly any studies so far have investigated SoA in situations in which one's own actions have (negative) consequences for others. In the present study participants' actions produced electric shocks that inflicted pain of allegedly different pain intensities on somebody else (the confederate). SoA was measured by intentional binding – the subjective compression of the time interval between one's own actions and their effects -. Results indicate that assumed pain intensity modulates intentional binding: Compared to a no-pain condition, intentional binding was increased in a weak-pain condition, and reduced in a strong-pain condition. These findings suggest that people feel in charge of moderately painful effects of their actions for others, but tend to dissociate themselves from negative effects of increased severity. On a more general level, our findings support a close relation between SoA and feelings of responsibility.

A-0194

SURPRISE: REMARKABLY DIFFICULT TO EXPLAIN
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What makes some events surprising? Although surprise was originally classed as a basic emotion (by Darwin), recently, it has been cast more cognitively as making sense of surprising events. We propose that this sense-making process involves explaining the event. From this perspective, some surprises are more surprising than others because it is harder to find an explanation for why the event occurred. Two experiments are reported that test this theory by manipulating factors that impact explanation generation, in paradigms where participants make surprise judgements for outcomes that are either known or less-known. The first experiment shows that task instructions to find an explanation, as opposed to answering comprehension questions, decreases the judged surprisingness of an outcome. The second experiment shows that the ease/difficulty of explaining an outcome (manipulated by asking participants to produce one/three explanations for an outcome) impacts surprise judgements as predicted. The results indicate that it is ease-of-explanation that largely influences judgements of surprise. Surprising events have to be explained to make them sensible, and the level of surprise experienced reflects the ease or difficulty of this explanation process.

A-0195

SOCIAL COMPREHENSION AND AGING: WHAT WE LEARN FROM DESCRIPTION OF MOVING TRIANGLES.

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Objective: Most studies find a decline in theory of mind (ToM) abilities in old age, although it is not clear whether it is specific to social understanding or connected to more domain-general declines such as perception and emotional face recognition. To address this issue, ToM understanding in elderly participants was tested with perceptually simple stimuli and no emotional faces. Method: Animations that were originally developed for the study of Autism Spectrum Disorders by Abell, Happé and Frith (2000) in which geometric shapes exhibit either random, goal directed, or social interactions were used to ask participants to describe what had happened in each animation.

The descriptions were scored along the three original dimensions: ascription of mental states, accuracy and length. Results: old and young participants did not differ in either attribution of intentionality or in description length. However, they did differ in accuracy, as old participants performed below the young ones in the correctness of the descriptions. The observed differences do not derive from speech production difficulties. The results suggest that it is not ToM abilities that deteriorate with age, but the understanding of the underlying event.

A-0196

IMPLICIT LEARNING OF PRECISELY TIMED ACTION SEQUENCES: FORMING INFLEXIBLE AND INTEGRATED REPRESENTATIONS

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The ability to successfully sequence information is fundamental to complex human behaviors such as language production and motor expertise. In many skills, sequential actions must be performed in specific order with precise timing. These skills are learned through practice, during which implicit learning mechanisms hone actions sequences to produce fluid, accurate performance. Our Serial Interception Sequence Learning (SISL) task captures this process by requiring precisely timed, sequential motor responses to moving visual cues. Using this task, we found that selectively altering inter-action timing information severely disrupts the ability to execute a learned motor sequence. These results suggest that when precise timing is necessary, it becomes integrated into the sequence representation and the acquired knowledge is inflexibly tied to the training context. We further found that action and timing information are integrated even when response elements are separated across hands (requiring bi-manual responses). A lack of transfer from training to test contexts was also seen when the structure of perceptual stimuli used to cue motor responses was altered. Together, these results indicate that implicit sequential skill learning produces improved performance based on knowledge representations that integrate across action order, response timing, and perceptual information.

A-0197

LEARNING OF SPATIAL STATISTICS IN NONHUMAN PRIMATES: CONTEXTUAL CUEING IN BABOONS (PAPIO PAPIO)

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A growing number of theories of cognition suggest that many of our behaviors result from our ability to implicitly extract and use statistical redundancies present in complex environments. In an attempt to develop an animal model of statistical learning mechanisms in humans, the current study investigated spatial Contextual Cueing (CC) in nonhuman primates. Twenty five baboons (*Papio papio*) were trained to search for a T-target embedded within L-distractors configurations that were either predictive or non predictive of the target location. Baboons exhibited an early CC, which remained intact after a 6 week delay and stable across extensive training of 20.000 trials.

These results demonstrate the baboons' ability to learn spatial contingencies, as well as the robustness of CC as a cognitive phenomenon. Nevertheless, in both the youngest and oldest baboons, CC required much more trials to emerge than in baboons in intermediate age. As a whole, these results reveal strong similarities between CC in humans and baboons, suggesting similar statistical learning mechanisms in these two species. Monkeys are therefore a valid model to investigate how statistical learning mechanisms develop or age during the life span, how they are implemented in neural networks and how they have evolved throughout the phylogeny.

A-0198

ACTIVATION OF PHONETIC FEATURES IN MASKED PRIMING

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Models of reading aloud (e.g. Coltheart et al., 2001) are silent about the processes mediating the activation of abstract codes for sounds and their articulatory implementation in speech. The present work investigated such processes in a masked priming reading aloud task. In Experiment 1, nonword targets preceded by briefly presented masked primes (50ms) were named faster in the onset-related condition (e.g. pif-PEZ, where the prime and the target share their first phoneme) compared to the feature-related (e.g. biv-PEZ, where the prime's and target's first phonemes share all features bar voicing) and unrelated (e.g. rog-PEZ) conditions which yielded similar naming latencies. In Experiment 2, where primes were presented for slightly longer (60ms), both the onset- and feature-related conditions yielded significantly faster target naming latencies than the unrelated condition. These results suggest that orthographic information from subliminally presented letter strings does not only influence early stages of cognitive processing, but cascades all the way down in a time-coursed manner to affect the very late stages of the reading aloud process. The present findings motivate the conceptualisation of a single model of language production that can explain both reading aloud and speech production processes and have important implications for information-processing theories.

A-0199

READING FACES AND FACING WORDS: EFFECTS OF UNILATERAL POSTERIOR STROKE ON „SPECIALISED” PERCEPTUAL FUNCTIONS

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It has long been argued that perceptual processing of faces and words is largely independent, highly specialised and strongly lateralised. Studies of patients with either pure alexia or prosopagnosia have strongly contributed to this view. The aim of our study was to investigate how visual perception of faces and words is affected by unilateral posterior stroke. Two patients with lesions in their dominant hemisphere and two with lesions in their non-dominant hemisphere were tested on sensitive tests of face and word perception during the stable phase of recovery. Despite all patients having unilateral lesions, we found no patient with a selective deficit in either reading or face processing. Rather, the patients showing a deficit in processing either words or faces were also impaired with the other category. One patient performed within the normal range on all tasks. In addition, all patients performed within normal range on at least one test of visual categorisation, strongly suggesting that their abnormal performance with words and faces does not represent a generalised visuo-perceptual deficit. Our results suggest that posterior areas in both hemispheres may be critical for both reading and face processing, indicating that these processes may be more associated than previously thought.

A-0200

COLOURS OR LETTERS? AUTOMATIC PROCESSING IS CRUCIAL TO IMPLICIT LEARNING

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In recent studies we investigated which features of learning material determine the type of grammar people learn when exposed to two implicit grammatical rules simultaneously. In Study 1 during learning phase 4 groups of participants observed regular or irregular letter strings coloured either according to colour grammatical rule or not. In classification phase they determined grammaticality of new items, not instructed whether to apply the rule of letters or colours. We presented 4 types of strings: regular with respect only to letters, regular with respect only to colours, regular with respect to both rules and fully irregular. Results showed that participants classified strings above chance level only with regard to rules of letters and they did not acquire the grammar of colours. Assuming the result was due to automaticity of reading and not colour naming, we expected people to learn the rule of colours when letters become unfamiliar to them (Arabic letters for Latin alphabet users). Design of the study was identical to Study 1. Results indicated that under such conditions people did not learn either of the grammars – their performance was around chance level. Both studies show that implicit learning demands automaticity in processing of the learning material.

A-0201

TO GAMBLE OR NOT TO GAMBLE? PROBABILITY, REWARD PREDICTION AND CHOICE IN MEDIAL PREFRONTAL CORTEX

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Acting in an uncertain environment requires estimating the value of potential outcomes and predicting the consequences of every choice. In the human brain, the skills of foreseeing and detecting benefits are mediated by dopaminergic neurotransmission. Dopamine (DA) release signals also the violation of a prediction, namely when an outcome is better or worse than expected. This signal is named prediction error and is crucial in guiding goal-directed behavior. Medial prefrontal cortex (mPFC) has been assigned a pivotal role in computing prediction error, value integration and decision making. A major point of debate concerns the functional architecture of this region. On the one hand, Anterior Cingulate Cortex (ACC) seems to be critical in reward prediction, prediction error computation and action selection. On the other hand a complementary role in value estimation has been hypothesized for ventromedial Prefrontal Cortex (vmPFC). Hence, an fMRI experiment was designed to disentangle the contribution of ACC and vmPFC to probability estimation, reward prediction and outcome evaluation. A gambling task was implemented where the influence of decision-making was also tested by introducing a choice and a no-choice condition. Feedback-related activation was systematically sampled across the mPFC, providing evidence for dissociable functional profiles.

A-0202

A NEW PERSPECTIVE ON SUBLIMINAL SEMANTIC PRIMING: SOURCE CONFUSION AND PRIME DISCOUNTING

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Masked priming studies using semantic tasks have provided the strongest evidence for the high-level cognitive processing of stimuli that are not available to conscious awareness. However, many of these studies have used stimuli drawn from a small set (e.g., numbers between 1-9) and primes that are also used as targets, inviting the criticism that the priming effect reflects low-level stimulus-response mapping. Here, we report experiments using primes that are not used as targets and produce reliable semantic priming effects. The experiments manipulated the task (lexical decision vs. semantic categorization), prime visibility/prime-target SOA, and relatedness proportion (high vs. low proportion of semantically congruent prime-target pairs), using RT distribution analysis. The results indicate that in semantic categorization, semantic priming effect reflects a “head-start”, reflecting the evidence contributed by the prime, and that the integration of this evidence is strategically controlled according to the relatedness proportion only when the prime is visible. We argue that the account of masked priming in terms of evidence accumulation, combined with the notion of source confusion and prime discounting, rather than the traditional activation account,

provides a coherent explanation of why certain conditions provide the strongest evidence for unconscious semantic processing.

A-0203

IS THERE REALLY A DIFFERENCE IN THE PRECISION OF POSITION CODING FOR CONSONANTS AND VOWELS?

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Nonwords created by transposing two consonants (e.g., VADILITY) are perceived to be more similar to the basewords compared to nonwords created by transposing two vowels (e.g., VILADITY) (Perea & Lupker, 2004; Lupker, Perea & Davis, 2008). We investigated the locus of this effect. We first used the English stimuli used by Lupker et al. (2008) involving non-adjacent transpositions, and replicated their finding of greater TL similarity effect for consonant transpositions than vowel transpositions in the same-different match task, as well as the lexical decision task used in the original study. We took the result as indicating the locus of the consonant-vowel difference is not in lexical retrieval, but in orthographic processing. Subsequent experiments used different polysyllabic English words in the same-different task to investigate the origin of the consonant-vowel difference in orthographic processing. The consonant-vowel difference remained when adjacent letters were transposed (e.g., DAUGHTER, SEQUEUCE) but was eliminated when nonadjacent singleton consonants (e.g., CHOLOCATE) and vowels (e.g., CHOALOTE) were transposed. The results are interpreted in terms of the role of orthographic CV skeleton.

A-0204

STIMULUS INPUT MODALITY AFFECTS THE FREQUENCY OF FALSE WORKING MEMORIES.

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Recently the Deese/Roediger-McDermott (Roediger & McDermott, 1995) paradigm has been applied to investigate false memory effects in the domain of working memory (WM) using visual presentation of the study list and a visual recognition test (e.g. Atkins & Reuter-Lorenz, 2008). Evidence indicates that verbal WM performance is better with auditory than visual presentation suggesting that stimulus modality would also influence the rate of false WMs. We tested this hypothesis in the current experiments in which we varied the modality of the study list and the recognition probe systematically to produce four conditions: AA, AV, VV and VA. Across two experiments, false alarms were more frequent to associatively-related probes (false memories, FMs) than to unrelated probes. Furthermore, FMs were nearly twice as frequent when the study set was presented in the visual than in the auditory modality regardless of probe modality. However, FMs were reduced when study and probe modality matched. These results extend the evidence for false WM to the auditory modality and indicate it is less susceptible to semantic distortions than the visual modality. The reduction in

FMs when study and probe modality match suggests the influence of encoding specificity on WM performance. (false memory, working memory)

A-0205

ARE DECLARATIVE AND PROCEDURAL WORKING MEMORY INDEPENDENT?

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The intrinsic duality of working memory has led to several accounts of the relationships between the functions of processing and storage. Though the first theories regarded these two functions as supported by distinct mechanism and structures (Baddeley, 1986), further theories assumed that the two functions compete for a common supply or resource like the time-based resource-sharing model (TBRS; Barrouillet & Camos, 2012), which assumes that both functions depend on the same limited attentional resource. Nonetheless, the hypothesis of independence between processing and storage has recently been renewed through the distinction proposed by Oberauer (2009) between declarative and procedural working memory. The present study tested this hypothesis by using a complex span task. Participants were asked to maintain series of letters for recall, while performing a concurrent response selection task. The load on procedural working memory was manipulated by varying the complexity of the response selection task-set that involved either 2 or 4 stimulus-response mappings that are difficult to verbalize. The hypothesis of independence would predict no effect of procedural load on recall performance. Contrary to this expectation but in line with TBRS prediction, results revealed that more complex task set induced poorer recall performance.

A-0206

THE ROLE OF ATTENTION IN ACTION-RELATED AUDITORY ATTENUATION

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Tones coinciding with one's own actions elicit lower amplitude sensory event-related potentials (ERPs) than the same tones when they are only listened to. Because most studies investigating this effect used protocols in which tones were triggered by the participants' own actions, the decreased ERP activity was attributed to neural forward models representing action-sound associations, which make the adaptation of the sensory system to the predictable sensory consequences of the action possible.

The present study investigated the hypothesis that the decreased ERP activity for action-sound coincidences reflected the division of attention between the auditory and tactile consequences of the action. In the experiment tones were presented at random intervals while participants moved their index finger from time to time at a regular pace. In one condition, the index finger touched a platform at the end of the movement, but no mechanical contact was made in the other. The attenuation of the tone-related ERPs to action-tone coincidences was stronger when the

movement involved a mechanical contact. This suggests that the decreased auditory processing activity as reflected by the attenuated ERP is a byproduct of focusing attention on the tactile feedback, and is not due to forward modeling. (action, attention, prediction, event-related potentials)

A-0207

WHAT ARE THE LATENT PROCESSES OF THE SIMON EFFECT?

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In recent years, formal models of choice such as the drift diffusion model (DDM) and the linear ballistic accumulator model (LBA) have been applied to study tasks that require cognitive control. These models assume that evidence is accumulated for various responses up to a criterion, at which point a choice is made. By fitting these models to RT data, researchers attempt to identify the model parameters that reflect cognitive control. Despite the increased attention to cognitive control in the modeling community, to date there has not been an accumulator model-based explanation of one of the pivotal tasks in the cognitive control literature: the Simon task. In fact, some researchers have argued that the Simon task cannot be modelled using the drift diffusion model. Here, we provide a model-based explanation of the Simon task. We argue that the Simon task can be explained by a response bias towards the "Compatible" response, in combination with a counter-intuitive difference in stimulus-processing speed: Our analyses show that incompatible items are processed faster than compatible items, whereas the average responses are slower. This result was obtained for multiple data sets as well as for multiple implementations of the evidence accumulator principle (specifically, LBA and DDM).

A-0208

ANTICIPATING THE COURSE OF AN ACTION: EVIDENCE FROM CORTICOSPINAL EXCITABILITY

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BACKGROUND. Anticipatory planning, the ability to anticipate the forthcoming perceptual-motor demands of the goal of an action sequence, is essential to behave flexibly and purposefully. What makes anticipatory planning interesting is that it shows the influence of later actions in a goal-directed task on the selection of earlier actions. Using transcranial magnetic stimulation (TMS) we investigated how changes in corticospinal excitability (CSE) depend on anticipated task variables of future intended actions. Specifically, we examined the time course of single- and paired-pulse modulation in movement selection decisions influenced by predicted demands of a forthcoming object manipulation. **RESULTS.** Depending whether participants were required to perform one or double step movement, there is a modulation of the corticospinal output to the muscles

that depends on which object and type of movement participants are preparing to perform. This change in excitability was not observed during one step movement. **CONCLUSIONS.** We showed that anticipatory effects of forthcoming task demands play an important role in controlling multi step actions in which ongoing behavior must be adjusted. This finding supports the notion that cortico-cortical mechanisms subserving movement planning is specific for objects properties as well as the desired goal of the entire movement sequence.

A-0209

NEURAL CODING OF ASSESSING ANOTHER PERSON'S KNOWLEDGE BASED ON NONVERBAL CUES

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Language as used in social context is not only about what is said, but also how it is said. Along with the message content, meta-communicative information qualifies the message (Clark, 1996). Judging the trustworthiness of incoming information is one such qualification. Based on our partners' nonverbal behavior we can judge how confident they are about what they are saying (Brennan & Williams, 1995; Swerts & Kraemer, 2005). Using functional magnetic resonance imaging, this study investigates whether the outcomes of such judgments are represented in distinct activity patterns in the perceiver's brain. Participants viewed videos of people answering general knowledge questions (Swerts & Kraemer, 2005), and judged how confident the person appeared of their answer. Through parametric univariate analysis and multivariate pattern analysis we identify neural signatures associated with judging a person as confident versus less confident. Both analysis approaches indicate that these judgments are associated with the brain regions mPFC, right pSTS/TPJ, and IPS. These regions have been associated with the mentalizing and the mirror neuron system (van Overwalle and Baetens, 2009). Particularly noteworthy, our results indicate that the two systems are differentially activated depending on how confident a person is perceived to be.

A-0210

THE EFFECT OF POSITIVE ORTHOGRAPHIC NEIGHBOURHOOD IN VISUAL WORD RECOGNITION

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This study investigated the role of positive orthographic neighbourhood in visual word recognition. Targets were French words with a neutral emotional valence (e.g., QUÉRIR [FETCH], PULSER [PULSE]). They all had only one higher-frequency neighbour, that was either emotionally positive (e.g., guérir [cure]) or neutral (e.g., puiser [draw]). Target

words were presented in a primed lexical decision task. The primes corresponded to the orthographic neighbour or to a control neutral word prime (e.g., flacon [flask], anneau [ring]) displayed for 66 or 166 ms. The results replicated an inhibitory orthographic priming effect, enhanced by prime duration. More importantly, the results revealed: (1) an inhibitory effect of positive orthographic neighbourhood and (2) an increase of the orthographic priming effect by positive neighbours. These findings are discussed in terms of feedback from the affective system toward the orthographic lexicon within an interactive activation and competition model of visual word recognition extended to affective processing (Gobin & Mathey, 2010).

A-0211

EFFECT OF EMOTIONAL ORTHOGRAPHIC NEIGHBOURHOOD IN AN ADAPTED STROOP PARADIGM

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This study investigated whether activation spreads between the orthographic lexicon and the affective system using an adapted version of the Stroop paradigm. Previous research has shown that orthographic neighbourhood influenced the data obtained in the traditional emotional Stroop task (Larsen, Mercer, & Balota, 2006). Usually, in this task, participants are faster to identify the colour of neutral words than of negative words, reflecting an automatic and deeper allocation of attention towards negative stimuli.

In the present study, all stimulus words were neutral, while their emotional orthographic neighbourhood was manipulated (Gobin & Mathey, 2010). Specifically, these stimuli had (1) no orthographic neighbour (e.g. CUMIN [cumin]), (2) one higher frequency neighbour that was either neutral (e.g., bolets [boletus]/ VOLETS [shutters]), (3) low negative (e.g., idiome [idiom]/ IDIOTE [idiotic]) or (4) strong negative (e.g., truelle [trowel]/ CRUELLE [cruel]). The participants performed an "orthographic emotional stroop task" in which they had to categorize the colour of the stimuli. Results showed a facilitatory effect of neutral neighbours, whereas the effect of strong negative neighbours was inhibitory. These findings are interpreted within an interactive activation model of visual word recognition extended to affective processing, in relation with the affective characteristics of the participants.

A-0212

EARLY SENSORY EFFECTS OF AUDITORY DISTRACTION

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In the present experiment the sensory effects of distraction (involuntary attention-change triggered by infrequent, unpredictable stimuli) were investigated. Continuous tones featuring occasional pitch-glides and gaps were presented. Participants responded to gaps with key-presses. In the frequent glides condition, the mean between-glide interval was 2.75 s, whereas it was 11 s in the rare glides condition. The mean between-gap interval was 2.5 s in both conditions. The timing of gaps was adjusted so that gaps occurred at

150, 650, 1150 ms, and so forth following glides.

The amplitude of the N1 event-related potential elicited by gaps following glides by 150 ms in the rare glides condition were attenuated in comparison to that in the frequent glides condition, but no between-condition N1-difference was found for gaps following glides by 650 ms. Hit rate was reduced for gaps following glides by 150 ms in the rare glides condition only. No reaction time differences were found. These results show that distraction triggered by infrequent glides impacted auditory processing as early as 150 ms following the distractor, but 650 ms after the distractor this sensory effect was not present anymore. (hearing, attention, distraction, event-related potentials)

A-0213

BIASING REMEMBERING: THE EFFECT OF EGOCENTRIC-UPDATING FLUENCY IN EPISODIC MEMORY RECONSTRUCTION PROCESS

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The attribution hypothesis framework suggests that fluency (i.e., the relative ease and speed with which an item is processed) could constitute a basis for memory judgments. Using a Remember-Know procedure, the usual perceptual fluency manipulations during recognition only affect know responses. A possible explanation of these results is that perceptual fluency acts on processes which are not directly relevant for remembering. Recent episodic memory models emphasize the involvement of the egocentric-updated with self-motion (Ego-Up) process on the first-person point-of-view reconstruction which occurs during remembering. Two experiments were conducted to assess the effect of Ego-Up fluency on remembering. Participants learned a four-minute path movie. Subsequently, they had to evaluate short paths and determine whether they were part of the learned path or not, followed by a Remember-Know procedure for recognized items. Ego-Up fluency was manipulated with the introduction of a slight acceleration on recognition paths. The first experiment shows that fluency significantly increases remember responses on learned paths. The second experiment indicates that this effect depends on the involvement of a reconstruction process during the recognition task. These results suggest that remembering could be biased by an Ego-Up fluency which is specific to the episodic-memory reconstruction process.

A-0214

DEVELOPMENTAL IMPROVEMENT OF MAINTENANCE MECHANISMS OF VERBAL INFORMATION BETWEEN 6 AND 9 YEARS OLD CHILDREN IN WORKING MEMORY

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In adults, two mechanisms allow the maintenance of verbal information in working memory: articulatory rehearsal and attentional refreshing. Both are already in use at 7. This study evaluated the interplay between these mechanisms from 6 to 9 in 3 experiments. The opportunity for refreshing was manipulated either by introducing a concurrent task or by varying its attentional demand. Moreover, we impeded the subvocal rehearsal either by asking children to perform the concurrent task aloud, or by concurrently repeating "oui".

As expected, recall performance increased with age, and decreased with articulatory suppression regardless age. Moreover, impeding the refreshing by varying the attention demand of the concurrent task reduced recall. However, this effect did not interact with the age. Finally, the interaction between rehearsal and refreshing depended on the manipulation of the attentional demand, without interacting with age. To conclude, the efficiency of mechanisms improves from 6 to 9, refreshing and rehearsal being independent in children, as in adults.

A-0215

LANGUAGE SWITCHING IN A COMPLEX SPAN TASK IN LATE BILINGUALS

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Most models of working memory propose that its two functions, i.e., processing and storage of information, both require a limited attentional resource (e.g. Cowan, 2005). The Time-Based Resource-Sharing model (Barrouillet & Camos, 2010) suggests that information is maintained by a fast switching of attention between processing and storage, allowing the attentional refreshment of memory traces. Thus, the amount of time attention is occupied by a concurrent task (that is its cognitive load) is the determinant factor of recall performance. In the present study, we investigated how language switching among late bilingual adults increased the cognitive load in a working memory span task. Sixty late bilinguals completed a complex span task consisting of memorizing digits while naming shapes. Participants completed four conditions. In the two same-language conditions, the two tasks were in their dominant language (L1) or their secondary language (L2). In mixed conditions, naming and memorizing digits were in L1 while performing the concurrent shape task in L2, and vice versa. Our hypothesis was that recall performance would be higher in the L1/L1 condition than in the L2/L2 condition. Also, if language switching increased cognitive load, recall performance would be lower in mixed conditions than in the two same-language conditions.

A-0216

AN ERP INVESTIGATION OF ADJACENT AND NON-ADJACENT TRANSPOSED-LETTER PRIMING

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We compared effects of adjacent (e.g., atricle-ARTICLE) and non-adjacent (e.g., actirle-ARTICLE) transposed-letter (TL) primes in an ERP study using the sandwich priming technique. TL priming was measured relative to the standard double-substitution condition. We found significantly stronger priming effects for adjacent transpositions than non-adjacent transpositions (with 2 intervening letters) in behavioral responses (lexical decision latencies), and the adjacent priming effects emerged earlier in the ERP

signal, at around 200-250 ms post-target onset. Non-adjacent priming effects emerged about 50 ms later and were short-lived, being significant only in the 250-300 ms time-window. Adjacent transpositions on the other hand continued to produce priming in the N400 time-window (300-500 ms post-target onset). This qualitatively different pattern of priming effects for adjacent and non-adjacent transpositions suggests that transposed-letter effects are not just the result of generic positional noise, but at least partly reflect the operation of a flexible, letter-specific, position encoding mechanism.

A-0217

GOOD IDEAS DIE HARD: FORGETTING IN WORKING MEMORY INCREASES WITH THE NUMBER OF CONCURRENT REPETITIONS OF A NON-SENSE SYLLABLE.

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Complex span tasks in which memory items are interspersed with processing episodes have revealed a strong pace effect whereby recall performance decreases as the pace of the concurrent processing increases, an effect predicted by the Time-Based Resource-Sharing model of working memory (Barrouillet et al., 2011). The SOB-CS model (Oberauer et al., 2012) has recently proposed to account for this phenomenon by assuming that distractor novelty creates interference that degrades memory traces. Novel distractors that are dissimilar with the current content of working memory would receive strong encoding weight that interferes with memory items, whereas repeating the same distractor would not involve any further forgetting. Moreover, this model does not involve any mechanism of refreshing or rehearsal, memories being restored by removing distractors from working memory. We tested these hypotheses by varying the number of repetitions of a same distractor after each memory item, participants being asked to repeat the syllable “ba” aloud after each to-be-remembered letter. Contrary to SOB-CS predictions, increasing the number of repetition resulted in reduced recall performance, an effect easily accounted for by the venerable hypothesis of concurrent articulation impeding refreshing by subvocal rehearsal. This effect was replicated with a Brown-Peterson paradigm.

A-0218

LINKS ACROSS NUMBER, SPACE, TIME, AND OTHER CONTINUOUS DIMENSIONS IN THE DEVELOPING MIND

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Mapping numbers onto space is a widely known and replicable finding in human adults. Critically, this phenomenon appears to be modulated by culture and, therefore, it has been long believed to be the result of education and human invention. However, recent developmental studies are challenging this assumption by shedding light on the origins of this phenomenon. I will present evidence for the presence of basic number-space mappings early in development, and of the privilege

status of the number-space mapping relative to mappings involving a different continuous dimension, such as brightness level. Finally, I will describe a testable working hypothesis on the factors that contribute to the emergence of a 'mental number line' in a mind without language.

A-0219

THE INTERACTION OF RETRIEVAL CUE AND ENCODING TASK ON SOURCE MEMORY

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The ability to remember details of past events depends on the processes that take place both at encoding and retrieval. This fMRI study aims to explore how the retrieval cue and the encoding task interact during source memory retrieval. In the encoding phase participants performed a semantic task (pleasant word?) or a perceptual task (more than 6 letters?) in a set of words. During retrieval the probe was presented with either a semantic cue (pleasant task?) or a perceptual cue (letter task?). Participants had to decide if that probe appeared in that specific task. The results revealed an encoding task effect during context retrieval. Retrieving probes previously encoded in a semantic manner was associated with significant activation in medial temporal and medial frontal regions, whereas the retrieval of probes encoded in a perceptual manner was linked to left posterior occipital activations. Critically, this effect was only found when context memory was elicited by the semantic retrieval cue, but not by the perceptual retrieval cue. These results suggest that only the semantic cue induces activations that are congruent with the neural processes instantiated during encoding. Our findings point to an important relationship between retrieval cue and encoding task in context memory.

A-0220

THE ROLE OF STRATEGIES IN NUMEROSITY ESTIMATION

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The present study investigated whether having the opportunity to employ a variety of estimation strategies would affect individuals' numerosity estimation performance. Forty-four young adults had to estimate 80 different numerosities of colored cells that were presented in a 20 x 20 grid in either a strategic condition, or a perceptual condition. Participants in the strategic group were given maximum 20 seconds to make an estimate, whereas individuals in the perceptual group only had 1 second. In both groups verbal strategy reports were collected on a trial-by-trial basis.

Results showed that participants in the strategic group used, as expected, a much larger variety of strategies than participants in the perceptual group. Furthermore, the frequency of usage of a particular strategy varied as function of the numerosity range. The strategic group outperformed the perceptual group in the numerosity range 80-320, but not in the lower or upper range. Apparently, participants in the perceptual group applied a subtraction strategy in which they subtracted the number

of empty cells from the total number of cells in the grid to estimate the numerosities in the upper range. This finding suggests that individuals behave strategically, even under very limited time constraints.

A-0221

INTEGRATION OF SPATIAL INFORMATION ACROSS VISUAL EXPERIENCES.

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Two experiments investigated whether people integrate at the time of learning spatial locations viewed within the same environment but at different points in time and from different viewpoints, or whether they treat each unique episodic experience as a separate memory. Participants studied visually two layouts of objects that were placed around them in a round (Experiment 1) or a square (Experiment 2) room. Results from Experiment 1 indicated that participants did not integrate the two layouts into a single representation at the time of learning. Imagined perspective-taking was slower and less accurate when trials involved information from both layouts than from only one. Furthermore, performance for trials within each layout was better from the perspective that the layout was studied. In Experiment 2, the structure of the layout influenced many participants to integrate locations from the two layouts into a common representation organized around a single reference frame. For these participants, within- and between -layout judgments resulted in equivalent performance. . These findings indicate that spatial integration across experiences depends on the availability of external environmental cues.

A-0222

EARLY AND LATE ATTENTIONAL SELECTION FOR ACTION CONTROL: A COMPUTATIONAL APPROACH

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When different features of a stimulus activate competing responses, then the relevant feature must be selected for resolving the response conflict and for performing the required task. This is usually achieved by selective attention. Results from distributional data analyses show that selectivity improves during stimulus processing and response selection, which has been interpreted as evidence for the hypothesis that two selection processes are involved: An early and not very efficient selection process that mostly relies on perceptual filtering, and a late efficient selection process that is usually based on more abstract categories. The recently developed Dual-Stage Two-Phase (DSTP) model of selective attention, formulated in the framework of drift-diffusion models, incorporates these two selection processes and their interaction. I will show that the DSTP model can account for the performance in different conflict paradigms, and thereby demonstrate its flexibility and the generality of the assumed mechanisms. Furthermore, I will discuss some practical problems of fitting diffusion models to data from conflict paradigms and how they might be resolved.

A-0223

THE ROLE OF SEQUENTIAL PREDICTABILITY IN LANGUAGE CONTROL: EVIDENCE FROM LANGUAGE SWITCHING

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Language switching studies that investigated preparatory effects have not always found an effect of preparation on language switch costs. Furthermore, previous studies mainly focused on language preparation, whereas other aspects (e.g., concept preparation) have been neglected. Thus, the current study systematically examined the influence of sequential predictability of language and concept on language switching in four experiments. Put differently, participants knew which language and/or concept to use in the next trial due to a memory-based language and/or concept sequence and thus could prepare for it. The first two experiments examined the effect of full response predictability (i.e., languages and concepts are predictable) against only languages (Experiment 1) or concepts (Experiment 2) being predictable. The results showed smaller switch costs with full response predictability. The last two experiments examined the effect of partial response predictability (i.e., only languages, Experiment 3, or concepts, Experiment 4, were predictable) against language switching with no predictable language or concept sequence. These experiments showed no influence of predictability on switch costs. Hence, our results indicate that both language and concept information are necessary to instigate language control. These results will be discussed in terms of models of control, such as the inhibitory control model.

A-0224

WHAT THE ATTENTIONAL BLINK CAN TELL US ABOUT VISUAL ODDBALL PROCESSING

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The attentional blink (AB) phenomenon is a useful tool to test to what degree the efficacy of visual processing depends on attention. I tested whether the processing of deviations in a serial visual stimulation requires attentional allocation to these changes. In detail, rare deviations in serial visual stimulation are accompanied by an occipital N2 in the event-related potential, the so-called visual mismatch negativity (vMMN). Recent research suggests that the vMMN reflects automatic processing of information on the sensory level as a basis for change detection. To directly test the hypothesis that visual deviance processing as mirrored by vMMN requires attention, the AB paradigm was combined with an oddball paradigm: Either 300ms (Lag-3) or 700ms (Lag-7) after the presentation of a target (T1), a second target (T2) was presented. Behavioral results demonstrate that T2 detection at Lag-3 was nearly chance level (attentional blink). In another condition, a rare position change was embedded at Lag-3 or Lag-7 in the stimulation. This location deviant was preceded by at least 10 stimuli presented at standard location and, therefore, elicited a vMMN. Importantly, the vMMN did not differ between Lag-3 and Lag-7, suggesting that the processing of visual deviants is independent from attentional allocation.

A-0226

THE „BASIC-LEVEL“ ADVANTAGE IN CATEGORIZATION IS ACTUALLY AN INTERMEDIATE-LEVEL ADVANTAGE

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Rosch and colleagues (1976) published the seminal paper on the so-called “basic-level” advantage in category hierarchies. Accordingly, categorization at the basic-level is faster (e.g. “dog”) compared to the subordinate (e.g. “collie”) or superordinate (e.g. “animal”) level. Some exceptions to this rule were reported, for instance experts behave differently and processes in the domains of face recognition and art perception (see Belke, Leder, Harsányi, & Carbon, 2010) seem to follow a different logic, too. Here we test the more general idea that the “basic-level” advantage is in fact an effect which should be called intermediate-level advantage. With an identity priming paradigm we tested different specification levels of sets of subordinate vs. intermediate vs. superordinate level items, for instance “office chair” (subordinate), “chair” (intermediate) and “furniture” (superordinate) against “chair” (subordinate), “furniture” (intermediate) and “artifact” (superordinate). Whereas in the first condition “chair”, the item on the intermediate-level, was categorized fastest, it was not categorized fastest when used in a set where “chair” was on the subordinate level. The intermediate-level items were the fastest in both conditions. The finding is difficult to explain by traditional semantic network theories of categorization but fits more easily in theories of adaptive and situated cognition.

A-0227

INTERACTIONS BETWEEN VISUAL SPATIAL ATTENTION AND THE FOCUS OF ATTENTION IN WORKING MEMORY

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A key debate about the structure and functioning of working memory (WM) is its overlap with mechanisms underlying perceptual attention. Research from attentional capture in visual search has implicated a single-item ‘search template’, similar to a single-item capacity focus of attention (FoA) in models of WM (e.g. Oberauer, 2009), where a memorised item biases perceptual input (Olivers & Eimer, 2011). Previously, we have shown the perceptual attention shifts are indicative of WM shifts in a spatial switching/memory-updating task (Hedge & Leonards, 2013). Here, we present reaction time data from four experiments in which we directly address the interaction between the FoA in WM and spatial attention. By presenting update operation cues in congruent or incongruent locations to the current FoA, we examine whether there is a cost of drawing attention away from and/or a benefit of cueing attention towards the location of a focal item in WM. Data indicate a cueing benefit, although the WM switch cost is not eliminated if perceptual processing is required in an alternative location. We suggest that WM and spatial attention interact on the level of a spatial attention map, but it is not solely perceptual resources that maintain the privileged state of the FoA.

A-0228

SUBLEXICAL PHONOLOGICAL REPRESENTATIONS IN YOUNG READERS: EVIDENCE FROM PRIMING PARADIGM

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The aim of the study was to examine the contribution and the nature of phonological representation involved during silent reading in French second-graders. In the first experiment, we used a cross-modal priming paradigm in which targets were printed words following spoken non-words. Four experimental conditions were created by manipulating the onset phonological overlap between prime and target. There were four categories of primes: identity, matched on target's onset phonology (e.g., /bRə/-BREBIS), close variation (differed from targets by a single phonemic feature (e.g., /pRə/-BREBIS), distant variation (differed from targets by more than a single phonemic feature (e.g., /fRə/-BREBIS) and unrelated. Results revealed phonological priming in the identity condition only. This finding supported (1) the hypothesis of automatic activation of phonological representation in second grade readers and (2) that phonology accessed in visual word recognition was speech-based. In the second experiment, the same manipulation was applied to unimodal auditory priming and reveals that, contrary to written word recognition, spoken word recognition involved subphonemic processing. Together these results suggest that visual word recognition automatically activates spoken language representation in young readers. However visual word recognition involved more abstract phonological units (phoneme) than speech processing which extracted subphonemic units (phonemic feature).

A-0229

SCALING-UP PERCEPTION-ACTION LINKS: EVIDENCE FROM SYNCHRONIZATION WITH INDIVIDUAL AND JOINT ACTION.

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How do we map joint actions we participate in onto joint actions we observe others performing, such as when a couple dancing tango observes another couple dancing tango? We investigated this question using a task where participants were instructed to perform individual or joint movements in synchrony with individual or joint movements observed on a computer screen. The observed movements started slowly and then continuously increased in tempo (from 1.75 Hz to 3 Hz). The results showed that, with regard to spatial parameters, joint performance was more accurate when observing joint performance than when observing individual performance. Individual performance was more accurate when observing individual action than when observing joint action. There were no systematic differences with regard to timing parameters. These results suggest that mechanisms of temporal coordination may be less susceptible to differences between individual and joint action than mechanisms of spatial matching.

A-0230

SYNTAX IN MUSIC AND LANGUAGE : INVESTIGATING DOMAIN SPECIFICITY

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Across several cognitive domains, it is essential to integrate distinct sequential elements into higher order structures. But to what extent are such structuring processes domain-specific? Recent research concerning the specificity of syntactic priming effects has found evidence for cross-domain priming (Scheepers et al., 2011), but seldom directly compares the strength of within-domain and cross-domain influences.

In this study, high and low attachment (HA/LA) primes were formed in four domains: sentence structure (relative clause attachment: "the chairs in the room that were old / was old", Scheepers et al., 2003), music (harmonic key progressions: "ABA/ABB"-structured transitions), arithmetic ("2+(2*(2+3))" versus "2+((2*2)+3)", Scheepers et al., 2012) and discourse structure (means end parsing: "fill the glass, open your laptop, drink juice/send mail", Allen et al., 2006). After this priming, participants verbally completed ambiguous sentence fragments in two conditions: relative clause attachment or means end parsing.

There was a significant priming effect from prime structure to the structure of following target completions (36.6% of target responses were HA after LA priming, against 55.5 % HA target responses after HA priming). Importantly, priming was as strong within-domains as it was between-domains. These results thus provide strong evidence for domain-general resources in hierarchical structure processing.

A-0233

HOW TEMPORAL EXPECTATIONS BIAS ATTENTION

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Expectation with respect to the timing of an event influences the speed of perceptual processing of the event. However, the exact relationship between perceptual processing speed and temporal expectation has not previously been specified. Here we present the results of a parametric experiment exploring this relationship in cued single-stimulus letter recognition with unspeeded motor responses. The length of the cue-stimulus foreperiod was exponentially distributed with one of six hazard rates varying between blocks. We hypothesised that this manipulation would result in a distinct temporal expectation in each hazard rate condition. Stimulus exposures were varied such that both the temporal threshold of conscious perception (t_0 ms) and the perceptual processing speed (v letters/s) could be estimated by use of the theory of visual attention (TVA; Bundesen, 1990). We found that the temporal threshold t_0 was unaffected by temporal expectation, but the perceptual processing speed v was a strikingly linear function of the logarithm of the hazard rate of the stimulus presentation. We argue that the effects on the v values were generated by changes in perceptual biases, suggesting that our perceptual biases are directly related to our temporal expectations.

Keywords: Attention, Temporal expectation, Perceptual processing speed, Theory of visual attention, TVA

A-0234

ARE COMPLEX VOCALIZATIONS NECESSARY FOR CONSONANCE PROCESSING?

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It has been suggested that consonance perception is grounded on the statistical structure of speech (the principal source of periodic sound stimuli in humans). Here we tested the hypothesis that the production of complex vocalizations is necessary for consonance processing. We trained rats to discriminate and generalize over consonant – dissonant chords (Experiment 1) and between two different sets of interval ratios (both sets belonged to the dissonance category; Experiment 2). We also tested human participants with the same set of stimuli (Experiment 3). Rats discriminated between consonance – dissonance categories and between the two sets of interval ratios. However, animals could not generalize the learned pattern to novel stimuli. Conversely, humans discriminated and generalized in both stimuli sets. These results suggest that the use of interval ratios rather than sensory consonance might guide chord discrimination in non-human animals. More importantly, the lack of generalization suggests that species-specific complex vocalizations might be required for the creation of categories among stimuli varying in frequency ratios. Rats discriminative capacity shows that at least some components of complex auditory processing needed to recognize chords based on their interval ratios are shared across species.

A-0235

TASK SWITCHING AMONG TWO OR FOUR TASKS: EFFECTS OF A SHORT-TERM VARIATION OF THE NUMBER OF CANDIDATE TASKS

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Participants switched among a set of four tasks that in some conditions was reduced to only two candidate tasks on a trial-to-trial basis. In addition, a control condition with only two tasks was run. Compared to this two-task control condition, switching among four tasks was associated with an overall increase of reaction times. Temporarily reducing the set of four tasks to only two resulted in facilitation that selectively affected task switches but not task repetitions. This observation is interpreted as an indication of a short-term restructuring of a global task representation by implementing antagonistic constraints among the representations of the two remaining candidate tasks.

A-0236

RETRO-CUE BENEFITS IN WORKING MEMORY WITHOUT SUSTAINED FOCAL ATTENTION

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In working memory tasks, performance can be boosted by directing attention to one memory item: when a retro-cue in the retention interval indicates which item will be tested, responding is faster and more accurate. We tested whether the retro-cue benefit in working memory depends on sustained attention to the cued item by inserting an

interruption task between the retro-cue and the memory test. In two experiments, the interruption task required participants to shift their visual attention away from the cued representation by performing a visual classification task on shapes (Exp. 1A) or colors (Exp. 1B). In the second experiment, the interruption task required participants to shift their focal attention within working memory (WM): Focal attention was directed away from the cued representation by probing another item from the memory array prior to probing the cued item. The retro-cue benefit was not attenuated by shifts of perceptual attention or by shifts of attention within WM. We conclude that sustained attention is not needed to maintain the cued representation in a state of heightened accessibility.

A-0237

N-2 REPETITION COSTS ARE DETERMINED BY PREPARATION

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In task switching, a common result supporting the notion of inhibitory processes as a determinant of switch costs is the occurrence of $n - 2$ repetition costs. Evidence suggests that this effect is not affected by preparation. However, the role of preparation on preceding trials has been neglected so far. In this study, evidence for an influence of preparatory processes on $n - 2$ repetition costs is provided by focusing on the cue-stimulus interval on trials $n - 1$ and $n - 2$. $N - 2$ repetition costs were affected by an interaction of both $n - 1$ and $n - 2$ preparation time, being more pronounced when both preparatory intervals were long. The results provide support for the notion of active preparation processes involved in backward inhibition.

A-0238

REFRESHING MEMORY TRACES: DOES THINKING OF AN ITEM CHANGE ITS STATUS IN MEMORY?

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Attentional refreshing is a general mechanism serving maintenance of information in working memory (WM). Studies suggested that the instruction to „think of“ WM items prompts participants to engage in refreshing. So far, no study manipulated which items participants refresh at which point in time. In the present study, we explicitly controlled which (and how often) items were refreshed during the maintenance period of a visual recall task. Participants encoded an array of colors and were asked to report the color of a highlighted item by selecting it from a continuous color-wheel. During retention, four arrows pointing to locations in the memory array were shown sequentially, and participants were instructed to „think of“ the corresponding item. The number of times the tested item was cued as target of refreshing was manipulated: 0, 1 or 2 times. Data were fitted with a mixture model that decomposes the distribution of responses into: report of target, report of non-targets, and guessing. Items refreshed more often were recalled with higher probability, and the reported color of those items deviated less from the true

color than for items refreshed less often. These results are the first evidence that the pattern of refreshing modulates WM performance.

A-0239

IMPLICIT LEARNING IN VISION AND AUDITION: EVIDENCE FOR AN A-MODAL LEARNING MECHANISM

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Implicit learning refers to people's ability to learn regularities in the environment automatically and without awareness. One central question is whether learning occurs separately within modalities (e.g., vision, audition) or whether learning is a-modal. We explored this question using two prominent learning paradigms: statistical learning (SL), referring to learning of transitional probabilities between elements, and artificial grammar learning (AGL), referring to learning the underlying grammar of a set of exemplars. Participants were familiarized with one novel environment: a (a) visual, (b) auditory, or an (c) audiovisual environment consisting of one type of regularities. In Experiment 1 certain elements (shapes, syllables) co-occurred often whilst other elements co-occurred less often (SL). In Experiment 2 sequences of elements adhered to a grammar (AGL). Participants were subsequently tested on their knowledge of these regularities. Two main findings are noted: (a) learning occurred in all three environments and for both types of regularities, supporting the existence of an a-modal learning mechanism(s); (b) Learning of the audiovisual regularities was significantly higher than learning of the visual- or auditory- regularities, suggesting an advantage for multimodal learning. We suggest that learning of regularities from different sensory modalities is accomplished via an a-modal learning mechanism(s) sensitive to multimodal information.

A-0241

PREVENTING DISTRACTION IN REGULAR TONE SEQUENCES

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Infrequent, salient stimuli often capture attention despite their task-irrelevancy, and disrupt on-going goal-directed behavior. This involuntary attention-change (distraction) is often investigated in the oddball paradigm, where frequent standard and infrequent deviant stimuli are presented in a discrimination task. The present study investigated whether abstract knowledge of the stimulus sequence can prevent distraction. Young adults performed an auditory spatial movement discrimination task, where complex tones going left or right were presented. The onset-to-onset inter-stimulus interval was 1.3 s. In the predictable condition, every 7th tone was a pitch deviant, whereas in the random condition, such deviants were presented randomly with a probability of 1/7. Distraction was assessed by comparing deviant trials with the preceding standards. In order to use a conservative estimate of distraction-prevention effects, distraction was assessed for deviants preceded by

4-8 standards in the random condition. Response times, accuracy and MMN amplitudes did not differ significantly between conditions, but the attenuated P3a amplitude in the predictable condition showed that predictability allowed participants to reduce the effects of distraction.

Keywords: attention, distraction, predictability, P3a

A-0242

INTEGRATING SPATIAL INFORMATION ACROSS VISION AND LANGUAGE

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We conducted a study to examine whether spatial information derived from vision and language is integrated within a single spatial representation at the time of learning. In one experiment, participants learned the locations of 6 objects placed around them. Three of the objects were viewed while the other 3 were learned by listening to descriptions of the form "a shoe is placed at 1 o'clock". Then, participants carried out a series of pointing trials involving objects from either the same or different modalities (e.g., "imagine facing the ball, point to the candle"). Results showed that pointing error was lower for same modality judgments compared to different modality judgments. In contrast, latency was equal for same and different modality judgments. Instead, participants were faster when either the orientation object or the target object was visual, demonstrating overall easier access to the visual targets. These findings are discussed in relation to a hierarchical encoding account which allows both an integrated and separate modality-specific representations.

A-0243

HOW DOES STOPPING YOUR RESPONSE INFLUENCE DECISION-MAKING WHEN GAMBLING?

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In a recent study, we examined how executive control in the motor domain influences decision-making in a gambling task (Verbruggen et al. 2012). On each trial, participants had to place a bet. In some blocks, a signal was occasionally presented, which instructed participants to withhold their choice response. We found that, in signal blocks, they not only became more cautious when executing their choice responses (as indexed by longer RTs), they also preferred lower amounts with a higher p(win) in signal blocks compared to no-signal blocks. Thus, stopping-induced motor cautiousness transferred to monetary choice. We will present the results of two studies that further examined how motor control influences gambling. In the first study, we measured eye movements and skin conductance response (SCR) when participants performed the stop-gambling task. We replicated the behavioural effect of stopping. The eye movement data suggested that stopping primarily influenced early decision-making processes. Furthermore, the SCR data confirmed that the results were not caused

by changes in arousal. In the second study, we found that a speed/accuracy manipulation in a secondary task did not influence gambling. We will discuss possible implications for theories of executive control during decision making.

A-0244

EXPERIMENTAL PARADIGMS FOR AN OBJECTIVE DIAGNOSIS OF ADHD

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The diagnosis of attention hyperactivity disorder (ADHD) is often based on subjective semi-structured interviews with childrens' parents and teachers that easily vary from one observer to another. Our study aims at determining the „diagnostic effectiveness“ of several experimental paradigms that we adapted from „basic“ cognitive psychology in the examination of possible cases of ADHD. Fifteen children with ADHD and a group of 15 healthy controls were compared in 10 different tasks that were presented as PC games. The Continuous Performance Test (CPT) was administered for possible correlations. Children with ADHD differed from the control group in different aspects of attention and executive functions including the filtering of relevant visual information and the attentional blink. However, a generalized slowness in the ADHD group may perhaps indicate, in line with recent literature, the presence of motor/pre-motor deficits.

A-0245

DO EMOTION WORDS PROVIDE AN 'INTERNAL CONTEXT' FOR THE PERCEPTION OF EMOTION?

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Lindquist et al., (2006) used a semantic satiation paradigm to explore whether language is important to accurately perceive facial expressions. Participants repeated an emotion label (e.g. 'sad') out loud 3 or 30 times and then decided whether two faces matched or mismatched in emotional expression. Matching decisions were less accurate after participants had satiated an emotion label. They were least accurate when the satiated label matched one or both of the emotional expressions, a 'relevant' label. Findings suggest that emotion labels structure conceptual knowledge important for emotion perception. This knowledge might be organised in a category-specific manner.

This study followed Lindquist et al's., (2006) design, but used non-emotion, rather than emotion words, as irrelevant labels (e.g. 'Pen'). If emotion perception is influenced by access to emotion-specific language then decision accuracy should only be reduced after satiation of an emotion word. However, results showed that decision accuracy was worse after 30 vs. 3 repetitions of both emotion and non-emotion words. These satiation effects were most pronounced for decisions where faces were mismatched in emotional expression. Intermixing emotion and non-emotion word trials may have led to carry-over effects from satiation of emotion words. Subsequent work will assess this possibility.

A-0248

THE EFFECT OF VERBAL AND NON-VERBAL LABELS FOR THE CUES IN PROBABILISTIC CATEGORY LEARNING

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Learning in a well-established paradigm of probabilistic category learning, the Weather Prediction Task (WPT), has been assumed to be mediated by a variety of strategies reflecting explicit learning processes, such as hypothesis testing, when administered to young healthy participants. Higher categorization accuracy has been observed in the task when explicit processes are facilitated. We hypothesized that furnishing verbal labels for the cues would boost the formation, testing, and application of verbal rules, leading to higher categorization accuracy. We also assumed that cue individuation, as well as exposure to the stimulus set would provide facilitative effects evident in participants' learning performance. To test these hypotheses we trained separate groups of participants for three consecutive days to associate hard-to-name artificial auditory cues to pseudowords or hard-to-name ideograms; or to associate stimulus intensity to colors; a fourth group remained unexposed to the cues. Verbal labels, cue individuation, and exposure to the stimulus set each had an additive effect on categorization performance in a subsequent 200-trial session of the WPT using these auditory cues. This study suggests that cue nameability, when controlled for cue individuation and cue familiarity, has an effect on hypothesis testing processes underlying category learning.

A-0249

ADULTS DO NOT RETRIEVE THE ANSWER TO 2 + 3 FROM MEMORY : EVIDENCE FROM SOLUTION TIMES

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It is widely assumed that adults solve very simple addition problems (e.g., 2 + 3) largely by retrieval of the answer from memory (e.g., Ashcraft, 1987; Campbell & Graham, 1985). This conviction is mainly based on the fastness of responses, viewed as incompatible with the use of time-consuming procedures. This retrieval process is assumed to take longer on larger problems due to differences in association strength, thus explaining the problem size effect (e.g., Ashcraft, 1987). However, Fayol & Thevenot (2012) recently found evidence against this claim and favored the use of fast compact procedures on simple addition problems. We present data further corroborating their conclusion. We collected solution latencies on addition problems (sums ranging from 2 to 18) in 90 participants. Main findings are linear reaction time increases on the smallest sums (<7), flat reaction times on medium-sized sums (7-10), and steep non-linear increases on larger sums (>10). Our results favor an explanation where participants use a multi-step procedure on small problems, with the number of steps defined by the size of the operands. Medium-sized problems could be solved by a one-step retrieval process that is invariant in duration. On large problems, participants would use more time-consuming strategies, like decomposition.

A-0250

TRIGGERING LINGUISTIC REPRESENTATIONS OVER SINE-WAVES HIDES RULES

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Consonants are the preferred targets of statistical computations. But it is difficult to learn rules over them. We explore the hypothesis that this difficulty stems from the linguistic roles we assign them by presenting participants with sine-waves. Sine-waves are interpreted as language or as non-linguistic noise depending on context of presentation. In Experiment 1 we presented half the participants with CVCVCV nonsense words in which consonants followed an AAB rule (e.g. first and second consonant were the same, while the third was different). The other half was presented with the sine-wave analogues of the same words in a non-linguistic context. Participants did not learn the rule over the words. Surprisingly, they did learn the rule over the sine-waves. In Experiment 2 we presented exactly the same sine-waves as in the previous experiment, but this time in a linguistic context (participants were trained in the correspondence between speech and sine-waves). Contrary to the previous experiment, participants did not learn the rule over the sine-waves.

Thus, different results are observed over exactly the same stimulus depending on whether it is processed as language or as noise. This suggests that once linguistic representations are triggered, they constrain the extraction of rules.

A-0252

UNCONSCIOUS CROSS-MODAL BINDING: A CHALLENGE FOR GLOBAL WORKSPACE THEORY?

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We set out to evaluate firstly, whether associative learning can take place without conscious perception of the stimuli and secondly, whether this can be achieved where stimuli to be associated are presented in different modalities. We introduce a new paradigm where pairs of words presented subliminally are demonstrated to have been associated by the ability of one word to prime classification of the other. Word pairs consist of male names preceding either a creative or uncreative profession.

Participants first practice classifying the professions as creative or uncreative. Then in each test-trial participants are subliminally exposed to two name-profession pairs where one name is paired with a creative profession and one with an uncreative profession. A supraliminal task follows, where they complete a timed classification of a profession. The presented profession is preceded by either the name with which it was previously subliminally paired (concordant) or the alternate name (discordant).

Experiment 1 presented stimuli auditorily, Experiment 2 visually, and Experiment 3 presented names auditorily and

professionally visually. All three experiments found the same significant inhibitory priming effect with concordant test pairs associated with slower classification judgements. The results demonstrate unconscious cross-modal binding and present a potential challenge to Global Workspace Theory.

A-0253

SELF- AND OTHER-MONITORING OF SPEECH ERRORS.

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The present research investigated the time course of speech error detection, while monitoring one's own and someone else's speech. The perceptual loop theory (Levelt, 1989) assumes that phonologic errors are detected before semantic errors in both self- and other-monitoring. In contrast, the forward-model account (Pickering and Garrod, in press) predicts that in self-monitoring semantic errors are detected before phonological errors and visa versa in other-monitoring. To investigate the error detection pattern we used a speeded picture-naming task in which two participants participated. The participants had to take turns in naming the pictures, when an error was detected both participants had to press a button as fast as possible. Thus the participant that was naming the picture performed self-monitoring, the second participant was performing other-monitoring. Preliminary results show that there was a larger difference in error detection time between self- and other-monitoring for semantic than for phonological errors. Thus semantic errors are detected earlier in self-monitoring and later in other-monitoring than phonological errors. This error detection pattern is most in line with the forward model account.

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A-0254

WHERE IS UPHILL? THE CONTRIBUTION OF VISUAL CUES FOR SLOPE DETECTION IN 2D IMAGES.

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Terrain slope can be used as a source of spatial information for navigation and orientation. Previous studies, however, have shown that there are large individual differences and a remarkable female disadvantage in this ability. In an eye tracking experiment, we investigated the visual stimuli used to solve an orientation task that required identifying the uphill direction of a virtual sloped environment presented through 2D images.

Four types of slope-associated visual cues were examined: floor texture, contours of walls, corner angles, and landmarks. With the exception of corners, all cues were

fixated similarly, indicating that they are approximately equally salient and informative of the slope direction. Furthermore, reliance on the image's bilateral symmetry was suggested by lower performance when facing uphill or downhill compared to when facing sideways.

Men were considerably more accurate than women, although it seems that sexes did not use different strategies. Interestingly, performance correlated with score in a mental rotation task. This indicates that an important factor responsible for females' difficulty with slope might be a disadvantage in mental transformation (rotation) within the reference frame, which might impair the identification of the reference direction (uphill) starting from the orientation given in the presented image.

A-0255

WORKING MEMORY AND INTELLIGENCE IN CHILDREN

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This study explored the structure of working memory, and its relationship with intelligence in 176 typically-developing children in the 4th and 5th grades at school. Different measures of working memory (WM), and intelligence (g) were administered. Confirmatory factor analyses showed that WM involves an attentional control system and storage aspects that rely on domain-specific verbal (STM-V) and visuospatial (STM-VS) resources. The structural equation models showed that WM predicts a large portion (66%) of the variance in g, confirming that the two constructs are separable but closely related in young children. Findings also showed that only WM and STM-VS are significantly related to g, while the contribution of STM-V is moderate. Theoretical implications for the relationship between WM and g are discussed.

A-0256

EXPLORING BOTTOM-UP PRIMING OF CONTROL: TRANSFER OF ATTENTIONAL CONTROL ASSOCIATIONS TO NEW TASK SETTINGS

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The shielding of relevant from irrelevant information processing is a central cognitive control mechanism enabling goal-directed behavior. Recent studies provided evidence for implicit and flexible bottom-up priming of this processing selectivity on the basis of environmental features. The present study investigates such context-specific implementation of the attentional filter by determining the specificity with which the representations of the context-features are linked to settings of cognitive control. We used a version of the context-specific proportion congruence paradigm, in which each context (e.g., location of stimulus presentation) is associated with specific attentional filters (e.g., high vs. low shielding demands). The typical learning phase, in which associations between context and control settings were established, was followed by a transfer block in which either stimuli (Experiment 1) or whole task-sets (Experiment 2) changed. In both experiments, variations in context-specific processing selectivity were also obtained for new stimuli and tasks. These findings point

to the existence of domain-general associations between context-features and the attentional control setting that can be transferred and applied despite major changes in the task setting.

A-0257

READING A NOVEL IN YOUR SECOND LANGUAGE: A COMPREHENSIVE EYE TRACKING STUDY

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Models of eye movements during reading exclusively focus on monolingual reading, even though the majority of people are bilinguals. Until now, few studies examined eye movements in bilinguals and none investigated bilingual sentence processing. They examined eye movement measures on a single embedded target word without taking into account changes in global eye movement behavior (e.g. average saccade length) that L2 reading might entail.

This project assesses differences between native language and L2 reading. We examine a large scale data corpus that we collected from 19 Dutch (L1) – English (L2) unbalanced bilinguals of intermediate to high L2 proficiency. Participants read an entire novel, half in Dutch, half in English, while their eye movements were being tracked. Sentence reading times of matched translation equivalent sentences were fitted within a linear mixed model. L2 reading times were longer than L1 reading times, controlling for average word length and number of words per sentence. We obtained clear interactions of multiple lexical variables with language, irrespective of language density differences between English and Dutch. For example, an extra word per sentence slowed down sentence reading times, but even more so when reading in L2.

A-0258

DO PEOPLE COMBINE CAUSES NORMATIVELY?

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Causal learning models make different assumptions about how people should combine the influence of different potential causes presented in compound. Based on the linear integration rule, some models propose that the causal impact of a compound should equal the linear sum of each of the causes presented in isolation. Other models such as the Power PC theory suggest that the rational way of computing the causal impact of a compound involves correcting the sum of the causes by subtracting the overlap between them (the noisy-or integration rule).

The present experiments tested which integration rule people use. Two different cover stories were used to ensure that the participants understood that the candidate causes were independent. The experiments used different sets of probabilities and several formats for presenting information. The results of all the experiments do not confirm the predictions of the noisy-or integration rule.

People do not appear to spontaneously use this rule. We discuss the implications of our results and alternative explanations for our pattern of data, including inhibitory mechanisms and an averaging heuristic.

A-0259

EVIDENCE FOR GENDER DIFFERENCES IN CHILD RISK ATTITUDE EXPLAINED BY REDUCED SENSITIVITY TO NEGATIVE COUNTERFACTUAL EMOTIONS

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Aim. Counterfactual emotions such as regret and relief play a fundamental role in adaptive decision making. The aim of this study is the understanding of the development of counterfactual emotions and their influence on risky choices. In addition we tested for gender effect in the interaction between the experience of counterfactual emotions and subsequent choices. **Methods.** We tested 3- to 10- year old children in a decision making task in which they have to choose between a high payoff- high risk option and a low payoff- low risk option. We measured participants' affective evaluation of the outcome of their choices with a 5-point Likert scale. **Results.** Results show how females risk significantly less than male starting at 5 years old. This is explained by the early development of the ability to anticipate negative emotions in females only. **Conclusions.** Our study show the development and the gender effect in the experience and anticipation of counterfactual emotions.

A-0260

UPDATING THE EMOTIONAL CONTENT OF WORKING MEMORY IN SOCIAL ANXIETY DISORDER

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The maintenance and updating of emotional content in working memory may influence emotion regulation and anxiety during social situations in social anxiety disorder (SAD). The present study explored the cognitive biases when updating emotional content in SAD. High and low social anxiety individuals performed an emotional 2-back task, and biases were measured according to intrusion cost reaction times, which reflect the conflict between the inhibition of irrelevant content and the activation of relevant content. The results revealed a diminished intrusion cost for irrelevant positive content in the high, but not in the low SAD group. No differences were found for negative or neutral content. These findings suggest that SAD individuals are better at inhibiting irrelevant positive information, a maladaptive cognitive bias that may prevent positive feedback from entering the cognitive system, thereby resulting in up-regulation of negative feelings and anxiety. Thus, bias away from positive content in working memory may play a role in the etiology and maintenance of SAD.

A-0261

THE ATTENTIONAL DYNAMICS OF OLFACTION: EVIDENCE FROM A BIMODAL SWITCHING PARADIGM

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Much research has been devoted to attention processes in the visual and auditory modality. However, research in the olfactory modality traditionally concentrates on perceptual and psychophysical measurements with a primary interest in thresholds and ratings of subjective experience (e.g., pleasantness). Thus, comparatively little is known about how olfactory processing is modulated by attention. The present study employed a novel bimodal attention switching paradigm to examine how selective attention affects objective performance measures (reaction time, RT) using key-press responses. Subjects were presented with olfactory-visual stimulus compounds and were asked to identify either the olfactory (e.g., odor of apple vs. coffee) or visual stimulus (picture of apple vs. cup of coffee) based on a preceding tactile vibration cue. Importantly, olfactory identification performance dropped both in terms of RT and error rate when the immediately preceding trial required visual rather than olfactory stimulus identification ("olfactory attention switch costs"). Moreover, we found that olfactory performance deteriorated with incongruent stimulus compounds relative to congruent compounds, and this congruence effect tended to be stronger for olfaction than for vision, suggesting that vision might dominate over olfaction at least in crossmodal identification paradigms. Taken together, we conclude that olfactory processing is modulated by dynamic, context-specific attention weighting.

A-0262

FEELING THE CONFLICT: THE CRUCIAL ROLE OF CONFLICT-AWARENESS IN ADAPTATION

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In recent years, accumulating evidence suggested that some expressions of cognitive control can be triggered by unconscious stimuli. For example, several studies showed adaptation to unconscious response conflict. However, some authors argued that subjects were actually aware of the conflict in all these studies on a metacognitive level. For example, if subjects consciously sense that masked incongruent trials are more difficult than masked congruent trials, they can use this metacognitive information to adapt behavior. Although theoretically plausible, no direct empirical support for this claim has yet been provided. Therefore, we performed a masked priming study in which we carefully questioned participants' conflict awareness on each trial. Our results showed that conflict awareness plays a crucial role in this process of cognitive adaptation. We found that the Gratton effect, a hallmark of cognitive control, was only observed following trials on which subjects were aware about the presence of a conflict. Our results go even further, by suggesting that erroneous

conflict awareness can trigger adaptation, in the absence of actual conflict. We conclude that conflict awareness, and not conflict per se, is the crucial factor underlying cognitive adaptation effects.

A-0263

FALSE MEMORIES AND COGNITIVE RESERVE: EDUCATION PROTECTS AGAINST FALSE MEMORIES IN YOUNGER, OLDER AND VERY-OLD INDIVIDUALS

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In this study, we examined the influence of education on the production of DRM false memories in 4 groups of participants: Young adults (ranging from 18 to 30 years old), middle-aged adults (from 40 to 50) older adults (from 60 to 70 years old) and very old individuals (above 80). These participants were divided in 2 categories: "high" vs. "low" education (e.g., Christensen et al., 1997). We found that overall, compared to younger adults, older adults were more likely to fail recalling studied items and to erroneously remember non-presented critical lures. However, in all age groups, participants with higher education produced more correct responses and less false memories of non-presented critical lures. In addition, compared to the participants in the "low education" group, they were more likely to report using more complex strategies at encoding and retrieval.

A-0264

THE SIMON EFFECT ACROSS TASKS: BOUNDARY CONDITIONS FOR CONTROL

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The Simon effect is often viewed as a good example of the tight relation between perception and action. We examined boundary conditions for control by creating a Simon effect across tasks. Subjects performed two tasks simultaneously. In the first, two-tone discrimination task subjects responded with either a left or right button. In the second, shape task, subjects named one of two shapes presented bilaterally on the basis of its color (red or blue). An across-tasks Simon-like compatibility effect was found between the input side of the relevant shape and the output side of the manual response in the tone task. These results suggest that perception and action use the same spatial representation, even when the spatial information comes from two distinct tasks, and even when the spatial information of the input is task irrelevant. Manipulation of the SOA between the two tasks (0, 150, 450 ms) did not eliminate the across-tasks Simon effect in the short (0, 150) SOA conditions. Elimination of the speeded response for the shape task did eliminate the effect. We discuss control settings that fit our pattern of results.

A-0265

MOTOR SIMULATION IN JOINT ACTION: EVIDENCE FROM PERFORMING AND IMAGINING COORDINATED JUMPING

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We perform many of our actions not in isolation but together with other people. This often requires close coordination of our own action with a partner's action in order to achieve a shared goal. In two studies, we investigated the mechanisms underlying such coordinated joint actions: Participants performed (Study 1) or imagined (Study 2) simple forward jumps of varying length with the goal of synchronizing their landing times with those of another person. Crucially, online perceptual feedback about the task partner was not available so that participants had to make predictions about the timing of the co-actor's jumping. Analyses of participants' actually performed or only imagined movements indicate that they specifically adapted the onset of their own jumping to how much closer or farther their own jump distance was compared to their partner's. This suggests that (1) participants planned their own (imagined) jumping with respect to the joint action goal of landing synchronously and that (2) they did so by simulating their own and the co-actor's actions using their own motor system. Together, the two studies provide compelling evidence for an online integration of action simulations used to achieve close temporal coordination of joint actions.

A-0266

EXPLORING RETENTION AND FORGETTING OF VISUAL OBJECT SEQUENCES IN WORKING MEMORY

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Two experimental sets are briefly reported, examining the factors that determine retention vs. forgetting of short sequences of visual objects in working memory. In a first experimental series, concurrent attentional load was manipulated during sequence encoding. Equivalent effects of increased load were observed on feature and binding memory, with these disruptive effects limited to the earlier positions in the sequence. Error analysis indicated that attentional withdrawal primarily results in representational loss, with some increase in 'binding errors' also observed. A second series of experiments examined attentional filtering and interference, adding a to-be-ignored 'suffix' object following target sequences. In contrast to the effects observed in the attentional load experiments, this manipulation only reliably impacted on later sequence positions, primarily through object overwriting. Together, these findings indicate that different factors are important for retention across different points of a visual sequence in working memory.

A-0267

AGE DIFFERENCES IN EXECUTIVE ENGAGEMENT DURING WORKING MEMORY UPDATING DEPEND ON MEMORY LOAD

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Applying the rational of the Compensation-Related Utilization of Neural Circuits Hypothesis (CRUNCH; Reuter-Lorenz and Cappell, 2008) model to the the involment of executive-control processing in an updating working memory task, we used a cognitive-correlational approach to test the hypothesis that age-related differences in working memory-executive control correlations may vary as a function of memory load. Consistent with CRUNCH predictions results support the idea that older adults show greater recourse to executive control at lower memory loads, when in young adults this phenomenom appeared only at high memory loads. They also show that age-related differences in the reliance to executive-control can better be attributed to individual variations in working memory span. Finally, in older adults, greater recourse to executive-control at low memory loads was associated to equivalent performance across age groups, suggesting that the greater recourse to executive control in older adults may serve a compensatory function when task demand is low. Overall these results support the validity of CRUNCH model also as an account of age-related differences in executive control engagement.

A-0268

MAP LEARNING IN YOUNG AND OLDER ADULTS: WHAT IS THE EFFECT TO RE-PRESENT THE MAP IN RECALL PHASE?

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The aim of this study was to shed light on whether age-related differences between young and older adults in mental map representation are attributable to memory or to spatial representation issues. Two experiments were conducted where participants studied a map and then performed recall tasks (verification test and pointing task, aligned and misaligned with the map) without map (Experiment 1) or with the map available (Experiment 2). Nineteen young (aged 20-30) and 19 young-old adults (aged 65-74) took part in Experiment 1; and 19 young (aged 20-30), 19 young-old (aged 65-74), and 19 old-old adults (aged 75-84) in Experiment 2.

The results of both experiments showed that older adults performed less well than young adults in both spatial tasks. Older adults also fared worse in misaligned than in aligned pointing tasks.

Experiment 2 additionally showed that having the map to consult helped both young and older adults to learn the environment: all participants did better when the map was available in the aligned pointing task, but not in the misaligned pointing task. Overall, our results suggest that older adults' problems with environment learning relate to spatial representation issues as well as memory impairment.

A-0269

EXECUTIVE CONTROL IN NORMAL AND PATHOLOGICAL AGING: A COMPARISON OF A CLASSIC TASK SWITCHING PARADIGM AND A VOLUNTARY TASK SWITCHING PARADIGM

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The purpose of this study was to give a ruling on the decline of executive control with advancing age. Although many studies have attested this deficit in aging, the meta-analysis of Verhaeghen (2011) moderated this result by showing an age-related-deficit in tasks of divided attention but not in tasks of selective attention. Our main goal was to show that the presence or absence of an age-related deficit was more linked with the amount of control involved into the tasks than with the tasks themselves. Our secondary goal was to investigate the efficiency of executive control in Alzheimer disease. In Experiment 1, a standard task-cuing procedure was administered to young adults, older adults and people with an Alzheimer Disease Type (ADT). Results showed that the switch cost (SC) was the same for the two first groups but decreased in the ADT group. In Experiment 2, a voluntary task switching paradigm was administrated to the same groups. Results showed that the SC was greater for the older group than for the young group but tended to decrease again in the ADT group. These findings are explained in terms of top-down and bottom-up mechanisms involved in the switching task.

A-0271

RELATION OF HOT AND COLD EXECUTIVE FUNCTIONS WITH MINDFULNESS

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Aim: Mindfulness involves nonjudgmental attention to present-moment experience. This study investigated the link between self-reported mindfulness and hot- (emotional and social skills) and cold (cognitive) executive control processes. **Method:** The study addresses the relationship between a dispositional measure of mindfulness (FFMQ, Baer et al., 2006) and measures of attention, cognitive inhibition (Stroop interference task), working memory tasks, cognitive flexibility (Necker cube illusion). Beside these tests of cognitive executive functions neuropsychological measures of emotions were used, as well.

Results: Overall the results suggest that working memory, Stroop-interference and cognitive flexibility are positively related to levels of mindfulness.

Correlations between self-reported mindfulness and all cognitive executive measurements were of moderate to high strength. Furthermore, Necker cube illusion measuring cognitive flexibility could be used as an objective tool for measuring mindfulness abilities. On the other hand emotional and social skills measurements exhibited a negative correlation with self-reported mindfulness (especially with Nonjudging factor).

Conclusions: This pattern of results suggests that mindfulness is intimately linked to improvement of executive functions and cognitive flexibility. Emotional functions tend to show an inverse pattern, explained by the fact that mindfulness-based interventions are focusing on reduction of emotionality. The relevance of these findings for mental balance and well-being are discussed.

A-0272

MUSICAL RESONANCE: TEMPORAL HIERARCHIES AND DYNAMIC ATTENDING
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Of the several parallels which can be drawn between music and speech, of present interest is 'rhythm'. More specifically, I am interested in metrical structure: the regular alternation of elements (beats or syllables) that are perceived as 'strong' or 'weak'. I will suggest that there is a preference for regularity, and that this regularity enhances music and speech processing via entrainment of neuronal oscillations to a regular rhythm as suggested by the Dynamic Attending Theory whereby attentional rhythms are said to become phase-locked to the external auditory events. I will present some data showing how the system tunes to temporal structure, and how this in turn influences the processing of co-occurring events. I will also present some data suggesting that metre perception in speech and music is dependent on similar mechanisms, and, to take this further, that carry-over effects after a regular stimulus has ended (such as entrainment or the continuation of a memory trace) may infringe upon the perception of a following auditory event in a cross-domain manner.

A-0273

SITUATIONAL FLUID INTELLIGENCE

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Intelligence is often viewed as composed of two components: Crystallized Intelligence, which is knowledge and skills acquired by past experience, and Fluid Intelligence which involves a set of abilities such as reasoning required for dealing with novelty and problem solving (Carroll, 1993). For years there was a widespread belief that Fluid Intelligence is a stable trait (Jensen, 1969; Plomin, 2004). This assumption is challenged by recent findings indicating that Fluid Intelligence can be altered by long term working memory training (Jaeggi, et al., 2008). In an experiment, we additionally show that Fluid Intelligence is subjected to short term situational influences. Participants who applied a simple instructed rule (regarding a letter-digit stimuli), before being tested on Raven's Progressive Matrices test (Raven, 1962), demonstrated a significant drop in performance (increased number of errors). Additional experiments are underway.

A-0274

ATTENTION MODULATES BINDING: ONLY ATTENDED DISTRACTORS ARE USED FOR THE RETRIEVAL OF EVENT FILES.

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Response irrelevant stimuli can be encoded with and later on retrieve a response given to a relevant stimulus, an effect called distractor-response binding. This mechanism has been shown to be restricted to certain conditions (for example, Gestalt principles modulate whether the

irrelevant and relevant stimuli appear to belong together and thereby modulate distractor-response binding). In five experiments we investigate whether the allocation of attention modulates distractor-response binding. Participants identified letters via key presses while attending to one of two sets of simultaneously presented but response irrelevant stimuli. Both spatial and feature-based attention was allocated to response irrelevant stimuli. The results showed that only attended distractors elicited effects of distractor-response binding. In particular, while the encoding of distractors and responses was not affected by attention, retrieval only occurred if the distractor triggering the response was attended.

A-0275

INTERFERENCE OF CONSONANT/VOWEL LETTER CATEGORIZATION ON PHYSICAL AND NOMINAL IDENTITY JUDGMENTS

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Previous studies reported a distinct influence of consonants and vowels in written word recognition. These findings suggest that letters are categorized as consonants and vowels during visual word processing.

The aim of the present study was to test whether this categorization is automatic. The prediction was that it should be more difficult to decide that two letters are different when they belong to the same category rather than not. Participants performed three same-different tasks on letter pairs: a physical identity (AA, dd), a nominal identity (Aa, Dd) and a categorical identity (Gf, aO) judgment task. In the two first tasks, 'different' trials included pairs of letters belonging to the same category (AE, dF) or not (EP). In the nominal task, 'different' responses were longer for same category-pairs like 'AE' than for different category-pairs like 'EP'. No category effect was observed in the physical task. The interference in the nominal task suggests that the perceptual system rapidly categorizes letters as consonants or vowels. Physical identity processing may be too fast to be influenced by letter category.

A-0276

THE EFFECT OF OBJECT-VALENCE RELATIONS ON AUTOMATIC EVALUATION

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Two experiments tested the effect of co-occurrence of a target object with affective stimuli on deliberate and automatic evaluation of the target when the relation between the target and the affective stimuli suggests that they have opposite valence. Participants learned about targets that ended an unpleasant noise or a pleasant music. The valence of such targets is opposite to the valence of the affective stimuli that co-occur with them. Participants reported preference for targets that ended noise over targets that ended music, but automatic evaluation measures revealed the opposite preference. This suggests that automatic evaluation is sensitive to co-occurrence between stimuli more than to the relation between the stimuli, and that relational information has a stronger influence on deliberate evaluation than on automatic

evaluation.

The importance of these results is that they contribute to the examination of fundamental assumptions of contemporary theories of evaluation and that they contribute to the investigation of the differences between automatic and deliberate evaluation.

The conclusions of the present study support the Associative-Propositional Evaluation model (Gawronski & Bodenhausen, 2006), and add evidence regarding the sensitivity of the Evaluative-Conditioning effect to relational information.

A-0278

TEMPORAL COINCIDENCE BETWEEN PRIMING AND IMPLICIT RECOGNITION

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We investigated the temporal dynamics of perceptual priming and implicit recognition. In Experiment 1, participants repeatedly judged the number of colors in meaningless kaleidoscope images. A significant priming occurred for 250 ms of previous stimulus exposure and, surprisingly, 350 ms of exposure resulted in no significant priming. This "rise and fall" pattern of priming in the present experiment suggests that the efficiency of perceptual representations may change by the influence of bottom-up processing. In Experiment 2, we tried to offer first behavioral evidence that priming and "implicit recognition" depends on similar perceptual representations. Implicit recognition is a kind of recognition memory without awareness of memory retrieval. As in Experiment 1, a significant implicit recognition occurred for 250 ms studied images, but 350 ms of exposure led to no significant implicit recognition. This temporal coincidence between priming and implicit recognition suggests that similar unconscious representations are obtained and referred to in these different memory tasks.

A-0279

THE RELATION BETWEEN BABY SCHEMA AND PERCEPTION OF AGE, BEAUTY OR CUTENESS

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Baby schema ('Kindchenschema') is a set of infantile physical features that is perceived as cute and motivates caretaking behavior in other individuals. This effect of baby schema may appear also in adult faces, and may expand into beauty. In this study, we investigated the relation between baby schema features and perception of age or judgments of beauty and cuteness for Japanese university students.

We assessed baby schema by measuring the physical facial features. The results showed that baby schema features such as high forehead and big eyes in adult faces were related to the judgments of beauty and cuteness, but that this relation differed by the gender of participants. Female participants judged beauty and cuteness in a similar way, but male participants did not. In contrast, baby schema features were not related to the perception of age, and this result did not differ by the gender of participants. The faces of approximately the same age, therefore, do not always look younger by the baby schema features. We suggest

that the link between baby schema and cuteness differs by gender. We also found that female participants tend to judge beauty and cuteness on the basis of similar facial features.

A-0280

POSITIVE AND NEGATIVE EFFECTS OF AUDITORY RHYTHMIC ATTENTION ON VISUAL RECOGNITION PERFORMANCES.

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The aim of the studies presented here was to examine if the oscillations of auditory attention entrained by a background rhythmic sequence would influence performances in visual recognition tasks. In a first study, 32 subjects performed a lexical decision task on 5-letter strings (words and non-words). Each item was presented in two consecutive parts. Part 1 could either correspond to the correct or incorrect first syllable and could be displayed either in-synchrony (on-beat) or out-of-synchrony (266 ms off-beat) with the auditory rhythm. On-beat presentation of the correct first syllable decreased lexical decision times as compared to off-beat presentation. However, on-beat presentation of an incorrect first syllable led to an aggravated cost in word recognition. In a second study, we used a Posner-like paradigm in which an arrow pointed or not to the position of a subsequent visual target. A congruent priming arrow led to shortened reaction times. But contrary to the previous experiment, we found no significant interaction between the synchrony of the arrow and its congruency with the position of the following target. Thus, we will discuss the nature of the processes (early-perceptual, central or late-motor) that can be modulated by the oscillations of auditory rhythmic attention.

A-0281

ANGRY WORDS... BOUNDARY CONDITIONS OF FEATURE-RESPONSE BINDINGS FOR DIFFERENT VOICE FEATURES

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Spoken stimuli are a special kind of auditory stimuli. Aside from mere physical features, they also carry socially relevant information like the gender, age or emotional state of the speaker. We investigated how binding processes between such voice features and the response would be modulated by the specific task representation. Participants had to react with two response keys to the recordings of eight different words. In all experiments there were two different instruction conditions: half of the participants learned the eight stimulus-response mappings (SR) by heart, and the other half applied a binary semantic task rule. The critical manipulation was the (always task irrelevant) social voice feature. To this end, the words were either recorded with two speakers of different gender (Experiment 1), or age (Experiment 2), or with the same speaker but with a different emotional prosody (Experiment 3). In the SR condition, in all experiments, a significant interaction of voice-feature repetition by response repetition was found, indicating

binding between the task-irrelevant voice features and the response. The application of task rules, however, reduced these repetition effects, indicating that the shielding function of task rules repeatedly observed for abstract visual stimulus features also applies to human voice features.

A-0282

FORGETTING OVER SECONDS: ATTENTION AND THE ROLE OF THE HIPPOCAMPUS IN BINDING FEATURES IN MEMORY

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The mechanisms underlying rapid forgetting remain controversial. New methods to measure the precision of short-term memory using a continuous, analogue response space (rather than binary yes/no reports) provide a potentially more sensitive means to probe this issue. Here we use such techniques to examine the nature of rapid forgetting in healthy people and an unusual group of patients with focal medial temporal lobe (MTL) lesions. MTL patients exhibited larger errors over short delays specifically when several items had to be remembered, but not for a single item. Crucially, their errors were strongly associated with an increased tendency to report the property of the wrong item stored in memory, rather than simple degradation of precision. Thus, memory for isolated aspects of items was normal, but patients were impaired at binding together the different properties belonging to an item. Such binding errors support the view that the MTL is involved in linking together different types of information, regardless of memory duration. Intriguingly, even in healthy humans, introducing a visual search task during maintenance also disrupted recall, with increasing frequency of such misbinding errors. One mechanism underlying rapid forgetting therefore appears to be corruption of feature bindings belonging to items held in memory.

A-0283

MODALITY-FREE SEQUENCE LEARNING

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In the two experiments to be presented, we focus on implicit sequence learning 1) testing whether sequences are learnt when they are only present at the modality-independent abstract level of semantic categories, and 2) examining whether the acquired knowledge can be transferred from abstract categories to specific items and across modalities. In a modified version of the Serial Reaction-Time task task, participants were presented with pictures in four categories, and their task was to respond according to the category. Specific pictures within each category appeared in a random order. Results showed that learning takes place even in the absence of one-to-one stimulus-response correlation, when the sequence is only present at the level of abstract semantic categories. In another experiment using an Artificial Grammar Learning task, participants were exposed to auditory sequences of categories in the training phase, while in the test phase, specific tokens were used, presented

either auditorily or visually. Results showed that sequence learning takes place, but the transfer of knowledge from category to token information is not possible unimodally, only crossmodally. Taken together, results point to the existence of an abstract level of representation in sequence learning that is not tied to perceptual features of the input.

A-0284

MODALITY DOMINANCE AMONG EFFECTOR SYSTEMS

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Flexibility in configuring task-sets allows us to adequately respond to environmental stimuli in different contexts, such as in dual-task situations. In the present study, we examined to what extent response control is influenced by the modality of a concurrently executed response. In Experiment 1, participants responded to auditory stimuli with either vocal responses and/or saccades. In Experiment 2, vocal responses were combined with manual responses. In both experiments, we found asymmetric dual-response costs, that is, the response time difference between single- and dual-response conditions varied between response modalities. Importantly, the same (vocal) response showed substantial dual-response costs when combined with saccades (Experiment 1), but no such costs when combined with manual responses (Experiment 2). Experiment 3, combining saccades with manual responses, revealed stronger dual-response costs for manual responses than for saccades. Together, these findings suggest an ordinal dominance pattern among response modalities, similar to previously reported modality dominance patterns on the input side of processing. We interpret these findings in terms of flexible, response-based resource scheduling during task-set configuration.

A-0285

NO DEFICIENCY IN LEFT-TO-RIGHT PROCESSING OF WORDS IN DYSLEXIA BUT EVIDENCE FOR ENHANCED VISUAL CROWDING.

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Whitney and Cornelissen (2005) hypothesized that dyslexia may be the result of problems with the left-to-right processing of words, particularly between the word beginning and the reader's fixation position. To test this hypothesis, we tachistoscopically presented consonant trigrams at locations from -2.5° to 2.5° in the two visual fields (LVF, RVF) to 20 undergraduate students with dyslexia and 20 matched controls. Participants had to identify the letters and accuracy rates were compared. In line with the predictions of the SERIOL model of visual word recognition, a U-shaped pattern was found at all retinal locations. Accuracy also decreased the further away the stimulus was from the fixation location, with a steeper decrease in the LVF than in the RVF. However, the students with dyslexia showed the same pattern of results as the control participants, also in the LVF, apart from a slightly lower accuracy rate, particularly for the central letter. The latter

is in line with a possible enhanced crowding in dyslexia. In addition, in the dyslexia group but not in the control group the degree of crowding correlated significantly with the word reading scores suggesting that in dyslexia lateral inhibition between letters is associated with word reading performance.

A-0286

CROSS-LANGUAGE DIFFERENCES IN MOTION VERBS: NOW YOU SEE LINGUISTIC RELATIVITY, NOW YOU DON'T

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How do language and thought relate to one another? The question has been mainly addressed by determining whether systematic cross-linguistic differences are reflected in corresponding performance differences in linguistic or non-linguistic tasks. Linguistic relativity tends to be supported by linguistic tasks but not by non-linguistic tasks. The novelty of the present study is that it uses a task – judging the plausibility of event descriptions – that has a strong mix of linguistic and cognitive processes. Two experiments tested for differences in this task using event descriptions involving motion verbs between English and Italian (which systematically differ in their treatment of motion; they are, respectively, satellite-framed and verb-framed languages). Experiment 1 showed no cross-language differences, in finding that native speakers of both languages processed ideas about the path of the motion event, faster than ideas about the manner of the motion event. Experiment 2 showed cross-language differences in a specific subset of manner-of-motion verbs, as they were processed more slowly in Italian than in English. Thus, the results show that while, in general, linguistic relativity is not supported, in specific narrowly-defined cases, it can be shown to impact plausibility judgements

A-0287

ELECTROPHYSIOLOGICAL CORRELATES OF COGNITIVE CONTROL IN INTERMODAL CONFLICT RESOLUTION

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During goal-directed behavior, it is important to focus on what is task relevant and to ignore irrelevant information. For this purpose we use cognitive control. Behavioral studies have shown that more control is exerted following stimuli that activate conflicting responses (incongruent stimuli). Furthermore, neuroimaging studies have revealed which brain areas participate in this control process. More precisely, conflict is detected in the anterior cingulate cortex (ACC) and control is implemented in frontal areas and sensory areas processing relevant stimulus features (e.g., Egner & Hirsch, 2005). However, little is known about the speed at which frontal cognitive control systems dynamically change stimulus processing in sensory areas during control implementation. In this study, we used EEG to address this question. A cued multimodal conflict paradigm was used. Participants were cued to pay attention

to one modality (visual or auditory). Next, a multimodal target (letter 'o' or 'i') was presented and participants had to identify the letter in the relevant (cued) modality. Target letters in the two modalities could be congruent or incongruent. Conflict detection in frontal areas as well as rapid control implementation in relevant sensory areas following conflict are investigated. Most importantly, connectivity patterns between these areas are revealed.

A-0288

WORKING MEMORY BINDING AND ATTENTIONAL GUIDANCE: CONSTRAINING EFFECTS FROM MAINTAINING AND FLUSHING INFORMATION FROM WORKING MEMORY

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Information held in working memory (WM) can modulate how attention is allocated in subsequent displays, and this provides an indirect way of assessing the nature of the representations in WM. We examined whether the WM representations guiding visual attention reflect the 'bound coding' of visual features, and whether the representations change under conditions in which information in WM has to be maintained or forgotten ('flushed' from WM). We provide evidence for feature binding when representations are maintained in WM, but also for the disruption of binding relationships when stimuli have to be flushed from WM. The data point to important differences between maintaining and releasing information from WM.

A-0289

WHICH THOUGHT IS IMPORTANT? THE AFFECTIVE SELF-REGULATION OF THINKING IN A PROMOTION VS. PREVENTION MIND-SET

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The main hypothesis of this study is that implicit attitudes toward task-relevant objects determine the directions of thinking by actively placing objects within a scope of attention. Directions of thinking depend on a mind-set and a task. We applied the Promotion-Prevention Self-regulation Scale as a measure of mind-set during thinking in the Wason Selection Task (a real-life version). The study was conducted via the internet, N= 109. Directly after learning of the task, the participants evaluated (in affective priming paradigm) the objects that constituted the task's content. The positive evaluation of correct (solving problem) objects by the prevention-focused individuals suggests their sensitivity to useful information for falsification and is consistent with their tendency to cautiously self-control their thinking. Promotion-focused individuals positively revalued incorrect objects: one leading to the confirmation fallacy and the other indicating the error of denying the antecedent. In accordance with our expectations, the promotion-focused individuals valued and automatically attended to objects that appeared in shallower processing: ones that confirm the rule and assume reversibility of the implication, although they ultimately solved the problem well.

A-0290

STRATEGIC FLEXIBILITY IN RESPONSE PREPARATION: EFFECTS OF CUE VALIDITY ON REACTION TIME AND PUPIL DILATION

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This study examined the ability of participants to strategically adapt their level of response preparation to the predictive value of preparatory cues. 24 Participants performed the finger-precuing task under three levels of cue validity: 100%, 75%, and 50% valid. Response preparation was indexed by means of reaction time (RT) and pupil dilation, the latter providing a psychophysiological index of invested effort. Results showed a systematic increase in RT benefits and costs (generated by valid and invalid cues, respectively) with increments in the predictive value of the cues. Converging with these behavioral effects, pupil dilation also increased systematically with greater cue validity, suggesting more effortful response preparation with increases in the proportion of validly cued trials. Furthermore, when cues were not 100% valid, RT benefits were stronger but pupil dilations weaker for cues preparing fingers on one hand compared to cues preparing fingers on two hands. This outcome bolsters the notion of more automatic within- than between-hands preparation. Together, our findings confirm the hypothesis that response preparation is flexible and that it can be strategically allocated in proportion to the relative frequency of valid/invalid preparatory cues.

A-0291

CATEGORY SPECIFIC RESPONSES TO HUMAN GENDER FACE STIMULI: A VISUAL MISMATCH NEGATIVITY STUDY

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In the present study, we investigated the possibility of automatic discrimination of unattended female and male faces. On this end, we examined this issue by method of event-related potentials (ERPs), particularly the visual mismatch negativity (vMMN). This component elicited by violation of sequential regularity established by environmental stimulation.

The emotionally neutral female and male faces were presented with 300 ms stimulus duration. The vMMN-related stimuli were delivered in passive oddball paradigm i.e. the stimuli were independent of the visual detection task. In Experiment 1 the stimuli were presented with 400 ms inter-stimulus-interval (ISI) and in Experiment 2 with 2250 ms ISI. In both experiments the electrophysiological data showed that, the infrequent faces elicited parieto-occipital negativity with 350 ms peak latency, relative to the frequent faces. These components are considered as a valid vMMN that is generated by automatic detection of gender category change. Additionally, the N1/N170 face- related component was sensitive to ISI effect i.e. using longer ISI, the face stimuli elicited pronounced N1/N170 component. The pattern of results can be interpreted as evidence for

the comparison of the representation of the regularly (standard) and irregularly (deviant) presented gender categories were capable of eliciting vMMN.

A-0292

GENDER-TO-ENDING CONSISTENCY AND AGREEMENT PROCESSING IN ITALIAN: TWO INDEPENDENT EFFECTS?

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Behavioral studies on gender-to-ending consistency in Romance language showed that people take advantage of these word-form cues when judging gender identity or agreement. However, it is still unclear when the linguistic processor identifies word-ending cues to gender, and whether this information affects syntactic agreement processing. This ERP study investigated the time course of gender agreement processing with Italian nouns whose word ending was a reliable or a misleading cue to gender (transparent, irregular nouns). The nouns were preceded by gender agreeing or disagreeing determiners and were embedded in sentences. The ERPs on target nouns showed main effects of Transparency and Gender Agreement. Specifically, transparent nouns elicited an increased frontal negativity (350-750 ms) and a posterior positivity (750-950 ms) compared to irregular nouns. This suggests that the system is sensitive to gender-to-ending consistency from early stages of processing and that this information remains available until later processing stages. In addition, gender agreement violations evoked a LAN (350-500 ms) followed by a P600 (550-950 ms). The lack of interaction between Agreement and Transparency suggests that agreement processing is relatively unaffected by gender-to-ending consistency.

A-0293

THE TEMPORAL DYNAMICS OF HOW PICTURE NOVELTY INFLUENCES CONFLICT PROCESSING

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Cognitive control processes are important to guide goal-directed behavior in everyday life. These processes have been investigated, among other approaches, in conflict-inducing tasks (like the Stroop task) in which conflict has to be resolved by overcoming the influence of task-irrelevant information that usually automatically triggers a competing response. Recently, Krebs et al. (2013, *NeuroImage*) have shown that manipulating the relative novelty of the relevant stimulus (picture) can influence the interference of the irrelevant stimulus (word) in a picture-word interference task. The fMRI results of this study suggested that the effect might be due to the perceptual prioritization of the novel information rather than the active resolution of conflict. Yet, such a distinction between perceptual and cognitive-control influence is limited by the lack of temporal information. In the current study we thus further explore this hypothesis by using EEG. Analogously

to the fMRI study, participants performed a picture-word interference task in which half of the task-relevant pictures were previously shown in a familiarization phase, while the other half of the pictures were novel. The results indicate temporally dissociable effects related to sensory stimulus processing and conflict detection/resolution, thus extending our understanding of the temporal dynamics of these interrelated neural processes.

A-0294

WHICH DIMENSION OF MOOD CAN MODULATE THE MISINFORMATION EFFECT: VALENCE OR AROUSAL?

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Very few studies have examined the influence of induced mood on the creation of false memories with the misinformation paradigm (Loftus, 2005). However, the affective factor seems crucial since it is likely to act at different times in eyewitness situations (when one witnesses a specific event, when he is questioned about what he saw or heard, etc.; Forgas et al., 2005). The purpose of this study is to determine which of the following two dimensions, emotional valence or arousal, can modulate the misinformation effect when the mood is induced before the retrieval stage. Thus, one week after the presentation of a fictional event and exposition to misleading information about it, we induced participants in one of four moods (happiness, anger, serenity or sadness) just before testing their memory of the situation. According to our results, valence does not influence the misinformation effect, whereas arousal does for peripheral aspects of the event. Indeed, moods with high arousal (happiness, anger) induced before memory testing immunize individuals against the misinformation effect. Thus, this finding seems to confirm the protective effect of high arousal on memory when the cognitive system has been exposed to misleading information (English & Nielson, 2010).

A-0295

FLUENCY NEEDS UNCERTAINTY

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Processing fluency has strong influences on our evaluations. For preference or truth judgments it has been shown that the easier a stimulus is to process, the higher the preference or truth judgment. Fluency effects have reliably been observed using line drawings, simple patterns, or words. In contrast, in some studies using more complex stimuli, such as faces or artworks, we fail to find a relation between fluency and preference. We suggest that these divergent findings owe to different degrees of uncertainty in the experimental settings. Uncertainty can be manipulated, for example, by hampering perception, varying the subjectivity of rating dimensions, or, more general, creating an uncertain experimental context. In our experiments we studied the effect of perceptual fluency on different stimulus categories and rating dimensions. For simple line drawings, results suggest that fluency effects require a certain amount of uncertainty due to both stimulus perceptibility and rating dimension. Specifically, fluency effects were observed for hard to perceive stimuli

and only when using a more subjective rating. This indicates that uncertainty might be important for the fluency effect. Furthermore these results can explain why certain studies that used more complex material fail to find a fluency effect.

A-0296

ERP INVESTIGATION OF OBJECT-SCENE INCONGRUITY: THE EARLY MEETING OF MEMORY AND PERCEPTION

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The present study investigated the timecourse of the interactions between visual perceptual processes and conceptual knowledge while manipulating object-context semantic congruity. Participants categorized objects that were either congruent (e.g., a broom in a kitchen) or incongruent with their context (e.g., a tiger in a street) as natural or man-made, while we recorded event-related brain potentials (ERPs). Unlike previous work that found an effect of congruity starting at ~ 270 ms post-stimulus (Mudrik, Lamy, & Deouell, 2010), the earliest sign of reliable context congruity effect arose at ~ 170 ms in the present study. This finding suggests early interactions between perceptual and knowledge-based memory processes during a conceptual categorization task. The semantic congruity effect was also associated with N300 and N400 effects, reflecting object model selection and semantic processing stages, respectively. All together, these findings bear specific implications for the modeling of object recognition in scenes, and more broadly on the impact of memory on visual processing.

A-0297

THE ROLE OF MOTOR PREDICTION IN ATTENUATION OF SENSORY ACTION-EFFECTS

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Sensory attenuation refers to the fact that events that are triggered by human actions are attenuated both in terms of their reported strength and their neuronal response. This phenomenon is normally described with reference to forward action models, such that the processing of sensory events predicted by our actions is reduced. We systematically investigated the role of temporal prediction, temporal control, identity prediction and motor prediction in previous studies of sensory attenuation. This analysis reveals a number of potential difficulties in unambiguously ascribing sensory attenuation to be caused by motor prediction. However, we present data from a series of EEG and behavioural studies which support a role of identity-specific motor prediction in this phenomenon. We further propose a possible mechanism by which action-effect prediction might drive sensory attenuation by preactivating sensory brain regions associated with the predicted effect. This theory allows us to generate and test novel predictions regarding the processing of sensory action-effects.

A-0298

„RED“ MATTERS WHEN NAMING „TOMATO“ : THE CASCADING ACTIVATION OF COLOR PROPERTIES DURING OBJECT NAMING

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Are object's visual properties phonologically activated when the speaker only has the intention to name the object itself? Recent findings argued for a "limited-cascading" view of spoken word production: non-target object's properties wouldn't cascade up to the phonological level (e.g., Dumay & Damian, 2011). To account for these results, authors claimed that object identity always has priority over properties in the cascading of information. In two experiments, we tested the possibility that object's properties cascade anyway, when they are particularly salient or contextually appropriated. In Experiment 1, participants named objects displayed in their canonical color (i.e., a red tomato, a yellow lemon). Auditory distractor words that were phonologically related to object's color yielded longer naming latencies than control words. This suggests that non-target canonical colors were phonologically activated. In Experiment 2, participants a target colored line-drawing displayed among black and white objects. Latencies were shorter when there was a phonological overlap between the name of the target object and its color. This suggests that non-target colors activate their phonological features when they are pertinent as regard of the production context. Our findings give further insight into the mechanisms that constraints cascading during object naming.

A-0299

RECREATIONAL COCAINE USE IS ASSOCIATED WITH A MAJOR VULNERABILITY TO SEMANTIC INTERFERENCE

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Since 2007 cocaine is Europe's second preferred recreational drug after cannabis. Little is known about cognitive impairments in language production in the upcoming type of recreational cocaine polydrug user. We studied whether these participants, who do not meet the criteria for abuse or dependence, show impairments in semantic interference using a blocked-cycled naming task (Damian, Vigliocco, & Levelt, 2001). Sixteen controls and sixteen recreational cocaine polydrug users (who abstained from cocaine and other substances > 1 week) were matched by sex, age, alcohol consumption, and IQ (Raven's progressive matrices). We found that cocaine users showed a bigger semantic interference than controls. We assume that overactive lexical representations in the semantic context may be suppressed through an inhibitory mechanism, which could be altered by cocaine consumption. This deficit in inhibiting interfering information may be critical in adapting and responding to many real-life situations where an efficient self-monitoring system is necessary to prevent errors, e.g. during a public presentation, where speech errors are less acceptable and have more severe consequences than in casual conversation.

A-0300

THE RELATIVE CONTRIBUTION OF STIMULUS-DRIVEN AND VOLUNTARY ACTION SELECTION PROCESSES IN BETA-BAND ACTIVITY DURING MOTOR PLANNING.

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We recorded EEG while participants performed an instructed-delayed reaching task. In the condition cue period, a coloured circle informed participants whether the current trial was a voluntary or stimulus-driven action trial. In the target cue period participants were presented with up to 3 cues indicating the possible target locations. In the target period, participants were required to move the joystick-controlled circle towards the highlighted target (stimulus-driven condition), or to the target of their choice in the voluntary action condition. Our behavioural results showed that participants were able to pre-plan their action to a greater extent in the voluntary action condition. We observed significantly greater event-related beta desynchronisation in the voluntary action condition compared to the stimulus driven-action condition throughout the trial. In addition, in the target cue period, this was qualified by an interaction between action condition and number of target cues, such that differences between the two action conditions were confined to trials with more than one target cue. Additionally, only in the stimulus-driven condition did the number of target cues significantly influence beta activity. These findings highlight the differential contributions of stimulus-driven and voluntary action selection and action certainty in beta desynchronisation during motor planning.

A-0301

VISUAL MISMATCH NEGATIVITY IS SENSITIVE TO CRAIK-CORNSWEET-O'BRIEN ILLUSION.

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The aim of the study was to test the sensitivity of visual mismatch negativity (vMMN) to Craik-Cornsweet-O'Brien (CCOB) illusion. VMMN is regarded as an error signal elicited by unpredicted visual events. The CCOB illusion is induced by a specific edge that modulate the perceived brightness of the flanking areas. Change in the edge induces illusory brightness change. In another condition, the brightness change caused by real luminance difference. The perceived brightness elicited by the illusion or the real contrast counterbalanced in a preparation phase. In an additional control condition, we test the ERP-effect of Cornsweet-edge. In that case, the edge did not induce brightness illusion. Stimuli delivered in accordance with the passive oddball paradigm. VMMNs emerged either to real contrast and to illusory brightness changes in two consecutive latency ranges. In the control condition, we obtained no vMMN. Although the peak latencies of the early and the late vMMNs fell in the same ranges in the two conditions, the scalp distribution of the components differed. We interpreted the results as evidence of vMMN's sensitivity to CCOB illusion. Furthermore, the source of the error signal is presumably different to variant stimuli, even though the stimuli caused similar perceptual experience.

A-0302

SPATIAL CODING OF A NUMBER IS DETERMINED BY ITS IMMEDIATE CONTEXT

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Number-space associations are typically attributed to long-term representations like a mental number line. Recent evidence, however, suggests that the associations may be of a more temporary nature in which the spatial code associated with a number depends on the context in which a number appears, like the range of numbers in the experiment (Dehaene et al., 2003). Our study takes this idea to the limit and investigates the possibility that spatial coding of a number, as established in the SNARC effect, is determined by the number immediately preceding it on the previous trial. Our analysis of RTs in a typical parity judgement task, in which numbers are serially presented and responded to, found faster left- than right-hand responses when the target was preceded by a larger number and faster right- than left-hand responses when the target was preceded by a smaller number, irrespective of the target's magnitude. No effects of numerical value proper on response preference is observed. Dedicated experiments further investigate the underlying mechanisms of this phenomenon. These results reinforce the idea that spatial coding of number is strongly determined by short term memory traces. Implications for current theories of number-space associations is discussed.

A-0303

ENTHYMEMES: WHERE INFORMAL REASONING MEETS DISCOURSE PROCESSES

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Previous research on argumentation (Rivera & Demestre, 2012) showed that the premises of an enthymeme had a conjoint influence in changing beliefs by means of a subjective-probability multiplicative-like process. In the present study enthymemes were complete (two explicit premises) or partial (one-implicit and one-explicit premise). In both cases the premises' believability integration will always be needed to its effectiveness. We aimed to examine whether implicit premises are constructed, evaluated and integrated with the explicit one, to change beliefs about conclusions and at which point such processes occur. We constructed complete and partial enthymemes where a major/minor premise could be implicit/explicit, both with high/low credibility presented with the same conclusions in a latin-square repeated-measures design. First, we measured the credibility of the explicit premises in isolation; then, we presented partial-arguments to participants measuring conclusions' credibility and reading times. Finally, we measured implicit premises' credibility. Correlation between premises' product and conclusions' credibility would indicate a successful integration process, which, in turn, should affect conclusions' predicate reading times (not only within the partial condition but also compared to de complete one). Results will be discussed from argumentation theory by bringing together informal reasoning processes and discursive processes of validation and epistemic monitoring.

A-0304

EMOTION REGULATION TRAINING FOR SUBCLINICAL WORRIERS

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The tendency to worry might result from a deficient ability to apply adaptive emotion regulation strategies. The current research was designed to study whether subclinical worriers might benefit from computerized home-based training of different emotion regulation strategies (acceptance, distraction, and reappraisal). Participants who scored above 45 in the Penn State Worry Questionnaire were recruited for the study. Participants were randomly assigned to one of the three emotion regulation conditions, and received 10 sessions of training during a two-week period. Training sessions consisted of viewing a series of negatively valence images while engaging in emotion regulation aimed at reducing emotional reaction. Before and after the training, participants performed cognitive tasks that assessed emotional reactivity. In addition, symptoms of depression, anxiety, worry and rumination were assessed before and after the training. Participants trained to use reappraisal and distraction showed reduced emotional reactivity and improvement in clinical symptoms (e.g., depression, anxiety), whereas participants trained to use acceptance showed reduced effects relative to the other groups. We suggest that training subclinical worriers in reappraisal and distraction strategies is efficient. The improvement in clinical symptoms in this study may form the basis for the development of a novel intervention for clinical worry symptoms.

A-0305

CONFLICT TASKS AND THE DIFFUSION FRAMEWORK: INSIGHT IN MODEL CONSTRAINTS BASED ON PSYCHOLOGICAL LAWS

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Formal models of decision-making traditionally assume that sensory evidence is accumulated until a choice boundary is reached. To date, one of the most influential account of this process is Ratcliff's drift diffusion model (DDM). However, the extension of the model to more complex decisions is not straightforward. In particular, conflicting situations, such as the Eriksen, Stroop, or Simon tasks, require control mechanisms that shield the cognitive system against distracting information. Recent extensions of the DDM incorporating such mechanisms have proven to account for the Eriksen task. We adopted a novel strategy to constrain reaction time (RT) models by concurrently investigating Piéron's law (power law relating RT and intensity) and Wagenmakers-Brown's law (linear relationship between

mean RT and standard deviation) in Eriksen and Simon tasks (supposedly presenting challenges for diffusion models) both at experimental and computational levels. Pieron's law proved to be additive with compatibility in both tasks and Wagenmakers-Brown's law was violated by compatibility. Simulations showed that those results were partially predicted by recent extensions of the DDM. We propose an integrative diffusion framework for decision-making under conflict that embraces all aspects of our data, thanks to an interaction between off-line and on-line cognitive control mechanisms.

A-0306

HOW SOCIAL IS ERROR OBSERVATION? THE NEURAL MECHANISMS UNDERLYING THE OBSERVATION OF HUMAN AND MACHINE ERRORS

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Recently, it has been shown that the medial prefrontal cortex (MPFC) is involved in error execution as well as error observation. Based on this finding, it has been argued that recognizing each other's mistakes might rely on motor simulation. In the current functional magnetic resonance imaging (fMRI) study, we directly tested this hypothesis by investigating whether medial prefrontal activity in error observation is restricted to situations that enable simulation. To this aim, we compared brain activity related to the observation of errors that can be simulated (human errors) with brain activity related to errors that cannot be simulated (machine errors). We show that medial prefrontal activity is not only restricted to the observation of human errors but also occurs when observing errors of a machine. In addition, our data indicate that the MPFC reflects a domain general mechanism of monitoring violations of expectancies.

A-0307

L2 WORD STRESS REPRESENTATION: INVESTIGATING COGNATE WORDS AND THE ROLE OF ORTHOGRAPHY ON PHONOLOGICAL PROCESSING

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This study investigates the processing of word stress in English (L2) by Brazilian Portuguese (BP or L1) learners. According to Dijkstra and van Heuven (1998), words activate form-similar neighbors in both L1 and L2. We hypothesized that the processing of cognate words with stress on the same syllable in L1 and L2 should be facilitated, while the processing of cognates with stress on mismatching positions would be inhibited. Eight low-frequency and moderate-frequency word categories were constructed by systematic combination of (i) word length (disyllabic, trisyllabic), (ii) form similarity (cognates, non-cognates) and (iii) stress pattern (same or different in English and BP). Brazilian advanced learners of English performed a monolingual and a bilingual speeded naming task. Results showed an overall facilitation effect for cognate words. In the monolingual experiment, the naming of 3-syllable words was faster when stress matched between L1 and L2 than when it mismatched. In the bilingual experiment, the effect of stress

match/mismatch in the L1/L2 lexicon was significantly larger in BP words than in English words. The results corroborate the hypotheses that lexical activation in L2 is non-selective and that form similarities between L1 and L2 are represented in association in the bilingual lexicon.

A-0308

HEURISTIC PROCESSES IN INFERENCES BETWEEN CONDITIONALS AND DISJUNCTIONS

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We examine inferences between conditionals and disjunctions, such as, 'Congress accepts Obama's proposals about tax cuts or America faces the sequester. Therefore if Congress does not accept Obama's proposals, America faces the sequester'. We propose that people make such inferences by relying on a heuristic that identifies compatible possibilities. We report three experiments that corroborated this account. Participants accepted inferences between 'if A then B' conditionals and 'A or B or both' inclusive disjunctions when a compatible possibility was immediately available, as Experiment 1 showed. The compatibility effect was amplified when compatible possibilities were more readily available, e.g., for 'A only if B' conditionals, as Experiment 2 showed. It was eliminated when compatible possibilities were not available, e.g., for 'if and only if A then B' bi-conditionals and 'A or B but not both' exclusive disjunctions, as Experiment 3 showed. The implications of the results for alternative theories of the cognitive processes underlying hypothetical deductions are discussed, including theories based on mental models and theories based on probability.

A-0309

THE RELATIONSHIP BETWEEN WORKING MEMORY CAPACITY AND HIGHER ORDER COGNITION: EFFECTS OF PROCESSING COMPLEXITY AND COGNITIVE TASK

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The relationship between performance in working memory (WM) span tasks, fluid intelligence, and scholastic performance was investigated to study the relationship between WM and higher order cognition. The predictive utility of two WM span tasks differing in their processing complexity was studied. Unlike in the previous studies, the presentation time of the WM tasks was controlled for, and higher order cognition was estimated more broadly. Altogether 68 adolescents (mean age 16y) completed two WM span tasks, a Reading Span task and a more complex Word Problem Span task along with a Raven's Progressive Matrices Test and several measures of scholastic performance. The results showed that the more complex WM span task was more strongly related with fluid intelligence than the less complex one, which in turn was more strongly related with school achievement than a more complex task. The results indicate that both elementary and complex mechanisms play a role in the relationship between WM performance and higher order cognition depending on the complexity of the WM span task and the type of higher order cognition measure.

A-0310

ATTENTION TRAINING FOR CHILDREN. MORE EFFORT THAN IT'S WORTH?

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The research addresses the question whether attention training for children between 8 and 12 years of age improves their attentional performance and increases their fluid intelligence test results. An overall of 69 participants were divided into three groups: experimental (N=30), control (N=24) and clinical (N=15), the latter being formed mostly of children with ADHD. The pretest and posttest, both involving D2 Attention Test and Raven's Matrices Test, were identical for all the groups. Ten training sessions for children from the experimental and clinical groups involved specially developed tasks enhancing various aspects of attention: vigilance, switching, resistance to distraction, and selectivity. The training for children from the control group required problem solving and it was designed to have a minimal impact on attention. After the training, children from the experimental and clinical groups made fewer mistakes and produced more correct rejections in the attention test. Children from the control group worked faster but less accurately. However, these improvements disappeared after three months and had no effects on the fluid intelligence test results.

A-0311

MODULATING THE EFFECT OF LEARNING ON SPATIAL CONFLICT: A TDCS STUDY

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In the Simon task, participants are instructed to respond to a non-spatial attribute ignoring its position. Despite the fact that spatial information is irrelevant to the task, responses are faster when stimulus and response position correspond than when they do not. This effect can be modulated by prior practice with a spatial task with incompatible mapping, revealing a transfer of learning from one task to the other. We investigated whether tDCS can enhance this effect of practice. Three groups of participants performed the Simon task in two sessions (baseline and transfer sessions) interleaved by a task (practice session) in which participants were required to respond to the location of the target with incompatible assignment (left response to right stimuli, right responses to left stimuli). The Group 1 underwent the experimental procedure without stimulation. In the group 2 and 3, anodal tDCS and cathodal tDCS, respectively, were applied to the premotor cortex during the practice session. Results revealed that cathodal tDCS was able to enhance the effect of learning induced by behavioural practice as compared to anodal and no-tDCS conditions. These results contribute to prove the relevance of combining cognitive training and brain stimulation to improve learning.

A-0313

THE ROLE OF THE RIGHT INFERIOR FRONTAL GYRUS FOLLOWING REVERSAL OF CONSISTENT STIMULUS-STOP MAPPINGS

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Response inhibition is often considered to be a hallmark of top-down, 'executive' control. However, it has been demonstrated that inhibition can be triggered automatically following exposure to consistent stimulus-stop associations (Verbruggen & Logan, 2008). Behaviourally, automatic inhibition manifests itself in a slowing of responses when participants are required to respond to an old stop item. Furthermore, a recent neuroimaging study showed that retrieval of these associations activated the right inferior frontal gyrus (rIFG)—a critical component of the inhibitory control network (Lenartowicz, Verbruggen, Logan & Poldrack, 2011). However, stimulus-stop associations were acquired prior to neuroimaging so new mappings may have been relearned in the scanner. It was also impossible to draw conclusions about the evolution of automatic inhibition using this paradigm. Therefore, in the present experiments we used a novel paradigm whereby stimulus-stop mappings are acquired and reversed within the same block. In Experiment 1, we used fMRI to examine how automatic inhibition developed. In Experiment 2, we found that continuous theta-burst stimulation of the rIFG, compared to sham (vertex), eliminated the reaction time slowing observed following reversal of stimulus-stop mappings. These findings support the hypothesis that the rIFG is critical for the initiation of automatic inhibition.

A-0314

CONCEPTUAL SIMILARITY MATTERS FOR JOINT ACTION

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Recent studies suggest that the social Simon effect (SSE) is larger the higher the similarity between two co-acting individuals. In the present study, we investigated the contribution of two different types of similarity between agents to the SSE: conceptual and perceptual similarity. We manipulated conceptual similarity by partnering the participant in a social Simon task with a co-actor whose response button was either controlled intentionally or unintentionally. Perceptual similarity was manipulated by providing pairs of participants with clothes of the same or different color. The SSE was larger in the conceptually similar condition than in the conceptually dissimilar condition. No difference between perceptually similar and

dissimilar conditions was found concerning the size of the SSE. Our results suggest that conceptual similarity between persons affects the size of the SSE pointing to the role of higher order cognitive processes for joint action.

A-0315

COMPETITION AND COOPERATION IN A MODEL OF AUDITORY SCENE ANALYSIS

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Auditory scene analysis addresses the difficult task of interpreting the sound world in terms of an unknown number of discrete sound sources with possibly overlapping signals. The problem is underconstrained as there are many different ways in which incoming events can be associated. This problem has been studied using the auditory streaming paradigm, and it has become apparent that instead of making one fixed perceptual decision, auditory perception switches back and forth between alternative groupings; a phenomenon known as perceptual multi-stability. We propose a new model of auditory scene analysis at the core of which is a process that seeks to discover predictable patterns in the ongoing sound sequence. Representations of predictable fragments are created on the fly, and are maintained, strengthened or weakened on the basis of their predictive success and clashes with other representations. Auditory perceptual organisation emerges spontaneously from process. The model accounts for many important findings, including the emergence of, and switching between, alternative organisations and the influence of stimulus parameters. Its principal contribution is to show that a two-stage process of pattern discovery, and competition between incompatible patterns, can account for both the contents (perceptual organisations) and the dynamics of human perception in auditory streaming.

A-0316

POLARITY CORRESPONDENCE AND CONFLICT REGULATION IN SUPRA- AND SUBLIMINAL PRIMING

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According to the polarity correspondence principle, congruence effects are stronger for dominant (here: positive) than non-dominant (here: negative) poles of an underlying dimension (here: valence). However, in a subliminal priming study we failed to find the polarity correspondence effect (U. Ansorge, S. Khalid, & P. König, 2013). In the present experiments, we therefore tested for polarity correspondence effects under subliminal and supraliminal conditions. In our task, participants had to discriminate between positive and negative target words presented after congruent or incongruent priming words. In both, subliminal and supraliminal priming conditions, we found a congruence effect with quicker responses after congruent than incongruent prime-target pairs. However, the polarity correspondence effect – stronger congruence effects with positive than negative targets – was restricted

to supraliminal priming. Additional analyses showed that conflict regulation was also only found in the supraliminal conditions: Only with supra- but not subliminal primes, congruence effects were reduced after preceding incongruent as compared to preceding congruent conditions. Strikingly, conflict regulation accounted for the lower congruence effect with negative than positive targets. Together, the results point to a role of awareness and control for polarity correspondence effects.

A-0317

CHILDREN'S KNOWLEDGE ABOUT TIME AND PERFORMANCE ON TEMPORAL MEMORY TASKS: HOW DO THESE ABILITIES DEVELOP AND HOW ARE THEY RELATED?

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Objectives: A range of human talents require Time Perception - including declarative knowledge and the ability to remember temporal aspects of an event. But is there a core underpinning TP capability that develops over childhood? We explored whether a child's ability to sequence events and reproduce responses of observed durations was related to their general knowledge regarding time constructs.

Methods: 75 children from three classes (ages 6-7; 8-9; 10-11 years) completed a questionnaire comprising 30 questions relating to general-knowledge about time (e.g., ordering days of the week, estimating the school day's duration). Data on sequencing and duration performance were measured using the touch screen of a tablet laptop. Children reproduced the order of sequences of geometrical shapes, and were required to provide a response of equal duration to one previously observed (range 3-26 seconds). Results: Significant main effects of age were found for knowledge and memory (though no memory differences between the two oldest age groups) but these were not significantly correlated.

Conclusions: Temporal knowledge and memory increased over the early school years, but increased knowledge about time did not appear to be related to improvements in performance on memory tasks. Implications for theory and applied contexts will be discussed.

A-0318

PRIMED TRANSLATION RECOGNITION OF TRANSLATION AMBIGUOUS HOMONYMS

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The present research investigated the effect of a semantically related prime when balanced Spanish-Catalan bilinguals performed a translation recognition task including homonyms with multiple translations (e.g. MUÑECA in Spanish can be translated as CANELL [wrist] or NINA [doll]) as well as unambiguous words. Homonyms were presented either with their dominant or their subordinate translation. Primes were semantically related either with the dominant or the subordinate translation of the homonym. Thus, each homonym translation pair

was responded in a match (e.g. mà [hand]–MUÑECA–CANELL[wrist]) and a mismatch condition (e.g. mà [hand]–MUÑECA–NINA[doll]). A cross-language semantic priming effect was obtained in match conditions showing that the semantic prime facilitated translation recognition when the primed meaning was related to the presented translation. Interestingly, the magnitude of priming was the same for unambiguous and for ambiguous words, as well as for dominant and subordinate translation pairs. Moreover, the results of the mismatch conditions showed an interference effect mainly observed in accuracy data: participants committed more errors when the prime was related to the non presented alternative translation. Results are discussed in relation to previous translation ambiguity studies and to the proposals about the semantic representation of dominant and subordinate translations.

A-0319

LEXICAL PROCESSING IN BILINGUALS: VARIABLES THAT INFLUENCE THE ACTIVATION OF THE TWO LANGUAGES

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In this presentation we will try to summarize the work we conducted with our beloved colleague Rosa Sánchez-Casas during the last years. Our work is focused on the study of different lexical variables that can be relevant in determining how the two languages of a bilingual are connected and activated during language processing. We will present a series of experiments conducted mainly with Catalan-Spanish highly proficient bilinguals, in which we used interference and facilitation paradigms as well as different experimental tasks, such as translation recognition, lexical decision, semantic decision or memory tasks. The variables under study were the type of semantic relationship between words across languages, the similarity in their meanings, the number of translations of words in the other language, their cognate status, their concreteness and their emotional content. The results of these studies show that all the above mentioned variables have an effect on bilinguals' word processing, and that these effects can be modulated by the type of task. These results will be discussed in the light of two of the most influential models on bilingual language processing, the Revised Hierarchical Model (RHM, Kroll & Stewart, 1994) and the Distributed Representation Model (DRM, De Groot, 1992).

A-0320

BUILDING A COMPLEX SPATIAL REASONING TEST: TWO-STEPS EVALUATION PROCESS

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Our test is based on the background of Maier's theory, which decomposes the concept of spatial reasoning into visualization, mental rotation, spatial orientation, spatial relations, and spatial perception domains. These domains

are closely interrelated and together define the overall level of spatial ability. Based on our previous experience with spatial ability testing in university admission process, we designed five seven-items sets. This pool of 35 items covers all of the specified domains. For the purposes of the first evaluation step we collected data from 267 persons. Based on the 3PL IRT items parameters we selected 25 items for the final version of the test. The 25 selected items have internal consistency level 0.85. For the second evaluation step we are collecting data in the form of complete equivalency design, i.e. repeated measures design with four groups of respondents differing by the combination of paper/pencil and computer-based form in pretest and posttest. Each group consists of 30 persons and all respondents are administered also two spatial subtests from IST-70. The result of the second evaluation step will be a 25-items long spatial reasoning test with known psychometric characteristics for both paper/pencil and computerized form of administration.

A-0321

EFFECTS OF REPEATED TESTING COMPARED TO GROUP DISCUSSIONS

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The purpose of this study was to examine whether repeated testing benefits memory and learning compared to repeated discussions in groups. Previous studies argue that group work facilitate performances to a larger extent than working alone and that repeated testing, compared to several other techniques, improves students' performances, i.e. the testing effect. In the present study repeated testing was compared to group discussion. In a between group design 131 students from an upper-secondary school in Sweden were randomly assigned to either a (i) repeated testing group, (ii) discussion group with feedback, or (iii) a discussion group without feedback. Learning was assessed by means of a test with retention intervals of 5-10 minutes, one week and four weeks later. The results showed that the group that practiced by repeated testing reached a statistically significantly higher result in all three assessment occasions compared to the discussion groups. The two discussion groups did not differ significantly, this results was also consistent over time. The overall conclusion is that repeated testing enhances students' memory and learning more than group discussions. Another conclusion is that feedback does not seem to have any effect on learning if given to a discussion group.

A-0322

THE ROLE OF PERCEPTUAL LOAD IN AUDITORY SELECTIVE ATTENTION

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In vision, it is well established that the perceptual load of a relevant task determines the extent to which irrelevant distractors are processed (see Lavie, 2010, for a recent review). Much less research has addressed the effects of perceptual load within hearing. Four experiments investigated this issue, using two different perceptual load manipulations and measuring distractor processing

through both response competition and awareness report. Despite successful load manipulations in all experiments, we failed to find an effect of perceptual load on auditory selective attention, as distractor processing did not decrease with increased perceptual load in the relevant task. We argue that the auditory system is more likely than the visual system to retain spare processing capacity at all times, meaning that auditory distractors are likely to receive at least some processing regardless of the perceptual load in the attended stream.

Perceptual Load
Auditory selective attention
Distractor Processing

A-0323

WHEN WORKING MEMORY UPDATING REQUIRES UPDATING: ANALYSIS OF SERIAL POSITION IN A RUNNING MEMORY TASK

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Traditionally, WM updating is investigated with a running memory task procedure, asking participants to recall the last few items of lists of uncertain lengths. Although serial position analysis was used to investigate WM updating, much evidence did not showed a clear serial curve with primacy and recency effect: thus, participants may not be engaged in continuous active maintenance/updating. However, task conditions may be a crucial factor in determining the behavior. Therefore, we decided to present participants with a running memory task, while memory updating was tested with a probe recognition task. Serial position curves were compared in conditions with high or low memory load, and with or without interference of a secondary (prospective memory) task. Results showed that memory updating performance could result in a typical serial position curve, indicating that updating may be performed through an active strategy. The introduction of a prospective memory task reduced available memory resources, and led participants adopting a less effective strategy, indicated by the typical marked recency effect in absence of a primacy effect. With respect to previous knowledge, it seems that incoming information may be actively updated under certain task circumstances in which resource availability allow performing this demanding process.

A-0324

ELECTROPHYSIOLOGICAL AND BEHAVIORAL EVIDENCE FOR INDEPENDENT DEPLOYMENT OF VISUO-SPATIAL ATTENTION IN A DUAL-TASK SITUATION

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The study investigated whether both capacity limited visuo-spatial attention and response selection interfere. An event-related potential (ERP) and behavioral dual-task study of the Psychological Refractory Period (PRP) type was conducted. Limitations in visuo-spatial attention were

realized in a conjunction search task. Here, visual attention is required for binding the stimulus defining dimensions. Conjunction search was performed as Task 2 after a variable temporal interval, the Stimulus Onset Asynchrony (SOA), and preceded by an auditory two choice reaction time Task 1. We measured the N2pc – the amplitude indexes the allocated amount of visuo-spatial attention to the target and the latency indexes the efficiency of the attention shift. If the N2pc parameters were a function of SOA, interference between visuo-spatial attention and response selection was indicated, whereas independence was indicated, if the N2pc parameters were not a function of SOA. The ERP results showed that neither amplitude nor latency was affected by the SOA, respectively. Moreover, N2pc parameters did not differ between conjunction search performance in the dual- and an additional single-task. Using the locus-of-slack method for behavioral data analysis also showed independent visuo-spatial attention deployment. To conclude, visuo-spatial attention and response selection operated without interference, revealing distinct attentional mechanisms.

A-0325

ESTIMATION OF DISTANCES AND LINGUISTIC PREFERENCE IN SOUTH TYROLEAN INHABITANTS

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Cognitive maps are psychological translations of topographical representations based on the reality. Besides general biases such as alignment and simplification “errors”, cognitive maps are also susceptible to social and attitudinal factors. For instance Germans showed strong overestimation of such distances if the attitude towards the German reunification was negative (the “mental wall” effect: Carbon & Leder, 2005).

Here we aimed to specifically test the impact of linguistic, cultural and social contexts to distance distortions for the culturally complex region of South Tyrol, in which three linguistic groups are present, German, Italian and Ladin, whereas only the first two are acknowledged as the dominant ones. Participants were asked to estimate the air-distance between a series of 11 cities, and to rate through questionnaires their familiarity and sympathy for the languages in the region. The two studies involved a total of 240 participants, balanced for linguistic identity. Italian and German mother-tongue people overestimated distances toward the opposite linguistic context, thus supporting previous results, while Ladin people showed a reduced effect.

These results enrich the knowledge on both imagery processes and the generation of cognitive maps, and connect cognitive representation in South Tyrolean people with affiliation belief to linguistic groups.

A-0326

MODIFIER FREQUENCY AND SEMANTIC TRANSPARENCY AFFECT COMPOUND READING IN GERMAN: EVIDENCE FROM EYE-TRACKING

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Compound reading was investigated in three eye-tracking experiments. Each experiment included sixty compound nouns, closely matched for various linguistic factors, but varying in the frequency of the first (modifier) constituent (Experiment 1 and 3), or of the second (head) constituent (Experiment 2). Semantically transparent and opaque compounds were used, and morphologically simple nouns served as fillers. In Experiment 1 and 2, words were presented in isolation, and their semantic relation to another word had to be judged. In Experiment 3, the same compounds were presented in a sentence context. Modifier frequency was an important predictor (Experiment 1), and main effects were obtained for first-fixation duration (first constituent), but not for subgaze duration (first or second constituent), nor for whole-word gaze duration. Furthermore, a significant interaction between modifier frequency and transparency revealed stronger frequency effects for semantically transparent than for opaque compounds (for first fixation duration and subgaze duration on the modifier). In contrast, the frequency of the second constituent did not affect compound reading (Experiment 2). The data of Experiment 3 complement these findings. Our results so far support current dual-route accounts.

A-0327

OUTCOME VARIABILITY IN INTERACTIONS AS A CUE TO AGENCY IN INFANTS

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Previous research has shown that based on high but imperfect contingent reactivity infants attribute agency to an object. When such an object turns towards a target, infants interpret it as a referential gesture.

In this study we varied the predictability of the sequential content of the vocal displays exchanged between two agents. We hypothesized that infants would attribute agency if the predictability of the reaction is not perfect.

We tested 10-month-old infants (n=48) in an eye-tracking experiment. In the observational phase, infants were presented two figures that emitted tone triplets in a turn taking manner. In the Imperfect Contingency condition solely the first tone of tone triplets was repeated by the second agent. In the Perfect Contingency condition the three tones were invariable during interaction. In the test phase one of the figures turned toward one of two lateral target objects.

We found that the proportion of looking to the target was significantly higher than chance in the Imperfect ($p=0.015$; one-sample t-test), but not in the Perfect Contingency condition ($p=0.945$; one-sample t-test). The difference between conditions was also significant ($p=0.047$; independent sample t-test). This suggests that the attribution of agency could be induced by the perceived variability in the content.

A-0328

NOVEL WORD LEARNING AND LEXICAL COMPETITION IN ADULTS AND CHILDREN: A VISUAL WORLD EYE-TRACKING STUDY.

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Sleep-associated consolidation is important for integration of novel and existing word knowledge in adults (Dumay & Gaskell, 2007) and children (Henderson et al., 2012). However, immediate lexical integration has been shown in adults when new phonological forms are paired with pictures (Leach & Samuel, 2007). This study employed the visual world eyetracking paradigm with 42 adults and 40 children (aged 7-8) to investigate the timecourse of lexical integration for novel word-picture pairs (e.g., biscial) indexed by competition with existing word-picture pairs (e.g., looks to biscial during biscuit). Novel pairings learned immediately prior to testing and those learned the previous day exhibited significant competition effects relative to untrained controls. However, the effect was significantly stronger for words learned the previous day for children, but not adults. The results suggest novel word-picture pairs are integrated with existing knowledge immediately but children demonstrated an enhancement following overnight consolidation that was not evident for adults. In contrast, explicit memory for the novel words (cued recall) benefited significantly from offline consolidation for both adults and children. The results are consistent with recent research suggesting sleep boosts some aspects of learning for children more than adults (Wilhelm et al., 2013).

A-0329

INFANTS' EXPECTATIONS ABOUT POSITIVE CONTINGENT RECIPROCITY

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One of the candidate mechanisms proposed to account for the evolution of cooperation among non-kin is reciprocal altruism, which requires individuals to keep track of past interactions and condition their own behaviour on the partner's previous behaviour. Earlier, we found that young infants are able to ascribe action roles to agents in object exchanges, suggesting that they can keep track of past interactions from a third-party perspective. Using a violation-of-expectation paradigm, we investigated 12-month-olds' expectations about positive reciprocity. In Study 1, infants saw one character (Giver) giving an apple to a second character (Givee) and taking another apple from a third one (Takee). During test, infants looked longer when the Givee was observed giving to the Takee than to the Giver. A control study confirmed that infants did not look longer because of the novelty of the previously unobserved interaction between Givee and Takee. In Study 2, infants saw a character as recipient of both a giving and a taking action by two different agents. During test, infants looked longer when the recipient gave an apple to the Taker rather than to the Giver. This suggests that 12-month-olds can form expectations for positive contingent reciprocity in different three-agent interaction patterns.

A-0330

THE ROLE OF SIMILARITY IN UPDATING NUMERICAL INFORMATION IN WORKING MEMORY

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Similarity between information involved in updating may influence this process. In a numerical updating task in which a two-digit number (e.g., 67) had to be substituted by another new number (e.g., 62), it was found that the closer the numbers, the faster the updating is. This effect could be due to the numerical distance itself and also to the shared digits between the numbers. In a series of experiments we aimed to disentangle the possible effects of both similarity dimensions: numerical distance and shared digits. To this end we manipulated different ranges of distances and the coincidence between the decade or the unit digits of the numbers involved. Results showed that both similarity dimensions had a separate effect on updating. Importantly, in both cases updating was faster as the similarity increased. These results are consistent with the idea of distributed representations based on features, and with a feature overwriting mechanism. Thus, working memory updating may be conceived as a selective substitution process by which certain parts of a representation (i.e., features) are overwritten while others remain the same.

A-0331

THE ROLE OF THE DOPAMINERGIC SYSTEM IN RECRUITING COGNITIVE PROCESSING RESOURCES

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Dopamine release in cortical and subcortical brain structures play such a central role in reward-related processes that researchers often simply refer to this system as “the reward system”. Although this rather simplistic view has recently undergone some modifications, it is usually agreed upon that the dopaminergic system mostly responds to extrinsic motivating factors, like (the prediction of) food or money, which in turn is central to energizing the operations necessary to actually obtain the reward. In this talk, I will present data suggesting that an extension of the dopamine system’s function beyond such aspects of extrinsic motivation and towards a more general role in the management of neural processing resources is needed. Specifically, I will present fMRI data showing that the dopaminergic system is involved in task preparation even if reward prediction is replaced with the mere prediction of varying task difficulty levels. This will be complemented by data from simultaneously-acquired fMRI-EEG data that demonstrate a link between activity levels in the dopaminergic system and preparation-related scalp components. Together these results suggest a role of the dopaminergic system in flexibly controlling neural processing resources in a general fashion that can be triggered in ways that go beyond simple stimulus-reward associations.

A-0332

PHONOLOGICALLY DRIVEN VARIABILITY: THE CASE OF DETERMINERS

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Words are not always uttered in the way they are described in a standard dictionary, they often undergo phonologically constrained variations (e.g., a car vs. an animal). We examined the processes driving such pronunciation variability by considering determiners whose form is sensitive to phonological context (French le-la(l), ma(mon), un(uN)). Two hypotheses have been proposed regarding how these words are processed. Determiners are either thought to have different representations for each of their surface forms (e.g., Alario & Caramazza, 2002), or they are thought to have only one representation while other forms are generated online after selection (e.g., Foucart et al., 2010; Spalek et al., 2010). We report four picture naming experiments in which predictions derived from these two hypotheses were tested. Native French participants uttered short phrases containing phonologically varying determiners (e.g., l’ancienne table). The context of determiner selection was manipulated, with distracting information coming either from irrelevant words to be ignored or from words within the utterance to be produced. The results reveal that grammatical gender and phonological context induce reliable interference effects. We submit a theoretical proposal to account for these and earlier findings, in which determiner retrieval is an active selection mechanism operating over multiple phonological representations.

A-0333

A NEW EXPLANATORY MODEL OF NEGLECT DYSLEXIA

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Right-brain-damaged patients with neglect dyslexia (ND) make left-sided errors in reading single words and it has been shown that the more common errors, omissions and substitutions, depend from two different mechanisms: the exploratory disorder which characterizes unilateral spatial neglect (USN) and a perceptual integration mechanism, respectively (Martelli, Arduino, Daini, 2011). The eye movements analyses on ND patients who produced a prevalence of omissions showed an altered eye-movement pattern in both a reading aloud task and a non-verbal saccadic task. On the basis of these findings, an extension of the ND new model is proposed: the omission-type reading disorder is the behavioural expression of the exploratory deficit in USN plus an alteration of the fine eye movements required for reading. Accordingly, we administered the optokinetic stimulation (OKS), which induces automatic pursuit eye movements, to two patients with ND differing in their types of reading

errors. Only the patient that produced more omissions, who showed an eye-movement impairment as well, was affected by OKS. All together, the results further corroborate the suggestion that omissions and substitutions are due to different mechanisms and that omission-type ND is a consequence of a USN disorder plus an eye-movement impairment.

A-0334

DO AMNESICS SHOW A LEXICAL BOOST TO SYNTACTIC PRIMING?

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Syntactic priming is enhanced when prime and target sentences use the same main verb. To investigate whether this lexical boost to priming is caused by people's explicit memory of the prime, we compared the production of datives by patients with anterograde amnesia and matched control speakers. Participants described pictures using dative sentences. Before each target, they heard and repeated a prime sentence (DO-dative, PO-dative or baseline) and a filler sentence. After each target, participants' memory of the prime was assessed by means of a probe recognition task. The patients showed severely impaired memory for the syntax of the prime sentence and the specific dative verb that was used. Even the controls didn't notice that probes were syntactically different from the primes (DO instead of PO) in 45% of the trials. Nevertheless, both groups showed significant syntactic priming. Patients showed no trace of a lexical boost; controls showed a non-significant boost of 3%, which is much smaller than the 20% boost observed in our pilot study with younger participants. Thus our data confirm that explicit memory of prime sentences is not necessary for syntactic priming to occur. The lexical boost to priming, however, may vary with people's memory for sentence structure.

A-0335

INFLUENCES OF ODOR FAMILIARITY AND IDENTIFICATION ON LONG-TERM ODOR RECOGNITION MEMORY

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Evidence is scarce regarding long-term odor memory and its relationship with odor familiarity and identifiability. In a between-groups study, eighty-three subjects (43 women, 40 men) encoded familiar and unfamiliar odors and faces, and recognition memory was assessed immediate, 4, 16, and 64 days after encoding. The results showed olfactory and facial forgetting across time, although recognition for faces was better than for odors. For the latter, memory performance was primarily driven by an increment in false alarms between the 16 and 64 days testing – which reflected a difficulty in discriminating new odors from previously presented ones. In contrast, the performance drop for faces was both due to a gradual decrement in hit

rates as well as increasing false alarms across time. Memory was better for familiar than unfamiliar information, although the effect of familiarity was larger for odors than for faces. Moreover, hit rates were positively related to accurate and consistent identification across sessions, yet less so for faces than odors. In sum, the results indicate that familiarity and consistent identification is more strongly related to recognition performance for olfactory than facial information.

A-0336

THE ROLE OF DOPAMINE IN CONTROLLING THE TEMPORAL DYNAMICS OF NEURAL MEMORY SIGNALS

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The neural mechanisms of novelty discrimination were often described as temporally constant, but recent electrophysiological evidence indicates that the onset of neural novelty signals can be accelerated by reward motivation. While the precise physiological mechanisms underlying this acceleration remain unclear, the involvement of the neurotransmitter dopamine in both novelty and reward processing suggests that enhanced dopamine levels in the context of reward prospect may play a role. To investigate this hypothesis, we used magnetoencephalography (MEG) in combination with an old/new recognition memory task in which correct discrimination between novel and familiar items was rewarded. Prior to the task, human subjects received either 150 mg of the dopamine precursor levodopa or placebo. For the placebo group, old/new signals peaked at ~100 ms after stimulus onset over left temporal/occipital sensors. In contrast, after levodopa administration earliest old/new effects only emerged after ~400 ms and this delay was associated with reduced retrieval accuracy. As such, our results point towards a role of dopamine in controlling the chronometry of neural processes underlying the distinction between novel and familiar information. They also suggest that this relationship follows a non-linear function whereby slightly enhanced dopamine levels accelerate neural/cognitive processes and excessive dopamine levels impair them.

A-0337

SYNTACTIC PREDICTABILITY FACILITATES THE RECOGNITION OF WORDS IN CONNECTED SPEECH

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In this study, we investigated whether the recognition of spoken words is influenced by how predictable they are given the syntactic structure of their carrier sentence. Moreover, we studied if listeners' sensitivity to syntactic predictability depends on how reliable the acoustic cues

in the speech input are. In three eye-tracking experiments, listeners heard carefully and casually produced sentences while looking at a visual display containing four printed words and selected the word which was mentioned in the sentence. Syntactic predictability was manipulated by varying the word order of past participles and auxiliary verbs. In Dutch subclauses, past participles can either follow their associated auxiliary verbs (e.g. "Ik weet zeker dat hij heeft geleund op de houten tafel.") or they can precede them (e.g. "Ik weet zeker dat hij geleund heeft op de houten tafel."). In all experiments, participants recognized the past participle more quickly when it occurred after its associated auxiliary verb than when it preceded it. The reaction time data suggest that this effect is stronger for casually than for carefully produced sentences. These findings show that syntactic predictability can influence word recognition and suggest that listeners dynamically adapt to the different sources of linguistic information available to them.

A-0338

AN EMBODIED TRAINING OF NUMBER LINE EQUIDISTANCE

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The mental number line is a widely recognized metaphor of human spatial-numerical representation. For an accurate linear number line representation children need to understand the equidistance relation of Arabic numbers (i.e., that the distance between any two adjacent numbers is identical). Considering previous successful interventions allowing for a bodily experience of the mental number line, we developed an embodied training of equidistance. Second-graders were trained to divide a spatially presented line taped on the floor into a specific number of equal parts by walking this line with equidistant steps. Children's movements were tracked using an Xbox Kinect sensor which also provided feedback about the correct spatial extent of the required steps. This embodied training was compared to an identical control training on a tablet PC without any kind of task-related body movement. Children not only improved their concept of equidistance more strongly after the embodied training, the training effects even generalized to untrained numerical competencies such as number magnitude comparison. These results further corroborate the notion of beneficial effects conveyed by embodied trainings. Additionally, they underline the importance of a spatial-numerical equidistance concept for the development of the mental number line representation.

A-0339

PRIMING YOUNG ADULTS WITH THE ELDERLY STEREOTYPE INDUCES CAUTION, NOT SLOWNESS, IN A LEXICAL DECISION TASK.

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Research on stereotyping (e.g. Bargh et al., 1996) has

shown that activating the elderly stereotype in young adults reduces their performance in several tasks (e.g. reduced walking speed, increased reaction times in a lexical decision task -LDT). The aim of our study was to examine whether such longer RTs would indeed be due to a slower behavior or on the contrary would reflect a more cautious (conservative) behavior. Fifty-nine young adults were primed with one stereotype (either elderly or young). Then, they performed a LDT. In order to distinguish between the speed and conservativeness aspects of participants' behavior, we analyzed the data with Ratcliff's Diffusion Model. This analysis showed that the participants who were primed with the elderly stereotype adopted a more conservative decision criterion than those primed with the young stereotype. On the contrary, no difference was observed in the nondecision components. Thus, the Diffusion Model analysis suggests that the increase in RTs measured in young adults primed with the elderly stereotype (compared to those primed with the young stereotype) does reflect a more cautious behavior rather than a motor speed reduction.

A-0340

AUDITORY NEURAL EFFECTS OF VISUAL INFORMATION PREDICTING 'WHAT', 'WHEN' AND 'WHERE'.

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In many natural audiovisual events the visual signal precedes the sound and allows observers to predict when, where, and what sound will occur. We investigated the neurophysiological correlates of the effect of visual prediction on auditory processing by presenting stimuli (containing visual anticipatory motion) in the visual (V), auditory (A), and audiovisual (AV) modality. The A-only ERP is compared to the difference between the AV and V-only ERP ($A = AV - V$). We found that the auditory-evoked N1 is attenuated when the auditory signal is accompanied by concordant visual input. No N1-suppression was found when there is no visual anticipatory information about sound onset. Audiovisual stimulus congruence in the 'what' dimension had no effect on N1-suppression, but affected the P2. Our data suggest the existence of two functionally distinct integrative/predictive mechanisms. We attribute the attenuation of the N1 to visual prediction of auditory onset (when), reducing signal uncertainty and lowering computational demands for auditory brain areas. The modulation of the P2 reflects audiovisual integration of informational content (what). We further found that visual prediction of auditory location (where) can be coded early in auditory processing as the N1-suppression was greater for the spatially congruent than incongruent stimuli.

A-0341

CONDITIONAL REASONING ABOUT INTENTIONS

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We present the results of two experiments to examine conditional reasoning about intentions, that is, reason-

action sequences, such as 'if Carlota believes in the tooth fairy, then she places her tooth under her pillow'. Our proposal is that people distinguish between strong, weak, and enabling intention conditionals by thinking about counterexamples (alternatives and disablers), and we show that they distinguish between strong, weak and enabling reasons, just as they distinguish between strong weak and enabling causes. The experiments examine internal reasons such as beliefs (like the example of Carlota) and goals, and external reasons such as obligations and social norms. Experiment 1 shows that participants generate as many alternative and disabling reasons to intention conditionals, as they do alternative and disabling causes to causal conditionals. Experiment 2 shows that alternative reasons suppress the affirmation of the consequent and denial of the antecedent inferences from weak intention conditionals, whereas disabling reasons suppress the modus ponens and modus tollens inferences from enabling intention conditionals. The mental representation of intention conditionals will be discussed.

A-0342

CROSS-MODAL SELECTIVE ATTENTION IN NUMERICAL AND SPATIAL TASK SWITCHING

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The aim of the current study was to investigate cross-modal selective attention in task switching. For this purpose, performance in numerical and spatial tasks (bimodal stimuli: auditory or visual task) was examined. Participants switched either within numerical or within spatial tasks. As stimuli were presented bimodally, visual or auditory cues indicated the relevant modality. In numerical tasks, participants were asked for a magnitude judgment of one of the presented numbers (2 and 8, visual and auditory) in their relation to 5. In spatial tasks, participants were asked for a left/right judgment of one of the presented stimuli (rhombi and sounds). Our results indicated modality shift costs as well as cross-modal interference (i.e. congruence effects) and are discussed with regard to their implications towards spatial vs. numerical processing, visual dominance and directed-attention accounts.

A-0344

JOINT COMPREHENSION: THE EFFECT OF CO-LISTENERS ON SENTENCE COMPREHENSION

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During conversation we keep track of what others can and cannot understand. Some research suggests that this is accomplished late during language comprehension, i.e., first language is parsed and then knowledge about others is used to adjust one's interpretation. However, these findings are based on studies that use dialogue situations, in which the two people involved are not actually joined in a common task (i.e., one is speaking while the other is listening). We suggest that a different pattern of results might emerge if participants jointly attend stimuli (i.e., both listen to a third

party). To this end we recorded electrophysiological data while presenting sentence stimuli which were semantically plausible for a participant, but implausible for a nearby confederate. Our results show that an electrophysiological marker of semantic incongruity (the N400-effect) is elicited in this situation, despite the fact that participants find the sentences semantically plausible. In a second group of participants we demonstrate that presenting the same sentences to the participant alone results in no N400-effect. We suggest that when individuals are united in the task of attending to a speaker, knowledge about others can have an immediate and direct influence on the cognitive processes underlying language comprehension.

A-0345

TOWARDS AN END-TO-END MODEL OF SPEECH COMPREHENSION: MODELING A LEXICAL DECISION TASK

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Several theories have been formulated to account for how humans process speech. So far, nearly all relevant computational models of speech comprehension (Shortlist B, TRACE) do not start from the speech signal itself, or cannot directly model reaction times (RTs) as obtained in comprehension experiments. This paper describes a new model of speech comprehension that takes the acoustic signal as its input and predicts reaction times in an auditory lexical decision task. Its main components are a perception stage, which is compatible with the psycholinguistic model Shortlist B but extended with speech analysis techniques from automatic speech recognition, and a decision stage, which is based on the Linear Ballistic Accumulation model, a recent mathematical-psychological decision model. We tested our model against nearly 10000 responses from 20 participants performing a large-scale lexical decision experiment. The model simulates both RTs and word/non-word judgments well. For instance, the model's RTs correlate 0.47 with RTs from human subjects, which is substantially larger than the between-subject correlations (0.1-0.3). The simulations strongly suggest that our computational model, including the conversion of the acoustic signal into abstract units, adequately reflects perception and decision principles underlying speech processing in human listeners.

A-0346

MODALITIES OF MEMORY: IS READING LIPS LIKE HEARING VOICES?

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Functional similarities in verbal memory performance across presentation modalities (written, heard, lipread) are often taken to point to a common underlying representational form upon which the modalities converge. We show here instead that the pattern of performance

depends critically on presentation modality and different mechanisms give rise to superficially similar effects across modalities. Lipread recency is underpinned by different mechanisms to auditory recency, and while the effect of an auditory suffix on an auditory list is due to the perceptual grouping of the suffix with the list, the corresponding effect with lipread speech is due to misidentification of the lexical content of the lipread suffix. Further, while a lipread suffix does not disrupt auditory recency, an auditory suffix does disrupt recency for lipread lists. However, this effect is due to attentional capture ensuing from the presentation of an unexpected auditory event, and is evident both with verbal and nonverbal auditory suffixes. These findings add to a growing body of evidence that short-term verbal memory performance is determined by modality-specific perceptual and motor processes, rather than by the storage and manipulation of phonological representations.

A-0347

ARRANGING EVENTS IN TIME: ERPS REFLECT OPTIMIZED AND IMPAIRED USE OF TEMPORAL STRUCTURE

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In order to optimally adapt to a dynamic environment, individuals react to past events but also predict the type and the timing of future events. Moreover, priors in one domain may modulate processing in the other, i.e. knowledge about timing may influence cognitive processing of the respective event type. On this basis, we conducted experiments in which we varied the timing of auditory sequences consisting of two types of sinusoidal tones (600 Hz standards, 660 Hz deviants) to investigate the impact of temporal predictability on a specific cognitive operation (deviance processing). Participants sat in a sound-shielded booth, listened to the sequences, and counted the number of deviants embedded in each sequence. Event-related potentials of the electroencephalogram (P50, N100) were used as indices for the quality of deviance processing. In addition to healthy participants, we tested patients with cerebellar and basal ganglia lesions with this setup, as these brain regions are known to play a role in the processing of temporal information. The results demonstrate that these potentials are independently sensitive to the type and timing of events. In patients, they also reflect distinct impairments in using temporal regularity to predict upcoming events.

A-0348

OVERT OR COVERT RETRIEVAL PRACTICE – ARE BOTH LEARNING STRATEGIES EQUALLY EFFECTIVE?

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Retrieval practice is an effective study strategy, but is all forms of retrieval practice equally effective? One way to self-test memory is to do so covertly, that is, to silently test memory. Another way, overt retrieval, is to also output (i.e., articulate) the response by writing it down or saying it aloud. However, whether those two study strategies are equally effective has not received much attention. This question is important, for example, because it will inform the studier of

how to best engage in retrieval practice during learning. In the talk the available literature up to date will be reviewed along with some new findings indicating that although covert retrieval practice does seem beneficial as well, overt retrieval practice may sometimes be better.

A-0349

JOINT PRODUCTION: THE EFFECT OF PREDICTING OTHER'S UPCOMING WORDS ON SPEECH PRODUCTION

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Many joint actions require that we anticipate others' actions: Think of playing a piano duet, walking through a narrow doorway together or having a conversation. In all cases, predicting our partner's actions and integrating them in our own action plan is key for the success of the joint activity. The present study investigated prediction processes during speech production. Specifically, we explored whether lexical processes that occur when we name objects can also be observed during joint action when our partner is naming objects. We compared the behavioural and electrophysiological responses of participants performing a conditional go/no-go picture naming task in two different conditions: individual and jointly with a confederate participant. Behavioral and ERP results revealed that participants also engaged in lexical processing when it was their partner's turn to act. In addition, ERP results showed increased response inhibition selectively for this type of no-go trials. These findings provide strong evidence for the claim that listeners generate predictions about speakers' utterances by relying on their own action production system.

A-0350

FOOT OR X DOWN? RESPONSE COMPATIBILITY BUT NO EFFECTS OF THE OBJECT'S TYPICAL LOCATION. SEVERAL FAILURES TO REPLICATE ESTES, VERGES & BARSALOU (2008)

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The language embodiment hypothesis predicts that some object words (e.g., bird) elicit spatial activation of their typical location (which is up for bird) through a perceptual simulation of the experienced spatial characteristic of the object (Barsalou, 1999). Estes, Verges, Barsalou (2008) reported that centrally presented words denoting objects usually appearing in the upper/lower portion of the visual field interfere with the identification of unrelated targets appearing up/down on the display, respectively. In a series of 6 experiments, run in different laboratories, we tried to replicate this pattern of results, without success. Instead,

we found a spatial compatibility effect so that targets appearing up/down on the display were identified faster with the response key placed in the upper (O)/lower (X) portion of the keyboard, respectively. Critically this effect was independent of the word's typical location. The results challenge the conclusion drawn in Estes et al. according to which object words orient attention to the object's typical location.

A-0351

THE INITIATION OF SPEECH PLANNING IN TURN-TAKING.

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In conversations inter-turn intervals are mostly short (around 200ms), suggesting that listening and speech planning often overlap in time. However, it is unclear when speakers begin to plan their utterances. They could either prepare their utterances as soon as they know what to say, or they could wait until right before their turn. We used a dual-task paradigm involving finger tapping (as an indicator of cognitive load) and turn-taking to investigate this question. In the listening-only condition, participants overheard two prerecorded speakers, each describing two of four displays on the screen. In the turn-taking condition participants first listened to a prerecorded description of two of the four displays and then described the remaining displays themselves. Participants knew which displays they should describe as soon as they had heard the first word of the prerecorded description. In the listening condition, the tapping rate was stable across the utterances. The tapping rate in the turn-taking condition initially did not differ from the listening condition, but dropped shortly before the onset of the participant's turn. An eye-tracking experiment confirmed that the participants' attention turned to their own displays around that time. Thus, speakers try to minimize the overlap of speech planning and listening.

A-0352

THE RELATIONSHIP BETWEEN NUMBER LINE ESTIMATION AND ARITHMETIC COMPETENCIES DEPENDS ON AGE, OPERATION AND SKILL

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Children's performance in number line estimation is usually found to be associated with later, rather general arithmetical achievement (i.e., school marks, curricular mathematical tests). However, the relationship between performance in the number line estimation task and more specific arithmetical tasks (i.e., the four basic arithmetic operations) has not yet been investigated systematically. Therefore, arithmetic abilities of more than 400 fifth and sixth graders of two secondary school types (general and intermediate secondary school) were assessed in a cross-sectional study. Experimental tasks covered number line estimation with differing three-digit numbers as end points and all four basic arithmetical operations (an easy and a difficult set each).

We found significant correlations of number line estimation performance and arithmetic skills. More pronounced correlations were observed for sixth graders than fifth graders. Moreover, for sixth graders from general secondary school correlations were only significant for addition, subtraction and difficult multiplication. Finally, students with higher skill levels in number line estimation also showed better arithmetic skills.

Taken together, our findings indicate that numerical magnitude representation – as indexed by performance in the number line estimation task – is accessed when solving arithmetic tasks. However, this relationship depended on age, arithmetic operation and skill level.

A-0353

CONTEXTUAL SELF-ORGANIZING MAP: SEMANTIC SPACE OF ITALIAN WORDS (?)

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The aim of this study is to test the lexical-semantic representation of 300 Italian words by means of a contextual self-organizing map (Zhao, Li & Kohonen, 2011). In distributed models, the lexical-semantic representation of a word is conceived as a series of points in a high dimensional space. By using a corpus-based approach words meaning is constructed through an algorithm which extracts the statistical co-occurrences of words present in similar context. In the study, the algorithm generated a matrix of the words starting by an extract of the Co.L.F.I.S. corpus and calculated for each word the averages of the preceding and following words.

The lexical-semantic representations obtained were used as inputs to generate the self-organizing map. The resulting map captured the conceptual and semantic properties of words (Zhao et al., 2011). More surprisingly, it captured also their syntactic features, such as grammatical class and gender. One possible interpretation of the results is that words occurring in the same semantic context occupy the same syntactic slots in phrases, blurring the distinction between semantic and syntactic levels of processing. Implications for the theories on the organization of the mental lexicon will be discussed.

A-0355

INVOLVEMENT OF VISUAL BRAIN AREAS IN THE INTEGRATION OF CONTEXTUAL AND VISUAL INFORMATION IN VISUAL WORKING MEMORY

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In this study we examined whether contextual information in visual working memory (WM) influences the activation of visual brain areas. We used a delayed match-to-sample paradigm and simultaneous EEG recording to examine the Contralateral Negative Slow Wave (CNSW), a neural correlate of visual WM capacity. Four abstract polygons were presented in each visual hemifield. Participants (n = 18) were prompted to remember either a single polygon, a single half of two polygons, or one quarter of four polygons, in one hemifield for 1000 milliseconds. Behavioral results

indicate that performance decreased when participants had to remember one whole, two halves, or four quarters respectively. ERP results show increased negativity over parietal and occipital recording sites during memorization, contralateral to the location of the memorized item. The CNSW was significantly more negative for the half and quarter conditions, compared to the whole object condition, suggesting that the more complex context increased memory load. Since the actual amount of visual information was kept equal for all conditions, these results suggest that activation in visual brain areas is not only due to processing of visual information; it might, at least partially, reflect the interaction between context and processing of pure visual information as well.

A-0357

BRAIN DYNAMICS OF CONSCIOUS VERSUS SUBLIMINAL ERROR-DETECTION

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Metacognition, the ability to monitor one's own cognitive processes, is frequently assumed to be univocally associated with conscious processing. However, some monitoring processes, such as those associated with the evaluation of one's performance, may conceivably be sufficiently simple and automatized to be deployed non-consciously. Here, we used simultaneous electro- and magneto-encephalography (EEG/MEG) to investigate how error detection is modulated by perceptual awareness. In a number comparison task, a digit was presented at variable degrees of masking, and we examined its capacity to elicit action, intention, and error detection in conscious as well as non-conscious conditions. The results indicated that the error-related negativity (ERN), an EEG component occurring ~100 ms after an erroneous response was present only when the digit was consciously perceived. Furthermore, multivariate decoding of brain activation patterns revealed that while low-level information on the stimulus and the response were available in non-conscious conditions, activity related to the computation of the correct/intended response could be decoded only in conscious condition. We argue that distinct brain mechanisms underlie metacognitive judgements in conscious and non-conscious conditions and that the ERN, reflecting the comparison between required and actual actions, can be elicited only when a conscious intention can be prepared.

A-0358

HYPNOTIC SUSCEPTIBILITY AND WAKING EXECUTIVE EFFICIENCY

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Flexibility of attentional/executive control was investigated in possible relation to individual differences in hypnotic susceptibility. High, medium and low hypnotizable subjects (N=40) underwent a task switching experiment in a non-hypnotic context. The experimental method combined the instructed (alternating runs) and non-instructed (voluntary) versions of task switching procedure. In a run of nine, spatially different trials, task specific cues assigned

the task to perform on bivalent stimuli (instructed switch and repetition) but, at two highlighted sequential positions the subjects could determine freely where to switch with balanced frequency (voluntary switch and repetition). The switch cost was found robust in the instructed condition but decreasing when going from instructed to the voluntary condition, in each experimental group. The frequency of the switches was unbalanced across the two voluntary switching positions, and the switch cost proved smaller at the preferred one. In the voluntary switch cost a marginally reliable ($p=0.065$) difference was found between the preferred and non-preferred switching positions only in the group of highly hypnotizable subjects. The results can be interpreted as a subtle indication of more effective attentional performance of susceptible subjects when implementation of strategic control is possible. Keywords: hypnotic susceptibility, executive control, voluntary task switching

A-0359

EFFECTS OF ASYMMETRIC QUESTIONS ON IMPRESSION FORMATION: A TRADE-OFF BETWEEN EVIDENCE DIAGNOSTICITY AND FREQUENCY

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When they are required to express a judgment on social targets, people may ask asymmetric questions, that is questions for which the yes- and the no-answers are neither equally diagnostic nor equally frequent. The consequences of this information-gathering strategy on impression formation still deserve empirical investigation. The present work explored the role played by the trade-off between the diagnosticity and the frequency of the answers that follow asymmetric questions. In Study 1, participants received answers to symmetric/asymmetric questions on an anonymous social target. In Study 2, participants read answers to a specific symmetric/asymmetric question provided by different group members. Overall, the results of both studies indicated that asymmetric questions had less impact on impressions than did symmetric questions, suggesting individuals' greater sensitivity to data frequency than to diagnosticity when forming impressions.

A-0360

SUBITIZING IN THE TACTILE MODALITY AND FINGER COUNTING

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Our study explores various aspects of counting and subitizing in the tactile modality. The main manipulation for the number of items was controlled by vibro-tactile stimulation (for 100 ms / 800 ms) on the fingertips of one hand. Between one and five stimuli were presented to the dominant or the non-dominant hand and applied in three distribution conditions: neighboring fingers (e.g., thumb-index-middle), distributed fingers (e.g., thumb-middle-pinkie) or mixed (e.g., thumb-index-ring). The results showed no clear break in reaction time and accuracy rate slopes between 3 and 4 stimuli, regardless of distribution

or exposure time. In addition, stimuli presented to the dominant hand generally yielded faster and more accurate responses only with the 100 ms exposure time. When the stimuli were presented to non-neighboring fingers, the accuracy rate was lower and the response time was longer than when the stimuli were presented to neighboring fingers. In spite of the main results, we could not eliminate the existence of subitizing due to the specific properties of the experiment. The results are discussed in relation to embodied numerosity; namely, finger counting is based on sequential order of the fingers, therefore stimuli applied to neighboring fingers (vs. non-neighboring fingers) are processed more efficiently.

A-0361

LANGUAGE CONTROL IN BILINGUALS

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Research has shown that both languages of a bilingual are always active. However, bilingual cross-language intrusions are rare, which suggests an efficient mechanism for language control in bilinguals. In the present talk, I will present 3 data sets on bilingual language control. In the first study, we investigated order of language production in a verbal fluency paradigm. Dutch-English bilinguals produced less words after having spoken in the non-dominant language, but not vice versa. This effect only emerged for repeated onset phonemes. Different-script, immersed Chinese bilinguals showed the same effect, but they also showed inhibition for other lexical categories (global inhibition). In the second study we investigated the executive control advantage commonly reported in bilinguals in unbalanced and balanced bilinguals, in a group of bilinguals that often codeswitch. Executive functioning was assessed using flanker and Stroop tasks. The bilingual advantage was only found in the codeswitching group. In the third study, we investigated cross-lingual interactions and cognitive control in bilinguals with differential aphasia (i.e. stronger loss of one of either languages). We found that in such patients, the most affected language is still able to influence the most preserved language. We attribute the differential aphasia to language control deficiencies.

A-0363

SHIFTING VISUOSPATIAL ATTENTION TO KEEP TRAFFIC OF ARITHMETIC OPERATIONS: EVIDENCE FROM LEFT NEGLECT

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The results of recent behavioural and brain imaging studies suggest that the mechanisms underlying attention shifts

could be co-opted by arithmetic operations to localize the position of the answer on a visuospatial medium. Although the study of visuospatial neglect has provided important insights into the relationship between space and number, the impact of this disorder on mental arithmetic has received little interest so far. Under the assumption that the mechanisms underlying leftward and rightward attention shifts are respectively involved in subtraction and addition, we predicted that patients with left unilateral neglect should have difficulties to solve subtraction problems. Performance of right brain-lesioned patients with and without left unilateral neglect, and healthy controls were compared in subtraction and addition tasks. Two-digit numbers were used as first operands whereas the magnitude of the second operands was defined as small (1,2) medium (6,7) or large (11,12). Results showed that neglect patients made more errors than the two other groups to subtract large numbers. In contrast, left unilateral neglect did not hamper the solving of addition problems matched for difficulty and size of the result. These findings corroborate the view that the mechanisms underlying visuospatial attention are co-opted by arithmetic operations.

A-0364

THE USE OF LEXICAL REPRESENTATIONS FOR WORD PRONUNCIATION VARIANTS IN SPEECH COMPREHENSION: THE CASE OF FRENCH SCHWA REDUCTION

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Casual speech is characterized by variation in how a single word is pronounced (e.g. ,probably' as ,probably' but also as ,proby'). We investigated which lexical representations French listeners use for understanding reduced words that are pronounced without their schwa (e.g. ,fnêtre' for ,fenêtre'). Thirty-six French native speakers performed an auditory lexical decision task with 44 words produced either with or without schwa. In addition, they rated the relative frequency of the reduced variant compared to the full variant for each word. Results show that listeners recognize a given variant more quickly if it has a higher relative frequency. This suggests that these relative frequencies are stored, which implies that the reduced variants are stored as well. These findings complement results reported by Ranbom & Connine (2007) for the perception of variants of words containing /nt/ in American English and by Bürki et al. (2010) for the production of reduced schwa in French. Given that reduction processes give rise to many different pronunciation variants for a given word (e.g. ,fenêtre', ,fnêtre', ,fenêtr', ,fnêtr', ,fnêt'), our results raise the question of how the activations of these different pronunciation variants play a role in the selection of their common word node.

A-0365

IS VISUAL STATISTICAL LEARNING EXCLUSIVELY IMPLICIT IN CHILDREN?

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Visual statistical learning (VSL) is the ability of human observers to extract the joint and conditional probabilities of shapes co-occurring during passive viewing of complex visual configurations of shapes. Evidence indicates that even infants are sensitive to these regularities (Kirkham et al., 2002). However, there is a debate as to whether VSL is accompanied by conscious awareness of the statistical regularities between sequence elements. Bertels et al. (2012) addressed this question in young adults. Here, we adapted their paradigm in order to investigate VSL and conscious awareness with children. Fourth and fifth graders were exposed to a continuous stream of visual shapes arranged in triplets. In a subsequent Rapid Serial Visual Presentation (RSVP) task, they had to detect one of those shapes in the stream. This served as an indirect test of learning. Finally, they performed a 4-alternative forced-choice (4AFC) task in which each trial also involved a binary confidence judgment. This aimed at assessing conscious awareness of the statistical regularities. Preliminary results from both tasks suggest that children learned the statistical regularities between shapes. Interestingly, subjective measures revealed that learning was not exclusively implicit. Rather, as observed with adults, children would have conscious access to their knowledge.

A-0366

WHAT DETERMINES ADULTS' DIFFICULTIES IN MENTAL STATE INFERENCE? AN INVESTIGATION OF THE EFFECTS OF TYPE OF MENTAL STATES AND TYPE OF EXECUTIVE DEMANDS.

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An accumulating body of evidence shows that adults don't perform flawlessly on Theory of Mind (ToM) tasks, and that the reason for this is linked to an executive component of ToM reasoning, namely the need to inhibit one's own perspective. But recent neuropsychological studies have shown the influence of another executive component linked to the inhibition of salient distracting information in the environment. It is currently unknown whether adults show differential difficulties for the inference of different types of mental state. Developmental studies show that children find it easier to reason about emotion than desires and easier to reason about desires than beliefs. However, the executive components have usually not been matched across mental states. In this study, we examined adult's ToM by contrasting the inference of different types of mental states (emotions, desires/intentions and beliefs) and orthogonally manipulating the type of executive demands (self-perspective inhibition and inhibition of salient distracting information in the environment). Results show that participants' performance was not flawless (8 % errors on average) and that the errors evenly spread across the different mental states. Furthermore, errors were equivalent across types of executive demands (and even marginally higher in the inhibition of salient distracting information condition).

A-0367

INFERENTIAL UPDATING IN NARRATIVE TEXTS

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We evaluated the dynamic process of inferential updating during text comprehension in adult participants with higher and lower Working Memory (WM) capacity. Participants were asked to read narrative texts. The three first sentences of the text were consistent with two different concepts (e.g. violin and guitar), so that although both of them were plausible in the context, one of them was more likely than the other (e.g. guitar). In the update condition, a subsequent sentence supported the less plausible concept (e.g. violin) and ruled out the other, whereas in the no-update condition, the sentence was consistent with both concepts. Analyses of the reading times for this sentence showed that participants with lower WM took longer to read the sentence in the update condition. Finally, in the last sentence of the text where EEG was recorded, a target word was presented that always referred to the less plausible concept (e.g. violin). Analysis of event-related potentials revealed different pattern of activation for higher and lower WM groups suggesting that different neural component underlie inferential updating process for low and high WM comprehenders.

A-0369

WHAT DO VERBAL FLUENCY TASKS MEASURE

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Semantic and phonological fluency tasks (i.e., producing, within one minute, as many members of a category or as many words as possible beginning with a specific letter) are widely used in clinical and research settings. It is, however, unclear whether these tasks assess lexical retrieval ability, aspects of executive control or both. To clarify this issue, we tested 82 older (60 to 88 years) Dutch speakers on semantic and phonological fluency tasks, a picture naming task (assessing lexical access speed) and two tasks assessing component of executive control, namely the stop-signal task (assessing inhibition) and the operation span task (assessing updating ability). Performance on the fluency tasks was assessed using the mean number of words produced as well as the latencies to produce the first and the following words (see Luo, Luk, & Bialystok, 2010). We found that only lexical access speed and updating ability, but not inhibition explained significant parts of the variance in performance in the fluency tasks (20% in total). We conclude that fluency tasks are hybrid tasks assessing both linguistic and executive control skills, which may limit their usefulness for research and clinical purposes.

A-0370

SEPARATE BRAIN SYSTEMS FOR COGNITIVE AND MOTOR-SPATIAL IMITATION

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Is human imitation domain-general, mediated by a central neural mechanism such as mirror neurons? Or is imitation domain-specific, instantiated in discrete brain structures and networks? Using a novel imitation paradigm, we assessed participants learning two different serial rules during fMRI scanning: "cognitive" (Apple-Boy-Cat) and "motor-spatial" (Up-Down-Right). Rules were learnt under three demonstration conditions: (1) full, where participants watched a video of a hand moving a joystick, selecting items in the target order; (2) ghost, where images were highlighted in the correct order; and (3) written, where participants read the target rule. Following each demonstration, participants performed the target sequence using a joystick. Whole brain images were collected with a 3T fMRI scanner throughout.

An analysis of the main effect of task during the demonstration phase showed that bilateral superior parietal cortex was active during the motor-spatial task. In contrast, fusiform cortex and orbitofrontal cortex were engaged in the cognitive task. Neural activation during the execution phases was similar across tasks. There was no significant activation of regions associated with mirror neurons. This suggests that cognitive and motor-spatial imitation tasks are processed in specialised brain regions, which is consistent with the hypothesis of multiple imitation systems.

A-0371

NEURAL CORRELATES OF BIAS IN PERCEPTUAL DECISION MAKING

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Our choices are guided by prior knowledge about the possible choice alternatives: people tend to choose the alternatives that are more likely to be correct and more likely to be profitable. However, prior information can influence decision making in different ways: it can either cause people to require less information for choosing the preferred alternative, or it can alter people's perception of the environment, resulting in a prejudice towards the preferred alternative. We investigated how prior knowledge is processed by the brain in simple, perceptual decisions. Neuroimaging studies already have shown that the cortico-basal-ganglia-thalamic circuit plays an important role in setting the speed and accuracy of such decisions. In this network, cortical regions are believed to control behavioral adaptation to the demands of the environment by either releasing or maintaining inhibition on brain regions that initiate a response. However, it is

unclear how prior knowledge is processed by these cortical regions to bias our choices. I will show evidence that prior knowledge causes the brain to require less information for choosing the preferred alternative. Furthermore, functional and anatomical evidence suggest that prior knowledge is processed by the prefrontal cortex to enhance the speed and accuracy of biased choices.

A-0372

THE LINKS BETWEEN EMOTION AND EXECUTIVE CONTROL – A COMPARISON BETWEEN THE VISUAL AND THE TACTILE MODALITIES

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Previous results demonstrated that emotional interference (i.e., elongated reaction time (RT) for emotional compared to neutral stimuli) can be attenuated when executive control is recruited. The current research studied whether this link between executive control and emotion is modality dependant. Negative and neutral pictures were presented before either a visual or tactile target in a Simon task. Both the visual and the tactile blocks showed a Simon effect (i.e., elongated RT for incompatible compared to compatible trials) and a conflict adaptation effect (i.e., reduced Simon effect following incompatible compared to compatible trials). However, the interaction between picture valence and the Simon effect was modality dependant. Namely, our findings replicate previous results showing reduced emotional interference during incompatible compared to compatible trials only in the visual block. In the tactile block, there was a main effect for picture valence, which did not interact with compatibility. These findings suggest that although both visual and tactile Simon tasks depict control-related effects, the link between emotion and executive control is modality dependant.

A-0373

EFFECTS OF CULTURE AND EDUCATION ON GEOMETRICAL KNOWLEDGE

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It has been shown that geometrical knowledge can be found across different cultures and is therefore universal. Yet, also differences in performance between cultures were found, without a clear notion of what causes this. It could be that education is an important factor. This study is the first in which specific attention is paid to education, as well as linguistic differences. Furthermore, specific aspects of geometrical knowledge, such as categorical and coordinate spatial relations and connectedness, were tested in detail. 51 Senegalese participants were tested in Dakar, Senegal. 25 had not received any education. They were presented with six different images at the same time, one of which was different according to its geometrical properties. They were asked to point out the image they thought did not match the others. In total, 31 such trials were used. Their responses were compared to those of 30 educated Dutch individuals. Results show that on average all participants were able to apply the geometrical knowledge tested, as they all

scored above chance level. Culture had a strong effect on performance on all types of geometrical knowledge tested, as Dutch participants were more accurate in all cases. Education however, did not significantly affect performance.

A-0374

NEURAL CORRELATES OF COGNITIVE CONTROL REVEALED BY AN AUDIO-VISUAL CONFLICT TASK

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Surrounded by an overwhelming amount of sensory information, brain mechanisms allow us to selectively enhance task-relevant information while suppressing distracting information. In addition, our motor actions are continuously monitored and corrected according to our goals. These processes are often summarized as cognitive control functions. While a network of frontal and prefrontal areas is known to be involved in conflict monitoring and resolution, exactly how such control is implemented, e.g. by modulation of primary sensory encoding, multisensory integration or motor control remains an open question. Focusing on the control dynamics concerning modulation of the sensory cortices, we recorded fMRI data during an audio-visual conflict task. Our paradigm allows us to separate information processing of the relevant, visual stimulus feature, from the irrelevant, auditory feature. Preliminary findings show that a network of primary motor and sensory areas, as well as frontal and parietal areas show activation attenuation as a function of conflict level, suggesting gating to resolve conflict. Connectivity analysis will further allow us to study the dynamic interplay between these areas. Further, a concurrent behavioral/EMG study in the same subjects allows us to explore correlations between individual differences in behavioral profiles, brain activation and structure.

A-0375

WORD PREDICTABILITY MODULATES EARLY BRAIN RESPONSES TO OMITTED SPEECH SEGMENTS

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Speech signals are often compromised by disruptions, requiring the detection and replacement of missing information. Here we provide evidence for this process being supported by the predictive properties of the auditory system. We investigated the influence of a speech segment's predictability on early brain responses to this segment's omission. Predictability was manipulated in simple physical terms in a single-word framework (Experiment 1) or in complex semantic terms in a sentence framework (Experiment 2). In both experiments, final consonants of the German words "Lachs" (salmon) or "Latz" (bib) were occasionally omitted, resulting in the meaningless syllable "La". Brain responses were measured with multi-channel electroencephalography. The occasional presentation

of the fragment "La" elicited a larger omission response when the missing final segment had been predictable. This effect was robust against varying the type of predictive information and the allocation of attention. The omission response occurred ~125ms after the expected onset of the final segment and showed characteristics of the omission mismatch negativity (MMN). Source localization suggested the omission response enhancement by predictability to emerge from left superior temporal gyrus and left angular gyrus in both experiments. Our data are suggestive of a general auditory predictive mechanism at work, directly supporting speech comprehension.

A-0376

ERROR DETECTION IN SPEECH PRODUCTION AND PERCEPTION

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Theories on internal speech error monitoring mechanisms consist of three classes; the first assumes a general conflict monitoring mechanism localized in the ACC (Botvinck 2001). The second class of theories proposes production based error monitoring, whereby the language production mechanism works as a forward model (Pickering & Garrod, in press) with the cerebellum as a crucial structure for the forward models (Ito, 2008). The third proposes a perception error monitoring mechanism (e.g. Levelt 1989), which detects errors during production and perception in the STG (Indefrey & Levelt 2004). In an fMRI experiment we look at the anatomical location of error detection in production and perception by contrasting activation from correct trials and activation of erroneous trials per condition. Experimental paradigms consist of two tasks that elicit high error rates: tongue twister repetition (30%) and a manipulation of the picture-naming task (16%). By comparing activation for error detection in speech production and perception we verify whether any of the anatomical structures from the three theories corresponds to the observed activation patterns. We also observe whether error detection in production and perception rely on the same anatomical structures, as expected in a general conflict monitoring account and a perception based monitoring mechanism.

A-0377

THE ROLE OF ENCODING TIME IN THE MAINTENANCE OF INTEGRATED INFORMATION IN WORKING MEMORY

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Several studies on working memory have demonstrated better recall performance for maintaining integrated than separate features. These separate features can however be presented according to different presentation modes and encoding times to allow for comparison. The goal of the present experiments was to investigate the role of encoding time in the maintenance of integrated versus separate features. Letters and locations were presented either sequentially as separate features or simultaneously

in an integrated letter-in-location presentation. In the first experiment separate features were presented half of the presentation time of the integrated objects, resulting in an equivalent global presentation time of all features. In the second experiment, separate features were presented as long as integrated objects, resulting in a doubling of the global presentation time in the separate feature condition. While the first experiment showed a clear maintenance advantage for the integrated presentation mode, this advantage completely disappeared in the second experiment. The maintenance of integrated information does thus not necessarily result in better recall performance. Binding information can boost performance when learning time is limited. Equivalent recall performance is yet obtained by equalizing features' encoding time. These results question the representation of bound information in working memory.

A-0378

DESIGN PROBLEM SOLVING

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Designing is a ubiquitous activity although it has received little experimental investigation. This research addresses this gap in the literature and investigates the effect of constraints on design performance. Some theories consider how constraints affect the nature of the problem space and result in greater task complexity (e.g., Zhang & Norman, 1994). Also relational complexity theory (Halford, Wilson & Phillips, 1998) proposed that having to consider more qualitatively distinct types of constraint also increases complexity. The aim of two studies was to investigate the effect of both the number and nature of constraints on design performance. The research used a constraint satisfaction design task that involved designing the position of eight offices on an office plan. The participant's goal was to optimise their design by not violating specified constraints and completing the design as quickly as possible. Results indicated that increasing the number of constraints (Experiment 1) and increasing the types of constraint, whilst holding their number constant (Experiment 2), led to a deterioration on various measures of design performance. Consequently the complexity of navigating a design problem space is affected by both quantitative and qualitative differences in constraints. Theoretical issues are discussed together with implications for teaching design strategy.

A-0379

THE ROBUSTNESS OF EXEMPLAR EFFECTS IN WORD COMPREHENSION

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Several long-term priming studies indicate that speech comprehension does not only involve abstract lexical representations but also word exemplars. In three experiments, we investigated under which conditions exemplars play a role. Following McLennan, Luce & Charles-Luce (2003), McLennan & Luce (2005), and Mattys & Liss (2008), we conducted identity priming experiments to see whether listeners recognize the second occurrence of a

word (target) more quickly if this occurrence more closely resembles the first occurrence (prime). In contrast to previous studies, our experiments were much longer (288 or 800 trials versus maximally 120) and a smaller proportion of words was repeated (one-third or one-eighth versus two-third). In Experiments 1 and 2, prime and target could differ in the realization of schwa (reduced versus unreduced); in Experiment 3, prime and target could also differ in speaker voice. Robust priming effects only emerged in the simplest experiment (Experiment 1: 288 trials, one-third of the words repeated, and a single speaker). This raises the question to what extent participants in short experiments with many repeated words use strategies. Our results suggest that exemplars hardly play a role in speech comprehension in natural conversation, which may involve several speakers and only few repeated content words.

A-0381

SPONTANEOUS BEAT GESTURES MODULATE SPEECH PROCESSING THROUGH PHASE RESETTING OF THETA NEURAL OSCILLATIONS

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Speakers often accompany speech with spontaneous gestures (beats) to emphasize words in an utterance with a quick hand movement. We hypothesize that beat gestures, usually preceding the corresponding word onset by ~200ms, drive the auditory system into an 'optimal state' enhancing the integration of ensuing acoustic input. Here, we tested whether beats reset the phase of ongoing neural oscillations and align neural activity when the relevant auditory input arrives. Electroencephalographic (EEG) recordings were acquired while participants watched a continuous, naturally recorded political discourse. The phase-locking index (PLI) was calculated from the EEG time locked to the onset of words preceded by a beat or equivalent words pronounced without beat. When words were accompanied with a gesture, there was a PLI increase in the theta frequency range (4-6 Hz) at fronto-central electrodes, from around 200 ms before word-onset to 200ms post word-onset. Furthermore, this synchronization was not accompanied by an increase of power in the same frequency range, confirming the oscillatory-based nature of this effect and its potential modulatory role. These results suggest that beat gestures are used as predictive information capable to tune neural oscillations to the optimal phase for auditory integration during natural speech processing.

A-0382

TOP-DOWN CONTROLLED MECHANISMS AT THE ORIGIN OF THE SIMON EFFECT : EVIDENCE FROM A DUAL-TASK PARADIGM.

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Analysis of RT distributions in Simon task reveals that congruency effects decreased for the longest RTs. One functional interpretation for this finding is that the activation of the incorrect response by the irrelevant dimension of the stimulus, is progressively suppressed. Four experiments were carried out to examine the dependence of this suppression process to attentional resources. We specifically manipulated the availability of attention resources by requiring participants to perform a Simon task concurrently to different secondary tasks. RT distribution analysis (in particular delta plots) was performed under both single task or dual-task conditions. Results show that the mechanisms responsible for active suppression are affected by some attentional manipulations, but not all, and gave further information about both the conditions under which these mechanisms can occur and the nature of these mechanisms.

A-0383

DOES THE JOINT SIMON EFFECT EXIST FOR NON-SPATIAL DIMENSIONS?

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The joint Simon effect (JSE) is considered as an index of action co-representation. However, this interpretation has been recently called into question by the results of other studies suggesting that the JSE is mainly a spatial phenomenon, being it triggered by any salient event that provides a reference for spatially coding one's own action. The present study aimed at investigating whether the spatial dimension that characterized the Simon task is necessary for the JSE to occur. Participants were required to judge the shape of a central colored (red/green) stimulus by pressing a left or right button, while wearing colored (red/green) gloves (Experiment 1), or by producing the word "red" or "green" (Experiment 2). In both experiments participants performed the task individually (two-choice individual condition) and co-acting with a partner (social condition). S-R congruence effects were observed in the individual condition of both experiments and in the social condition of Experiment 1 only. The present results suggest that the spatial dimension is sufficient but not necessary for the JSE to occur. Indeed, social S-R congruence effects may also be elicited by other features, such as stimulus color, provided that these features allow discriminating between one's own and the co-actor's action.

A-0384

REVISITING TEMPORAL DEFICITS IN DYSLEXIA

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Developmental dyslexia is typically associated with a phonological deficit but the origin of this deficit is still a matter of debate. The purpose of the present study was to reexamine Tallal's rapid processing deficit theory according to which phonological deficits are caused by auditory temporal processing impairments. This was done in a serie of three experiments. In Experiment 1, we investigated whether such a temporal deficit could be found in speech as well as non-speech stimuli, and whether it would generalize to other sensory modalities. The results showed that children with dyslexia, compared to normally developing age-matched controls, presented temporal deficits when processing segmental durations as well as the duration of non speech auditory or visual stimuli. In the framework of cognitive theories of temporal processing, these data suggest either a dysfunction of the "internal clock" in children with dyslexia or that temporal deficits could be secondary to more general attention or short term memory deficits. These two hypotheses have been respectively explored in Experiments 2 and 3. The results put all together seem rather in favor of a dysfunction of the internal clock and therefore support Tallal's theory.

A-0385

VISUAL AND AUDITORY PERCEPTION IN CHILDREN AT RISK FOR READING PROBLEMS

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Learning to read is a simple process for most children but some of them have developmental reading disability or dyslexia. To date, early predictions have been restricted to using measures of phonological processing and letter knowledge. These phonological problems are possibly rooted in a more general perceptual mechanism that can affect not only auditory perception but also to visual perception. The present study examines visual and auditory perception in 30 preschool children at risk for readings problems and 30 without risk for dyslexia. Children were tested before the initiation of formal reading instruction on visual and auditory tasks of temporal order judgment (TOJ) and discrimination tasks (S/D). The children at risk for reading, in visual and auditory modalities, perform poorer in tasks requiring temporal processing than discrimination tasks; while there were no differences in the performance of the control group between auditory temporal and discrimination tasks. The present study suggests that the difficulty to process the temporal order in rapid succession of acoustic and visual items, could operate as an early predictor in reading problems.

A-0387

DIFFERENT ATTENTION BIASES FOR RUMINATORS AND WORRIERS

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This study aims to investigate whether the attention biases associated with affective disorders also exist at a subclinical level. Several studies have shown that depressed persons have an impaired ability to divert their attention away from negative information. Anxious persons, on the other hand, have an attention bias towards threat-related material at earlier stages of information processing. One of the transdiagnostic characteristics these affective disorders have in common at a subclinical level is persistent negative thinking. In depression, this persistent negative thinking is called rumination. In anxiety disorders, this process is called worrying. We investigated the association between rumination, worrying and attention biases in an undergraduate sample (N= 53), using two different versions of the exogenous cueing tasks (ECT). In the first ECT, cues were negative and positive personality traits. In the second ECT, cues were negative and positive words related to themes respondents frequently worry about. Results showed that only ruminators have difficulties to disengage their attention away from negative personality traits. There were no attention biases for worriers, and no attention biases towards worry-related cues. Potential clinical implications are further discussed.

A-0388

UPDATING SKILLS AND ALERTNESS IN SIMULTANEOUS INTERPRETERS

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Simultaneous interpretation (SI) is related to high Working Memory capacity (e.g.: Christoffels, de Groot and Kroll, 2006; Signorelli, Haarmann, & Obler, 2012). However little is known about its effects on executive functions. In this study we aimed to evaluate how SI modulates updating and attentional networks by comparing professional interpreters to a control group matched in demographic features, second language proficiency and intelligence, but with no experience in interpretation. In Experiment 1, participants performed a dual version of the n-back task (Jaeggi et al. 2007). We found that interpreters outperformed controls, especially in the very demanding dual task condition. Experiment 2 explored the three attentional networks: alertness, orientation, and executive control. Both groups showed equivalently conflict effects, however they showed differences in the interaction between the alertness and orientation networks. The control group showed larger cuing (orientation) effects when an alerting tone was presented. However, cuing effects for the interpreters were unaffected by the warning tone indicating that their alert rate remained high during the task regardless the external stimuli. Taken together, these results suggest that experience in SI does not benefit cognitive processes in general, but those that are more closely related to the interpreting tasks.

A-0389

A NEW QUESTIONNAIRE ON COGNITIVE FAILURE AND WORK CONDITIONS

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Cognitive failures are lapses in cognitive functioning, e.g. attention, memory, and motor functions. There are many conditions at workplaces, e.g. interruptions and noise, that are known to disrupt cognitive function, and may thus lead to cognitive failure, human error, and accidents at work. The aim of our study was to develop a questionnaire on cognitive failure at work and their preconditions that is suitable for conventional occupations. The participants were 1664 employees. They filled in the 15-item Workplace Cognitive Failure Scale (WCFS), consisting of subscales of Memory, Attention, and Action. Fifteen new items were included to assess perception of relevant information, forgetting work tasks, multitasking, and acting in the environment. In addition, a novel Work Conditions Scale consisting of 35 items probed poor perception conditions, taxing environment or work, and work flow and interruptions. The results replicated the 3-factor structure of the original WCFS; with the additional items we found four additional subscales for cognitive failure. There were seven subscales for work-related factors that are likely to impair cognitive functioning. The novel subscales were meaningful and had high reliability scores. We present and discuss the results that indicate several correlational relations between work conditions and cognitive failure.

A-0390

CONTEXTUAL INFLUENCES IN A MULTITASKING SETTING: WHAT INFORMATION IS USEFUL?

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Contextual influences over and above associative learning mechanisms have attracted lots of interest in cognitive control research in the recent past (i.e. Crump & Logan, 2010). In most studies reporting such an influence of context congruency on stimulus level has been assessed using the Stroop task. Stimuli were either congruent (i.e. requesting the same response) or incongruent within the same task. In our study we were interested in whether this contextual influence is also observable across task-sets, for instance in a task switching paradigm. In our experiments we manipulated proportion congruency between different positions on the screen in which the tasks were encountered (i.e. 80% congruent/20% incongruent for the upper/lower half of the screen) for a training phase of 11 blocks. With proportion congruency we refer to stimuli that require the same response (i.e. a left key press) in either of the two tasks relevant in this experiment. Next to cue format, we manipulated the explicitness of the different portions of congruency in the different screen positions when assessing transfer to a 50% congruency condition.

A-0393

AUTOMATIC FEATURES OF EVALUATIVE LEARNING

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Evaluative conditioning (EC) is a change in evaluation of previously neutral stimulus (CS) due to its pairing with the affect laden stimulus (US). The presented research examines two aspects of automaticity of EC, namely its availability to intentional control and dependence on attentional resources. First two studies manipulated the instruction to either prevent or promote the influence of US on the CS before (Study 1) and after (Study 2) conditioning. Study 1 showed limited intentional control over the acquisition of conditioned responses and relatively more control over their expression. Study 2 replicated these findings and extended them by showing that memory for CS-US contingencies mediates intentional control over EC effects. Finally, Study 2 tested if EC depends on attentional resources by applying a secondary task during conditioning. The results showed significant EC effect under attentional load as well as little effect of control instructions as compared with a control condition (no attentional load). We conclude that evaluative conditioning shares at least two features of automaticity: it is difficult to control and does not depend on attentional resources.

A-0394

NUMERACY AND LEARNING IN AGEING

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Does our ability to process numbers and arithmetical concepts change with ageing? Are these changes specific to numeracy or do they reflect the decline of more general cognitive processes such as attention or executive functions? Numerical skills have been extensively studied in children and young adults, both in terms of development and impairment following brain lesions but whether they change in healthy ageing is not well known. Moreover, the extent to which numeracy skills can improve in elderly participants is an open question.

Two studies addressed the above questions. A first study, combining psychophysics and neuropsychology, provides evidence that numeracy is resilient to ageing but it is influenced by the decline of auxiliary processes supporting number performance, and specifically inhibitory skills. A second study, based on number training with and without brain stimulation, shows that elderly people can indeed improve numeracy skills but that different from younger participants, successful learning in older is associated with a cost in processing other untrained quantity-based skills, such as time and space.

Together these findings suggest that numeracy skills are resilient to ageing possibly because they rely on a primitive number system which can be further refined with training.

A-0395

EMOTIONAL ANTICIPATION IN INDIVIDUALS WITH ASPERGER'S SYNDROME

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Distortions in the perception of dynamic facial expressions were explored in adults with typical-development (TD) and Asperger's Syndrome (AS). We examined the roles played by (i) perceptual processes such as sequential contrast/context effects and representational momentum, and by (ii) emotional anticipation: the involuntary anticipation of the other's emotional state of mind, based on the immediately preceding perceptual history. Short video-clips of facial expressions were presented that morphed from 100% joy (or anger) to neutral expressions. Both groups judged the final expression of the joy-videos as slightly angry and the identical final expression of the anger-videos as slightly happy ('overshoot' bias). Two further experiments suggested, however, that these identical results were underpinned by different mechanisms. (1) A change of actor-identity during the clip removed the bias in the TD group, but not in the AS group; (2) when the sequences started with a neutral expression (neutral-to-joy/anger-to-neutral) the AS participants showed no response bias, while the TD group showed an 'undershoot' response. These findings suggest that only in TD individuals the perceptual judgments of other's facial expressions were influenced by emotional anticipation, while AS individuals may have been influenced by the contrast between the start and end expressions (both 300ms).

A-0397

THE INFLUENCE OF INFORMATION PROCESSING ON A FALSE HORIZON ILLUSION AND PILOTS' EFFECTIVENESS

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This study examined the relationship between information processing, a false horizon illusion and pilots' effectiveness. It has been assumed that the dimension of global – local perceptual style (bottom-up, shallow and sensory levels of processing) will have more impact on producing a false horizon illusion than dependent – independent style of perception which typically involves deeper cognitive structures (top-down).

66 military pilots performed an experimental task on the Hyperion flight simulator (age 32.25; +/- 6.64; total flying time 1017.6 hours +/- 797.6). The asymmetry of heading was used as a measure of their efficiency. Computerised Navon's tasks and Witkin's tasks were used to measure global-local (extensive – intensive states attention) and dependent-independent styles respectively.

A global style of perception (when a local style was controlled for) was found to be a predictor of pilots' effectiveness explaining about 6% of variance. The allocentric (environmental) frame of reference seems to have more impact on the perception of people with a global perceptual style. In a global style, attention orienting seems to play a particularly important role and favors broadening the scope of information processing at the expense of depth of processing (as in the extensive states of attention).

key: false horizon illusion, attention, FDI

A-0398

DO TODDLERS RECOGNIZE REDUCED PRONUNCIATION VARIANTS?

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In spontaneous conversations, words are often pronounced with fewer segments or syllables than in their citation forms. For example, the English word *police* can be pronounced as *p'lice*. Previous research has argued that adult speakers and listeners have stored lexical representations for at least some of these pronunciation variants in their mental lexicons (see Ernestus, in press), but it is still unknown how and when these representations are acquired. Previous studies have indicated that infants are frequently confronted with variability in speech caused by reduction processes (e.g. Bortfeld & Morgan, 2010; Shockey & Bond, 1980). In the present study, we investigated the perception of reduced pronunciation variants by 20- to 28-month-olds acquiring Canadian English. We focused on a common reduction process in English: schwa deletion in unstressed syllables. Children were taught to associate bisyllabic nonsense words containing a schwa in the initial syllable (e.g. *satoom*) with new objects. They were then tested in a preferential looking procedure on tokens of these words with schwa present, with deleted schwa and with a mispronunciation of the first consonant of the second syllable. Results will be discussed with regards to the formation of representations for reduced speech by young language learners.

A-0399

EEG CORRELATES OF OBJECT PROCESSING IN PERSPECTIVE TAKING

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Perspective taking, as an essential requirement of everyday social interactions, has been at focus of research on social cognition. In an EEG study involving adults, we presented participants with a simple scene containing an object and an agent. The object was occasionally occluded either from only the agent, or from the participant's view as well. In the control condition, the object dissolved before the occluder started to move, resulting in the same overall movement without an object being occluded. We measured event-related oscillatory activity in both conditions. Compared to the control condition, our results show larger suppression of alpha-band oscillations over dorsal visual areas both in the case of occlusion of the object (1) from the participant and (2) from the agent. Thus, occlusion of an object resulted in larger visual activation – indicative of stronger visual processing of the scene – than occlusion with the object absent even when the occlusion was only observable from the agent's perspective. This suggests that processing of someone's perspective involves similar brain processes as processing the same scene from one's own point of view.

A-0400

ARE BI-MORA FREQUENCY EFFECTS POSITION-SPECIFIC? ACCUMULATION AND IMPLEMENTATION OF LONG-TERM PHONOLOGICAL KNOWLEDGE FOR SERIAL ORDERING

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Serial ordering is critical for language processing. Phonological knowledge of sequences (e.g., what sound tends to follow what sound) contributes to serial ordering as suggested by the bigram/bi-mora frequency effects, the phenomena that the frequency of the co-occurrence of two letters or phonological units affects language processing. However, it is unclear how such frequency is calculated and used for serial ordering. Specifically, of the two models that represent the accumulation and implementation of long-term phonological knowledge, a model that was developed by Burgess and Hitch (2006) assumes that frequency is represented in a within-word position-specific manner while a parallel distributed processing simple recurrent network (e.g., Botvinick & Plaut, 2006) is capable of calculating both position-specific and position-free frequencies for serial ordering. Despite their theoretical importance, these two types of bigram/bi-mora frequency effects have not been explicitly separated in previous research. Thus, we orthogonally manipulated the position-free and specific bi-mora frequencies in an immediate serial recall experiment using four-mora Japanese nonwords. The results indicated dissociable effects of position-free as well as of position-specific bi-mora frequencies. The former affected recall accuracy in later inter-word positions and the latter affected that in earlier ones. The results also revealed an interaction between these effects.

A-0401

UPDATING AND MAINTENANCE OF TASK-CONTEXT IN WORKING MEMORY

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Goal-directed behavior depends on maintaining the relevant task-context in working memory (WM). Recent behavioral and neuroimaging studies (e.g., D'Ardenne et al., 2012, PNAS) suggested that the task context is updated in WM whenever the context is necessary for interpreting the stimulus. A variant of the AX-CPT paradigm was used, in which a task-context cue was presented in each trial, followed by a target stimulus. In context-dependent tasks, the interpretation of the target differed among the tasks, and hence required maintaining the currently relevant task-context. In context-independent tasks, the interpretation of the target was consistent regardless of the cue. WM updating was assumed to take place only when maintaining the context was necessary (namely, in context-dependent tasks only). We tested this assumption in 5 experiments that employed the above paradigm. A task-switching cost was found when switching between context-dependent tasks, suggesting that WM updating does not occur whenever the context is relevant, but only when it changes. A similar switching cost was observed between

context-independent tasks. Finally, task-repetitions were as fast and accurate for both context-dependent and context independent tasks. These results indicate that updating the current goal in WM takes place even when maintaining the task-context is not required.

A-0402

TASK-RELATED VERSUS STIMULUS-RELATED ATTENTION STYLE AS REFLECTED BY DISTRACTOR DETECTION SENSITIVITY IN A VERBAL SHORT-MEMORY TASK.

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Recent studies have demonstrated a competition between task-related and stimulus-related attention in verbal short-term memory (STM). Task-related attention increases while stimulus-related attention decreases as a function of STM load. The aim of this study is to explore interindividual differences in task-related versus stimulus-related attention capacities and their role in determining performance in verbal STM tasks. Participants performed a verbal STM task with varying STM load to probe task-related attention capacity, and the occurrence of a brief unexpected distractor stimulus during the maintenance phase to probe stimulus-related attention capacity. We observed a decreased sensitivity to the distractor stimulus with increasing STM load. Interindividual differences in sensitivity to STM load and distractor occurrence predicted performance on an independent immediate serial recall verbal STM task. These data support the role of interindividual differences in task-related and stimulus-related attention capacity as explanatory factors of interindividual differences in STM performance, and more generally, suggest the existence of attentional styles differing along a task-related – stimulus-related dimension.

A-0403

INHIBITORY MECHANISM INVOLVED IN THE SELECTION OF ARITHMETIC FACTS

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We evaluated the coactivation of arithmetic facts and the possible inhibitory mechanism used to select the correct one. The participants were presented with sums and they decided whether they were correct. In the first trial (T1), the sums were incorrect but the result was (a) the one of multiplying the operands ($2 + 6 = 12$) or (b) it was unrelated ($3 + 4 = 10$). In the second trial (T2), the sums were correct and the result was (c) the one of multiplying the operands of T1 ($5 + 7 = 12$) or (d) it was unrelated ($3 + 7 = 10$). In T1, the participants took more time in (a) relative to the (b) condition. In T2, the response times were slower in (c) relative to the (d) condition. The result obtained in T1 corroborated that participants coactivated arithmetic facts of multiplications even when they were irrelevant. Importantly, the results found in T2 suggest that participants used an inhibitory mechanism to suppress the wrong result (the one associated to the multiplication). As a consequence, they took more time to reactivate it when it became relevant in the related condition of T2.

A-0405

FEATURES OF LATERALIZATION OF SPEECH EMOTIONAL PROSODY PERCEPTION IN THE PROCESS OF PERCEPTUAL LEARNING

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It is known that a number of factors affect perceptual learning (PL) including external noise, complexity of the task, and the nature of the stimuli used in the discrimination task. Most authors studied PL in visual perception and very few investigated the emotional PL in auditory domain. The aim of this work was to study the features of lateralization of speech emotional prosody perception in the course of PL in adult listeners. They had to recognize test stimuli of happy, angry, neutral emotional intonations in the changing acoustical environment (at "white noise" background and without noise). The sample consisted of 38 adults (23 females and 15 males) of mean age 21.1 ± 0.4 . Reaction time (RT) and accuracy of recognition (AR) were recorded in two consequent sessions of trials and generalizing index considering the both of them was calculated (relative recognition efficiency – $RRE=AR/RT$). Analysis of variance showed the factor of session's sequence to be highly significant for RRE. The lateralization revealed for speech emotional tone recognition in the course of perceptual learning was found to depend on the emotional intonation valence and the acoustical environment that, in its turn, confirmed dynamic behavior of functional asymmetry.

A-0406

HOW DO BILINGUALS TRANSLATE NUMERICAL WORDS?

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There is a general agreement on assuming that the two languages of the bilinguals are connected by two routes: One goes through the semantic representation and the other consists on direct links between lexical representations. These routes are supported in several studies by showing that semantic mediation is larger when bilinguals translate from their first language (L1) to their second language (L2) relative to the L2 to L1 translation. The present study evaluated whether this asymmetry applies to the case of numerical information by using a semantic blocking paradigm. In three experiments we examined the performance of Spanish-L1/English-L2 bilinguals. In Experiment 1, the participants named Arabic digits in their two languages; in Experiment 2, participants read numerical words presented in their two languages; and in Experiment 3, they were required to perform a forward translation task and a backward translation task. The results showed that for numerical stimuli the blocked context produced a facilitatory effect relative to the mixed context, which suggests that the translation of number words does not require semantic mediation. The results are discussed in terms of associative links among lexical nodes in the bilingual lexicon.

A-0407

HOW EXPLAINING FALSE MEMORIES IN ADULTHOOD: RELATIONSHIP BETWEEN INHIBITION CAPACITIES AND MONITORING PROCESSES

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Empirical evidence suggests an increase in the production of false memories with age. The activation-monitoring theory proposes that strategic monitoring processes influence the probability of false recall in the DRM paradigm. Furthermore, according to the executive hypothesis, one source of aged-related differences in memory arises from a decline in the executive functions such as inhibition. We hypothesized that high inhibition level enables efficient use of monitoring processes during information retrieval thus reducing false memories. To test our hypothesis, we conducted two studies in which younger adults and older adults, contrasted according to their inhibition level, participated to a standard DRM paradigm (Study 1) or to an inclusion DRM paradigm which disables monitoring (Study 2). Results indicated that older adults with low inhibition capacities produced more false memories (critical lures) than older adults with higher inhibition capacities suggesting difficulties to use monitoring processes. In younger adults, however, inhibition capacities had no influence on the production of false memories. Results are interpreted as suggesting that the involvement of inhibition is responsible of the impairment of monitoring in the elderly.

A-0408

ACCESSING OUR MEMORY: IN SUPPORT OF THE CONTINUOUS DUAL-PROCESS MODEL OF RECOGNITION MEMORY

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The subjective experience of recognition memory usually comprises both a sense of familiarity for the specific item and the recollection of the previous encounter. This notion has been reflected in the dual-process theory of recognition, which describes two underlying processes: Familiarity and Recollection. Recollection involves conscious remembering of contextual details about prior learning episode. Familiarity, in contrast, involves a relatively automatic, a-historical assessment elicited by an item, without further information about the learning episode. Whereas familiarity is usually described using the principles of Signal-Detection Theory, the nature of recollection is still under debate. The most dominant dual-process theory maintains that recollection is a threshold process, available for only some of the studied items (Yonelinas, 2001). In contrast, the Continuous Dual Process (CDP) model (Wixted & Mickes, 2010) suggests that recollection is a continuous process available to some degree for all items. To examine this question, we used a variation of the independent-scales methodology of the remember-know task (Higham & Vokey, 2004). In a recognition test, we asked participants to provide both familiarity and recollection scores on continuous scales, in addition to completing a source-memory test. Results support the notion of continuous recollection, as proposed by the CDP.

A-0409

ON THE RELATION BETWEEN SELF-AGENCY AND MOTIVATION

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People set and pursue goals in situations where self-causation over actions and outcomes may be ambiguous. For example, one may experience having caused one's friends to laugh after telling a joke, whereas in actuality they are laughing about someone with a funny haircut. Recent research suggests that in such ambiguous situations self-agency experiences arise from an inference process in which matches versus mismatches between a person's goals and outcomes are taken as evidence for self-causation. In two studies we examined the implications for goal pursuit by investigating the relation between self-agency and motivation as a function of self-chosen versus imposed goals. Participants performed an action-outcome task in which outcomes matched or mismatched goals that were self-chosen versus imposed (Studies 1 and 2), and neutral versus desirable (Study 2), followed by a measure of experienced self-agency and motivation to attain goals. Results showed that goal achievement (i.e., match between goal and outcome) enhanced self-agency for self-chosen, imposed, neutral, and desirable goals. However, motivation was enhanced only after achievement of self-chosen and desirable goals. These findings indicate a dissociation in the processes that underlie self-agency and motivation, and suggest that experiences of self-agency do not necessarily motivate future goal setting and striving.

A-0410

THE COSTS OF LYING BACK: HOW WHOLE-BODY POSTURE AFFECTS COGNITIVE CONTROL

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Body posture can influence a broad range of cognitive, emotional and motivational processes. Here we examined whether whole-body posture can affect behavioural and neurophysiological processes of cognitive control. Our hypothesis was that a body posture reflecting low approach motivation (i.e. reclining backward) would affect specific aspects of cognitive control, namely the ability to inhibit task-irrelevant information. To test this hypothesis, participants performed a task designed to induce response conflict through the presentation of spatially incompatible stimuli, either seating upright or reclining backward. Electroencephalogram (EEG) and Electromyogram (EMG) were recorded. The analysis of the temporal dynamics of motor activation (i.e. conditional accuracy function) revealed stronger early activation of the incorrect response when participants were reclining backward, as compared to when they were seating upright. EMG and EEG signals also indicated that task-irrelevant information elicited greater motor activation of the incorrect response in the reclined condition. The two conditions did not differ regarding overall performance (e.g. reaction times and

accuracy), suggesting that these effects were specific for the processing of task-irrelevant information. Our findings show that whole-body posture can influence specific cognitive control processes, and they suggest that body posture can be used as an implicit manipulation of the motivational state.

A-0411

DETERMINANTS OF THE VARIATIONS OF THE OPERATIONAL MOMENTUM

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The operational momentum (OM) effect is an equivalent of the representational momentum on numerical skills which are translated into a number mental line. This study investigates the variations of the OM in additions of small symbolic numbers (2 to 9), depending on operand sizes (> or = 5) and operands-response SOA (100ms or 250ms). Two experiments involved seventy two participants who had to judge as quickly and accurately as possible, after reading of an addition involving two operands, if the proposed outcome was true or not. The false responses varied in distance to the true outcome : six possible false responses were proposed. At short SOA, responses were overestimated when one operand was small and the other large. Furthermore, this operational momentum was reversed when the operands were large (>5). At long SOA, responses were overestimated when both operands were small (=5). The inverse operational momentum was also significant. These new results on variations and reverse OM effects are discussed as revealing processing of the operations within the mental space defined by operands and responses.

A-0412

ADVANCE RE-ORIENTATION AND ATTENTIONAL INERTIA IN TASK-SWITCHING: AN EYE-TRACKING STUDY

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Among the potential, but neglected, sources of task-switch costs is the need to reallocate attention to different attributes or objects. Whether, at what stage, and to what extent this process contributes to the RT switch cost remains controversial. We examined the dynamics of selective spatial attention in a task-cueing paradigm using eye-tracking. Digits were presented simultaneously at three locations. A cue preceded this stimulus by a variable interval, instructing the participant to perform one of three classification tasks (odd-even, low-high, inner-outer) each consistently associated with a location, so that task preparation could be tracked via fixation of the task-relevant location. Task-switching led to a delay in fixating the relevant location and a tendency to mis-allocate attention to the previously relevant location. These effects predicted RT switch costs within and over participants. The 'pull' of attention towards the previously relevant location was reduced but not eliminated by extending the preparation interval, suggesting that 'attentional inertia' contributes even to the 'residual' switch cost. A control experiment, using identical displays but only one task,

showed that these effects could not be attributed to the (modest) delays or inertia observed in shifting attention between locations independently of a task change.

A-0413

RELATED BUT NOT THE SAME: ORDINALITY, CARDINALITY AND ONE-TO-ONE-CORRESPONDENCE IN FINGER-NUMBER ASSOCIATIONS

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Recently, finger counting has gained increasing research interest. However, the term finger counting is often used to denote a variety of different aspects. Basically, one may differentiate between three fundamental principles: (i) ordinality (order), (ii) cardinality and (iii) one-to-one-correspondence. Interestingly, these aspects have not been examined in one study yet. The aim of this study was, thus, to evaluate commonalities but also specificities of these three aspects. Therefore, 68 German participants performed an ordinal finger counting and a cardinal finger counting task. From these, 40 participants completed an additional butterfly task assessing 1-to-1-correspondence with twisted arms and fingers. Ordinal finger counting and cardinal finger counting patterns were observed to be largely identical for most numbers with specific exception (e.g. 4 and 9). Interestingly, performance in the 1-to-1 correspondence assessment was not affected by participants finger counting direction (canonical vs. non-canonical) prior to the task so participants were able to flexibly assign the numbers to either the right or left hand. Taken together, ordinal and cardinal aspects of finger counting seemed to follow a mostly fixed pattern but also allow for a highly flexible assignment of numbers to either the right or left hand.

A-0415

POWER TO THE WILL!

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The sense of agency (SoA) refers to the experience of being in control of one's actions and its consequences. The 19th century French philosopher Maine de Biran already proposed that the sensation of effort might provide an internal cue for distinguishing self-caused from other changes in the environment. The study that will be presented is the first to empirically test the philosophical idea that effort promotes self-agency. We used intentional binding (IB) as an implicit measure of SoA. IB refers to the subjective temporal attraction between an action and its sensory consequences. Effort was manipulated independently of the task by requiring participants to pull stretch bands of varying resistance levels. We found that IB was enhanced with increased effort. This suggests not only that the experience of effort directly contributes to the SoA, but also that the integration of effort as an agency cue is non-specific to the effort requirement of the action itself.

A-0416

EFFECTS OF STIMULUS DURATION AND INTER-LETTER SPACING ON LETTER-IN-STRING IDENTIFICATION

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We describe the results of two experiments using a post-cued letter-in-string identification paradigm where subjects are briefly shown strings of random consonants centered on fixation, and immediately following stimulus presentation are asked to provide the identity of the letter that had appeared at a post-cued location. Strings were 5-letters in length (e.g., PGKDM), and stimulus duration was manipulated in Experiment 1 (13 ms – 91 ms) and inter-letter spacing in Experiment 2. Effects of both variables were found to depend on letter position, with different patterns emerging for outer letters and inner letters. Outer letters benefited most rapidly from an increase in exposure duration, with the greatest rise in performance occurring between 13 ms and 26 ms. Furthermore, outer letters were the most affected by spacing, with accuracy decreasing as spacing increased, most likely because of the concomitant increase in eccentricity. Only central letters benefited from increased spacing, most likely due to a decrease in crowding with a fixed eccentricity. The opposite influence of these two factors can account for the null effects of spacing on letter identification at the 2nd and 4th positions in 5-letter strings.

A-0417

VISUAL BACKWARD MASKING PERFORMANCE IS MODULATED BY SEX AND SCHIZOTYPY

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Deficits in visual backward masking (VBM) may be a stable marker (i.e. endophenotype) of schizophrenia: it is present in patients, their relatives, and healthy individuals (mainly women) scoring high in „cognitive disorganisation“ (CD), a schizotypal feature (Cappe et al., 2012). Schizotypy is a non-clinical thinking style commonly assessed in the healthy population. The thought content is qualitatively similar yet quantitatively milder to the one reported from patients with schizophrenia. To test whether VBM as a function of CD is evident in both men and women, we investigated VBM in 29 men and 27 women varying in their self-reported schizotypy (short O-LIFE questionnaire), together with a control task (Wisconsin Card Sorting Task; WCST). We replicated VBM deficits as a function of elevated CD, but only in women. WCST performance was unrelated to sex and schizotypy. Results support the view that VBM, but not WCST, is a potential endophenotype. The current sex difference in VBM launches questions regarding possible hormonal effects or even sex-specific self-report measures biases.

A-0418

N-2 REPETITION COST IN TASK SWITCHING: INVESTIGATING FOUR-TASK SEQUENCES

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N-2 repetition cost is a reaction time and error cost when returning to a task A recently performed after one intervening trial (i.e. an ABA task sequence) compared to returning to a task not recently performed (i.e. a CBA task sequence). This cost is usually taken as evidence for inhibition of tasks in task switching. Taking trial n-3 into consideration, the present paper reports a novel sequential effect that is not fully compatible with this interpretation. In a 2x2 factorial design, it was manipulated whether or not the current trial was a n-2 task repetition, and whether or not the previous trial was a n-2 task repetition. This resulted in four different kinds of task sequences: BABA, CABA, BCBA, and DCBA. Statistical analysis revealed an interaction of the factors “n-2 repetition in current trial” and “n-2 repetition in previous trial”. The data pattern resembles the pattern of conflict adaptation effects reported in single-task studies, if n-2 repetitions are defined as conflict trials. It is suggested that task sequence effects in task switching could be explained within the framework of the conflict monitoring theory.

A-0419

INVESTIGATING THE EFFECTS OF WORKING MEMORY TRAINING: AN FMRI STUDY

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Previous studies have shown that working memory (WM) processes can be optimized by training, and that the enhancements are not solely task specific but transfer also to untrained WM tasks and to tasks measuring different cognitive functions. However, it is still not clear, which characteristics define the most efficient training tasks. Additionally, knowledge on training related changes in the underlying neural substrate is lacking. In the present study we approach these issues by investigating training and transfer effects for a combination of two working memory (WM) n-back tasks. Group 1 trained on an auditory and a visuospatial n-back task simultaneously (dual training), while group 2 trained on the two tasks separately (single training) for 16 days. Before and after the training period all participants attended MRI scanning and completed tests on untrained tasks tapping executive functioning. Following dual training, positive effects on different aspects of executive functions were demonstrated, including measures of task switching and attentional control. We discuss these results in reference to the effects of single training as well as to the plasticity of the neural networks underlying these functions.

A-0420

THE PROCESS DISSOCIATION PROCEDURE IN SEQUENCE LEARNING: 10 YEARS OF RESEARCH

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In 1991, Jacoby proposed the process dissociation procedure (PDP) as a way to establish the existence of qualitative dissociations between explicit and implicit forms of memory. Ten years later, Destrebecqz and Cleeremans (2001) successfully applied the PDP to sequence learning in order to disentangle implicit from explicit knowledge acquisition in the serial reaction time task. To assess explicit knowledge after training on the SRT task, they used a free generation task, under both inclusion and exclusion conditions. In the inclusion subtask, participants were required to freely generate a series of trials that resembled the training sequence as much as possible. On the contrary, in the exclusion subtask they were told to try to avoid reproducing the sequential regularities. Since then, many researchers have used this method as a tool for investigating the role of controlled vs. automatic processes in sequence learning. In this talk, we review the major findings obtained with this paradigm, discuss its contribution to the study of the relationships between implicit and explicit learning, and present some further methodological improvements.

A-0421

THE SNARC EFFECT AND ITS RELATIONSHIP TO SPATIAL ABILITIES IN WOMEN

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A classical demonstration of number-space associations is the so-called SNARC (Spatial Numerical Association of Response Codes) effect. It consists in faster reaction times to small/large digits with the left/right hand respectively. To get a better understanding of the well-documented inter-individual variability in the SNARC effect, we investigated the relationship between the classically used parity SNARC and spatial abilities, as indexed by visuo-spatial working memory capacity (WMC). The study population consisted of female university students (n=20; mean age=23.79; SD=2.50) recruited in the fields of humanities and educational sciences. Since systematic studies on the reliability of the SNARC effect are still lacking, we first measured the internal consistency, as assessed by split-half reliability, as well as test-retest reliability of the parity SNARC. Split-half and test-retest correlation coefficients were (r(19)=0.41; p<0.05) and (r(19)=0.25; p=0.14) respectively, indicating a trend towards consistency. In the present female population, a significant negative correlation was revealed between the strength of the parity SNARC effect (mean slope=-10.04; SD=8.66) and visuo-spatial WMC (mean WMC=2.85; SD=1.12; r(19)=-0.51; p<0.05). This finding thus indicates that number-space associations as measured by the parity SNARC effect tend to be stronger in young female adults with higher spatial abilities.

A-0422

DYNAMICS OF RESPONSE PREPARATION IN WORD TYPING: EVIDENCE FROM EEG

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Typewriting is a pervasive phenomenon in modern information societies, yet its cognitive underpinnings remain poorly understood. Behavioural models of typewriting have postulated that inhibitory processes drive the serial production of keystrokes (Rumelhart & Norman, 1982). We used electrophysiological evidence to test for the existence of these inhibitory processes.

In our protocol, eight expert typists produced typewritten whole words in response to pictures depicting single visual objects. The object names comprised letters located on both sides of the keyboard, and hence were typed with different hands. To focus on motor response production, EEG activity was examined time-locked to the first keystroke.

Preceding the motor response, we observed a negativity and positivity EEG pattern developing over, respectively, the contralateral and ipsilateral sensorimotor areas. This finding is interpreted by analogy with similar patterns previously observed in two-alternative forced choice tasks (e.g., Vidal et al., 2003). It suggests that the activation of the contralateral primary motor cortex involved in the movement of the typing hand is accompanied by an inhibition of the ipsilateral motor cortex, involved in the movement of the other hand. We believe these data constitute the first electrophysiological demonstration of the existence of the inhibitory processes postulated by behavioural models of typewriting.

A-0423

THE ROLE OF EXECUTIVE CONTROL IN BILINGUAL LANGUAGE PRODUCTION: A STUDY WITH PARKINSON'S DISEASE PATIENTS

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In the context of bilingualism, it has been reported that basal ganglia are critically involved in those mechanisms which allow bilingual speakers to control the use of two languages. In the present study we aim to investigate the integrity of the bilingual language control (bLC) mechanisms in Parkinson's disease (PD) patients, a clinical population having structural and functional damages in basal ganglia. To test the integrity of bLC we compared the performance of Catalan-Spanish bilingual PD patients with those of healthy controls in a language switching task. In this paradigm bilinguals name pictures in one language (single blocks) or in both languages depending on a cue (mixed blocks). To test also the integrity of the executive

control, we compared the performances of PD and healthy controls in a non-linguistic switching task. Overall, PD patients compared to controls had affected performances in the non-linguistic switching task and to a lesser extent in the language switching task. However, within the group of PD patients those who made more errors in the non-linguistic task were also more impaired in the language switching task. These results add new evidence on the role of executive control and basal ganglia in bilingual language production.

A-0424

NEURAL CORRELATES OF OBJECT TRACKING AND OBJECT MAINTENANCE IN 6-MONTH-OLDS

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Human adults are thought to possess a powerful object representation system that allows them to track objects through space and time and maintain their representations even in occlusion (Carey, 2009). Behavioral studies have investigated the limits and the developmental trajectory of these cognitive abilities (Piazza, 2010). However, it is still unclear whether object tracking and object maintenance are subserved by the same underlying neural structures. The aim of this study was to investigate the neural basis of these mechanisms early in development. Tracking an object through space and sustaining its representation when is not visible anymore both require operations on so-called 'object-files'; and thus they may also share a common, or partly overlapping neural basis. We measured the neural correlates of object tracking and object maintenance in 6-month-olds with functional Near InfraRed Spectroscopy (fNIRS). The results suggest that despite the apparent similarities in the mechanisms they involve, the tracking process was associated with higher temporal, while object maintained was related to higher frontal lobe activation.

A-0425

DECOMPOSING INDIVIDUAL DIFFERENCES IN COGNITIVE CONTROL WITH DECISION MODELS

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Drift-diffusion models (DDMs) can help clarify individual differences in cognitive control by extracting psychological parameters to compare across individuals and/or groups. I will first demonstrate how standard DDMs, without specific assumptions about cognitive control, can enhance analyses from control tasks. Using a standard DDM and fMRI data from a stop-signal task, we find that individual differences in drift rate (from Go trials) strongly relate to activation of the neural systems involved in cognitive control on Stop trials. This suggests a robust relationship between decision processes and inhibitory control, and has implications for clinical populations that show reduced inhibitory control. Then I will focus on practical and theoretical concerns when employing modified DDMs to make inferences on data from other control tasks. Using flanker data from the Attentional Network Task, I will argue that when there are competing models that account for the data reasonably

well, we should prefer inferences that are common to both models. These concerns will be critical for developing a flexible framework in which both standard and modified DDMs are used to explore individual differences in cognitive control.

A-0426

GENDER CONGRUENCY EFFECT IN SECOND LANGUAGE RECOGNITION AND PRODUCTION: EVIDENCE FROM RUSSIAN-SPANISH BILINGUALS

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In this study we evaluated whether lexical access in bilingual's second language (Spanish-L2) was modulated by the grammatical gender of bilingual's first language (Russian-L1). Russian and Spanish are Slavic and Romance languages respectively, with very different gender systems in terms of gender values and gender agreement. In this study, the gender congruency between the two languages was manipulated. In Experiment 1 bilinguals performed a lexical decision task in L2 and in Experiment 2 bilinguals performed a L2 word translation task, both tasks were performed using bare noun or noun phrase (article+noun). Participants were faster in the gender congruent condition (e.g., *estrella/zvezda*–star– both feminine) relative to the incongruent (e.g., *naríz/nos*–nose– feminine in Spanish and masculine in Russian) and the incongruent-neutral condition (e.g., *oreja/yxo*–ear– feminine in Spanish and neutral in Russian). However, this effect was modulated by words concreteness: for concrete words the effect of gender was observed both for bare noun and noun phrase, while for abstract words the effect was observed only in noun phrase. The effect of gender congruency suggests that the bilingual's two gender systems interact. The modulation of this interaction by the concreteness is discussed in terms of current models of language.

A-0427

THE NATURE AND ALLOCATION OF VISUAL PROCESSING CAPACITY

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The allocation of visual processing capacity is a key topic in studies and theories of visual attention. The Load Theory of Selective Attention (Lavie 1995; Lavie et al., 2004) assumes that allocation of perceptual processing capacity happens in two steps: processing resources are first allocated to task-relevant stimuli and then any remaining capacity 'spills over' to task-irrelevant distractors. In contrast, the Theory of Visual Attention (TVA) proposed by Bundesen (1990) assumes that allocation happens in a single step where processing capacity is allocated to all stimuli, both

task-relevant and task-irrelevant, in proportion to their relative attentional weight. Here we will discuss both empirical evidence from partial report and forced choice experiments that favors TVA and how the Neural Theory of Visual Attention by Bundesen, Habekost, & Kyllingsbæk (2005) may explain processing capacity at the neural level.

A-0428

FLOW, MOOD, AND VISUAL CREATIVITY

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Study of the deeply focused, optimal state of consciousness termed 'flow' was reportedly inspired during observation of artists absorbed by their work. Although flow is often cited as correlating with improved mood and enhanced performance in other domains, this has not been formally determined in visual creativity. How creativity and mood are linked is still debated by researchers, but both may relate to experiencing flow and depend on how much cognitive support and feedback is available through mental imagery and perception. In this study, participants carried out the creative mental synthesis task, experimentally simulating the creative process. Participants carried out the task either mentally or with external perceptual support (sketching). Mood change was determined through pre- and post-task measures of affect, flow was measured via questionnaire, and synthesis drawings were rated by judges. Flow scores were significantly higher in the group allowed perceptual support, suggesting clear perceptual feedback is necessary for the development of creative flow. Flow correlated significantly with improved mood over the course of the task, supporting the theory of flow's positive relationship to mood. Neither flow nor mood, however, was related to any of the performance measures, casting some doubt on the flow/mood-performance relationship in visual creativity.

A-0429

"NEAR ACTION SPACE" IS EXTENDED BY THE PRESENCE OF ANOTHER INDIVIDUAL

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The extended space outside reaching distance, or extrapersonal space (ES), is populated by objects, as well as other people.

In three different experiments, we investigated the perception of egocentric (i.e. using a body-centered reference frame, RF) distance in ES, in both virtual (Exp1, Exp3) and real (Exp2) environments. Allocentric object-centered distance judgements served as a control.

Subjects were asked to judge the location ("Near" or "Far") of a target object by pressing one of two buttons. Stimuli were presented with progressively increasing or decreasing target-RF distance until the subject did not report a perceived change from Near to Far or vice-versa. In Exp3 subjects repeated the egocentric task as a function of the presence of different elements within ES: a static object, a virtual man or nothing. We found a Near/Far egocentric threshold of about 8 meters, which corresponds to the Near Action Space (NAS, Grusser 1983) thus probably encoded in motor terms. Additionally, we observed a significant extension of NAS in presence of another person, but not of a static object,

suggesting that "the Other" is implicitly processed as a like-me human being with movement resources, able to influence our own perception of the external space.

A-0430

TWO SYSTEMS FOR EMOTIONAL ACTION PROCESSING

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Recent evidence suggests an interaction between the processing of facial identity and facial expression. Would a similar interaction exist for whole-body actions? We investigated the role of identity in the coding of emotional bodily actions using a visual adaptation paradigm. Adaptation to happy and sad actions substantially biased the perception of the emotion of subsequent actions away from the adapting stimuli. That is, when judging the test stimuli participants chose the emotion opposite the adapted emotion significantly more than any other emotion. The magnitude of these aftereffects was dependent upon the similarity between the adapting and test stimuli: aftereffects were strongest when the identities of the actors in the adapting and test stimuli were the same. Both same identity and different identity aftereffects increased logarithmically with adaptation duration. However, the different identity aftereffect declined significantly over 10s, while the same identity aftereffect didn't. These results indicate the existence of two systems (mechanisms) for coding emotional actions. The identity independent system, which shows typical adaptation dynamics, and the identity dependent system, which does not follow typical adaptation dynamics and seems to involve a long term recalibration with exposure to emotional actions.

A-0432

DOES LANGUAGE IMMERSION AFFECT THE MAPPINGS OF WORDS TO CONCEPTS IN THE BILINGUAL LEXICON?

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In a previous study (Moldovan et al., 2012), we tested highly proficient and balanced Catalan/Spanish bilinguals on a translation recognition task in which they judged whether a word in Spanish was the correct translation of a word in Catalan. Critical items word pairs that were not translations but were related in form (lexical neighbors (e.g., mussol-muslo [owl-thigh]) and translation neighbors (e.g., mussol-buzo [owl-diver])) or in meaning (e.g., mussol-àguila [owl-eagle]). We found greater interference in translation recognition for semantically related pairs than for either of the word form conditions. A question of interest is whether these patterns reflect the high proficiency of the Catalan-Spanish bilinguals and/or the fact that they were immersed in their native language context. In the present study we tested Spanish-English bilinguals immersed in English in the US. One group of Spanish-English bilinguals had

maintained their Spanish dominance whereas the other group was more dominant in English than in Spanish. The two groups produced identical patterns of interference for translation form neighbors and for semantic neighbors but only the Spanish-dominant group produced interference for lexical form neighbors. We discuss the consequence of language context and proficiency for models of the bilingual lexicon.

A-0433

INDIVIDUAL DIFFERENCES IN INTUITIVE ABILITIES AND THEIR RELATIONSHIPS WITH COGNITIVE STYLES

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The aim of the present study was to investigate individual differences in intuitive abilities. Participants completed three cognitive tasks associated with intuition (Remote Associates Test, Artificial Grammar Learning and task inspired by Westcott's Test of Intuitive Ability) and two self-report measures (Myers-Briggs Type Indicator and Questionnaire of Cognitive Styles). We observed relatively stable low to moderate positive correlations between different measures of intuition, except AGL, suggesting two-factor structure of these abilities (associated with insight and implicit learning). As predicted, intuition was positively related to Mind Openness and Verbal Skills. People who scored higher in intuitive tasks, also described themselves as non-stereotypical and preferred to be distinguishable among others. This result could be associated with greater elasticity and openness of mental structures in highly intuitive individuals. Intuition was also positively related to Depth of Processing. This may suggest that understanding intuitive processing as fast and shallow may not always be true. We also found correlation between Tolerance of Uncertainty, number of used cues in WTIA task and the performance in AGL. Our study expands existing body of knowledge on basic mechanisms of intuition and supports the idea of measuring individual differences in intuitive abilities (not only preferences in cognitive processing).

A-0434

SEEING THE FACE IN THE CROWD: ROBUST SOCIAL ATTENTION ACROSS PERCEPTUAL LOAD.

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Although social attention is a robust phenomenon the nature of the implicated attentional mechanisms remains unknown. We investigated whether social orienting is affected by perceptual load, which is known to disrupt automatic attention. We paired a social cuing task with different levels of perceptual load and found that social attention was unaffected by these manipulations. Taken together with the data showing resilience of social attention to cognitive load, which is known to disrupt voluntary attention, our data indicate that attending to gaze direction engages a unique form of attention.

A-0435

NEUROCOGNITIVE MECHANISMS OF THE ACTIVE BUFFER OF WORKING MEMORY

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We present a computational model of the active buffer of working memory (WM). The model simulates neural oscillations underlying the abstract representations of elements stored in WM. The model is based on an assumption stating that most probably WM represents relations between elements instead of representing the sheer elements. Therefore, a crucial process that is modelled in our studies consists of the very coupling of oscillations associated with the elements stored, which reflects a relation that binds these elements. Our model recreates some well-known effects concerning WM functioning. For instance, it replicates the difference in accuracy between the task of recognition of an element in WM and the task of recognizing it within a particular context. It also predicts that the capacity for storing a certain number of elements is independent from the number of these elements' features. We are also able to relate the model's parameters and processes to neural mechanisms of the prefrontal and parietal cortices. Especially, the timing of oscillations used in our model can be related to gamma and theta cycles. The most important conclusion derived from the model says that individual WM capacity can be explained by the strength of inhibition between oscillating elements.

A-0436

PERCEPTUAL TONE GROUPING OF MONOLINGUAL AND BILINGUAL INFANTS: A WINDOW INTO EARLY SYNTAX ACQUISITION

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According to the iambic-trochaic law (Hayes, 1995), listeners group successive tones alternating in intensity into loud-soft (iambic) pairs, and tones alternating in duration into short-long (trochaic) pairs, reflecting general auditory mechanisms. However, recent findings demonstrated that grouping of tones alternating in duration is affected by native language experience (Iversen et al., 2008; Yoshida et al., 2010). Specifically, native language prosody at the phrasal level predicts perceptual tone grouping preferences (iambic vs. trochaic) both in adults and infants. Using a looking preference procedure, we tested 9-month-old Spanish-Basque monolingual and bilingual infants' ability of perceptually grouping tones varying in duration or intensity. As predicted, monolingual infants exhibited language-specific grouping patterns (Basque: iambic; Spanish: trochaic) suggesting that they became familiar with their native phrasal prosody. Because phrasal prosody is correlated with certain syntactic structures, it possibly bootstraps syntax acquisition (Nespor et al., 2008). Bilingual infants, however, showed no language-specific effects comparable to those of the monolinguals, as their perceptual grouping appeared to be governed by the iambic-trochaic law. Considering the link between syntax bootstrapping and perceptual tone grouping, our overall results suggest that early bilingual acquisition of higher-

level, language-related rules benefits from different (and/or additional) cues as compared to early monolingual acquisition.

A-0438

A POSITIVE SIDE OF NEGATIVE PRIMING IN FREE RECALL

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Negative priming, a phenomenon of importance in attention research, has recently been documented in the memory domain (Marsh, Beaman, Hughes, & Jones, 2012). On a prime trial encoding is accompanied by to-be-ignored auditory distracters semantically related to memoranda. When, on a subsequent probe trial, items used as related distracters on a prime trial are given for study, memory suffers compared to a baseline of novel items from a different category. This phenomenon was ascribed to the after-effects of inhibition, recruited on prime trials to minimise interference from related distracters. In the current study, we present experiments to further test this explanation. The effect was eliminated when a different baseline, of items semantically related to a category presented at prime, was used. We also show that the effect is larger when auditory distracters are altogether eliminated from the standard procedure, suggesting that related distracters at prime reduce the negative effects of proactive interference seen at probe. Together, the results support a proactive interference account over the inhibitory account.

A-0439

EFFECTS OF AGING AND NUMERICAL REPRESENTATION ON SPATIAL-NUMERICAL ASSOCIATIONS DURING NEURAL OVERLAP TASKS.

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Research in numerical cognition has shown that older adults rely on exact counting strategies more than young adults during numerosity quantification tasks (Gandini, 2008); however, there is currently no evidence suggesting an impact of aging on spatial-numerical association of response code (SNARC) tasks. Wood et al. (2008) hypothesised that the strength of the SNARC effect should increase with age, as a result of practice and reduced inhibitory capacity. Evaluating this prediction, groups of young (18-30 years) and older (55-75 years) adults were assessed on tasks in which numerical magnitude (numbers 1-9, excluding 5) was irrelevant to the task (parity decision and orientation decision to shapes). Task-irrelevant number information was presented in the form of digits (parity decision), a spoken number (orientation decision to an unrelated shape) or the number of shapes on the screen (orientation decision). There was no significant effect of age group in the strength of the SNARC effect for parity decisions; however the SNARC effect was significantly reduced for older adults when they performed orientation

decisions to arrays of 1-9 shapes. We discuss the results in relation to the extent of triggering caused by different forms of magnitude information (Tzelgov & Ganor-Stern 2005).

A-0440

DISTINCTIVENESS AND ACTION: WHAT CONSEQUENCES ON RECOGNITION JUDGMENT?

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Distinctiveness (Hunt & Worthen, 2006) and enactment (Zimmer et al., 2001) are best-known effects to account of memory effectiveness. We created an innovative paradigm, derived from the isolation paradigm, to demonstrate an isolation effect underpinned only by the characteristics of action performed. In a learning phase, participants had to memorize a list of words while performing an action (turn a door-knob to the right; turn a door knob to the left). In accordance with the isolation paradigm, one action was more frequent (i.e., non-isolated) than the other (i.e., isolated). Then, in a recognition phase, participants had to judge whether the word was presented or not during the learning phase. In Experiment 1, to respond "old", half of the participants performed the same action that they performed most frequently during the encoding (i.e., associated to non-isolated items) whereas the other half performed the other action (i.e., associated to isolated items). In Experiment 2, participants responded by pressing a key on the keyboard. The main result of these experiments reveals a contextual isolation effect but no effect of action compatibility. This study provides evidence of the crucial role of the retrieval situation when action is used as a factor of isolation.

A-0441

BILINGUAL WORD RECOGNITION IS INFLUENCED BY SUBLEXICAL STRUCTURE – EVIDENCE FOR EARLY AVAILABILITY OF LANGUAGE MEMBERSHIP INFORMATION

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Successful recognition of words from different languages is the basis of bilingual communication. However, it is still a matter of debate when language membership information becomes available and whether it directs word recognition. The earliest information that is available during visual word recognition is sublexical structure. We investigated how sublexical structure influences perception and language attribution of ambiguous linguistic input in the absence of language-specific context. Pseudo-words were created that varied in their similarity to German and English. Language similarity

was manipulated orthogonally through three variables: orthographic markers, orthographic neighborhood, and bigram frequency. German-English bilinguals attributed pseudo-words to English or German explicitly in a language attribution task and implicitly in a naming task. In both tasks each of the three variables directionally affected language attribution, e.g. pseudo-words with higher bigram frequency in German than in English were mostly attributed to German. Additionally, RTs were fastest for L1 (German)-like pseudo-words. We suggest that high sublexical frequency facilitates perception independently of task demands and that sublexical structure affects the language attribution of single words. Our results show how language differences are processed at the sublexical level and challenge common models of bilingual word recognition, where language membership is a strictly lexical property.

A-0442

THE OPPOSITE EFFECT OF TIME-OF-DAY ON PAST AND FUTURE EVENTS

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Recently, it was suggested that elevated cortisol level in the morning has an opposite effect on retrospective and prospective memory functions (Fries et al., 2009). However, this proposal is mainly based on experimental findings showing that cortisol has a negative effect on the retrieval of remote episodic memories (e.g. Buss et al., 2004), whereas the relationship between high level cortisol and prospective memory functioning is somewhat vague. In two experiments, we provided evidences for the opposite effect of Time-of-Day on remote autobiographical memories and imagined future events. Participants generated past or future episodes in response to emotionally neutral cue words in the morning or evening, and they rated the phenomenal qualities of the events on 7-point scales. Although participants remembered better for the contextual details (time and location) of their autobiographical memories in the evening than in the morning, this effect was reversed when people imagined possible future episodes. This result is more interesting in the light of the findings of earlier studies showing that real memories were more vivid than imagined events (e.g. Johnson et al., 1988). According to our results, the time of generation (morning/evening) has an important influence on the phenomenal characteristics of internal- and external-source events.

A-0443

DIFFERENT TOP-DOWN FACTORS TUNE DIFFERENT BRAIN NETWORKS DURING EARLY STAGES OF OBJECT RECOGNITION.

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Recent proposals suggest the importance of the interaction of top-down processes with bottom-up processes for successful object recognition. However, controversy still

surrounds the top-down factors, which reflect knowledge-driven mechanisms, that might influence the early processing of object recognition in posterior brain areas. In this fMRI study we investigated whether brain areas responsible for early object recognition could be affected by: 1) Task-related contexts that tax the executive control system differently (when the previous task interferes to a high or low extent with the current task); 2) Task-related decisions that tax the semantic system differently (when the task imposes high semantic integration demands (naming task) vs. low semantic integration demands (perceptual/semantic classification task)). Our results showed an increased activity in the R Middle Temporal gyrus for high conflict conditions as compared with low conflict ones, irrespective of the type of task. Conversely, the L Middle Temporal gyrus and L Middle Occipital gyrus were modulated by semantic integration demands only. In conclusion, object recognition in posterior brain areas is driven not only by processing the object's visual features, but is also modulated specifically by the decisions that will be applied to these objects and the contexts in which they will be presented.

A-0444

ON THE NATURE OF THE „ATTENUATION OF INFORMATION“ PHENOMENON: THE CONTRIBUTION OF BILINGUALISM

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The Attenuation of Information phenomenon shows that when words are predictable (like when they have been previously mentioned), there is a decrease in their Duration, Intensity and Pitch-related values. However, little is known about its nature. Do speakers attenuate information by repetition because it is the second time that the word is uttered; or that the concept is evoked? If Attenuation answers to conceptual forces, it would be irrelevant if the same referent is repeated with a different word; but if it answers to articulation, uttering different words for the same referent would be crucial. We use bilingualism (where a referent can be named in two ways) to compare attenuation where both mentions of a referent were uttered in the same language with cases in which there was a language switch between mentions. Dyads completed referential maps in which words were uttered twice in Catalan or in Spanish, either repeating or switching the language between mentions. Results showed that words were attenuated for Duration, Intensity and Pitch-related variables to the same extent when both mentions were uttered in the same or in a different language. Overall, this results supports that Attenuation of Information is a phenomenon of a conceptual nature.

A-0445

RESOURCE SHARING EFFECTS IN A MULTIPLE COMPONENT MEMORY SYSTEM

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Many contemporary investigations into working memory have focused on trade-offs between processing and storage whilst assuming a shared attentional resource for concurrent tasks (e.g. Barrouillet, Bernardin, & Camos, 2004; Barrouillet & Camos, 2001, 2007, 2010). Whilst the findings of these studies appear to be incompatible with well-established models of cognition such as The Multiple Component Model (Baddeley, 2000, 2012; Baddeley & Hitch, 1974; Logie, 2011), Logie (2011) argues that shared-resource effects may be observed in a multiple-component memory system once the capacities of individual components are exceeded. Here we report experiments in which participants are able to dual-task within the same modality with no interference between memory and processing items provided that both tasks are set below or equal to single-task span. Drops in memory performance are only observed once both tasks are set above participants' span, whilst processing performance remains independent of the memory task across all conditions. We propose two possible explanations for this pattern of performance: 1) memory performance is maintained in low processing load conditions due to the availability of 'spare' intramodal resources, or 2) memory performance drops in high processing load conditions due to an increased intramodal interference effect.

A-0446

NUMERICAL MATCHING JUDGMENTS IN CHILDREN WITH MATHEMATICAL LEARNING DISABILITIES

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Both deficits in the innate magnitude representation (i.e. representation deficit hypothesis) and deficits in accessing the magnitude representation from symbols (i.e. access deficit hypotheses) have been proposed to explain mathematical learning disabilities (MLD). Evidence for these hypotheses has mainly been accumulated through the use of numerical comparison tasks. It has been argued that the comparison distance effect might reflect decision processes on activated magnitude representations rather than number processing per se. One way to avoid such decisional processes confounding the numerical distance effect is by using a numerical matching task, in which children have to indicate whether two dot-arrays or a dot-array and a digit are numerically the same or different. Against this background, we used a numerical matching task to examine the representation deficit and access deficit hypotheses in a group of children with MLD and controls matched on age, gender and IQ. The results revealed that children with MLD were slower than controls on the mixed notation trials, whereas no difference was found for the non-symbolic trials. This might be in line with the access deficit hypothesis, showing that children with MLD have difficulties in linking a symbol with its quantity representation.

A-0447

SENTENCE BISECTION IN UNILATERAL SPATIAL NEGLECT

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In line bisection right-brain-damaged patients with left unilateral spatial neglect (USN) typically exhibit a rightward deviation with respect to the objective mid-point, while unimpaired participants may show a slight leftward bias ('pseudoneglect'). Linguistic information contained in the final (right) part of the word modulates bisection performance (Veronelli et al., Exp. Brain Res., in press). Here we investigated whether and how linguistic features modulate sentence bisection. In Experiment 1, eight right-brain-damaged patients with left USN (N+), eight right-brain-damaged patients without USN (N-), and eight neurologically unimpaired participants manually set the mid-point of sentences differing in their syntactic structure, of letter strings, and lines matched for length. In Experiment 2, six N+ patients and six unimpaired participants bisected affirmative and interrogative clauses, sentences with lexical and syntactic violations, as well as letter strings and lines matched for length. N+ patients committed an overall rightward error, as compared with control participants. The rightward deviation was modulated by stimulus type: greater with lines, intermediate with letter strings, and minor with all types of sentences. Results suggest a modulation of bisection performance of N+ patients by linguistic factors, both at the letter and at the sentence level, which may reduce the rightward bisection bias.

A-0448

TRACKING ATTENTIONAL CONTROL DEFICITS IN TRAIT ANXIETY: INCREASED STIMULUS-BASED OR RESPONSE-BASED INTERFERENCE?

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Trait anxiety is associated with impaired top-down attentional control, evidenced by poor inhibition of task-irrelevant distractions. However, distractions may cause conflict at multiple stages within the information processing stream, and resolved by different subsystems depending on conflict type. Here, we contrasted two forms of conflict distinguished in current literature: stimulus-stimulus (SS) competition, versus stimulus-response (SR) competition. Participants completed a Stroop-like task including incongruent distractor colour words promoting the same response but a different identity to target (SS interference), or both a different response and identity (SR interference). Replicating previous studies, anxiety increased overall task-irrelevant distraction measured by incongruent versus congruent reaction times. Importantly, this increase was solely driven by SR conflict, with no evidence of group differences for SS. Results clarify that trait anxiety modulates attentional control primarily through impairing suppression of task-irrelevant responses,

and does not appear to affect stimulus competition in general. Additionally, results highlight the usefulness of distinguishing types of conflict resolution, particularly in individual difference approaches where 'inhibition' is seen to be impaired in a wide variety of clinical and non-clinical groups that could stem from one of many possible types of deficits in inhibitory control.

A-0449

PUTTING RHYME IN CONTEXT: VISUAL AND SEMANTIC COMPETITION ELIMINATES PHONOLOGICAL RHYME EFFECTS IN LANGUAGE-MEDIATED EYE GAZE

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Studies of language mediated visual attention show that participants fixate objects whose names share the rhyme of spoken target words (beaker-speaker) more than phonologically unrelated distractors. Although such effects have often been only small and marginally significant they have provided an important means of teasing apart competing models of spoken word recognition. In addition to phonological information activated by visual and auditory stimuli the cognitive system also has access to information activated in other modalities (e.g. semantic and visual) that in the natural learning environment may offer a reliable source of information regarding an intended target. We present two eye-tracking studies in which participants viewed scenes containing a rhyme competitor in addition to either three unrelated distractors (Experiment 1) or a visual competitor, a semantic competitor and an unrelated distractor (Experiment 2). Rhyme overlap influenced eye gaze only in Experiment 1 but not in Experiment 2 which suggests that visual and semantic competition may eliminate influences of later overlapping phonemes on spoken word processing. We conclude that that during spoken word comprehension multimodal information is recruited rapidly to constrain lexical processing to the extent that later overlapping phonemes may often exert little influence on this process.

A-0450

BOTH PHONOLOGICAL GRAIN-SIZE AND GENERAL PROCESSING SPEED DETERMINE LITERACY RELATED DIFFERENCES IN LANGUAGE MEDIATED EYE GAZE: EVIDENCE FROM A CONNECTIONIST MODEL

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Language mediated visual attention varies across individuals and is partly determined by their level of formal literacy training. Recent empirical evidence showed that unlike high-literate individuals, whose eye gaze was closely time locked to phonological overlap between a spoken target word and items presented in a visual display, low-literate individuals gaze was not tightly locked to phonological overlap but instead strongly influenced by semantic relationships between items. Our present study tests two

explanations for these effects of literacy on language mediated overt attention: 1) that observed behaviour is an emergent property of an increased ability to extract fine grained structure from the speech signal, as in the case of high-literates, with low-literates reliant on more coarse grained structure, and 2) that low-literate performance is a result of a reduction in general processing speed. Both hypotheses were tested using an emergent connectionist model, based on the Hub-and-spoke models of semantic processing (Dilkina et al, 2008), that integrates linguistic information extracted from the speech signal with visual and semantic information within a central resource. We demonstrate that only a model that implements both a coarse grain size and reduced general processing speed is able to replicate the behaviour displayed by low literates.

A-0451

WHEN TRIANGLES BECOME HUMAN: ACTION CO-REPRESENTATION FOR OBJECTS.

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Until recently, it was assumed that co-representation of others' actions, an essential part in joint action, is biologically tuned. However, recent research demonstrated that we also simulate actions of non-biological interaction partners under certain conditions. In three studies, we explored whether the non-biological interaction partner needs to possess human features for action co-representation to occur. In a first baseline experiment, we demonstrated that participants who performed a social Simon task with an animated human hand and an animated object (i.e., a ball) only co-represented actions of the biological interaction partner. In the second study, it was found that participants did not co-represent actions of an object after they were merely presented with a picture of the same object before performing the social Simon task, but they did co-represent actions of this object after they watched either two kinds of fragments in which displayed the object moving in a self-propelled way. Thereby, it was not important whether the movements of the objects were seen as intentional or not. In our third study, we demonstrated that both perspective taking and perceived intentionality has an influence on action co-representation of non-biological actions. Possible explanations for these findings are discussed.

A-0452

MIND-WANDERING IN VISUAL SEARCH
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Mind-wandering is a neglected factor in visual search. Models and theories of visual search focus on the role of display-directed attention alone (Bundesen, Habekost, Kyllingsbaek, 2005). However, on the basis of mind-wandering and task-unrelated thoughts (Schooler &

Smallwood, 2006), it seems reasonable to assume that attention is not always directed to the visual field. Here, we investigated the influence of mind-wandering or off-task thoughts on response time, error rate during visual feature versus conjunction search. Immediately after each 4 to 6 trials, participants reported their state of attention on a 9-point Likert scale, from "I was focused on the task" to "I thought about something else". Although participants had this secondary task of reporting their attentive state, we were able to reproduce the well-known effects of task [F(1,21)=56.525, $p < .001$] and set size [F(1,21) = 18.449, $p < .001$] on RT, as well as a significant Task x Set Size interaction [F(1,21)=43.609, $p < .001$]. In addition, our data show only a main effect of the self-reported attentional state [on-task vs. off-task; F(1,16)=10.537, $p < .05$] on ER without any interactions. These results indicate a strong link between mind-wandering and performance errors in visual search.

A-0453

ASSESSING FACE PROCESSING ABILITIES: THE STRUCTURED QUESTIONNAIRE FOR PROSOPAGNOSIA (SQ-PA) AND THE BAMBERG VISUAL IMAGERY QUESTIONNAIRE (BVIQ)

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Face processing skills are very different across people with prosopagnosia being the most extreme lack of "face expertise". We developed two theory-driven (Grüter et al., 2008) questionnaires, the Structured Questionnaire for Prosopagnosia (sQ-PA), and the Bamberg Visual Imagery Questionnaire (BVIQ), to present an economical, rapid and effective screening tool for malfunctioning face processing, e.g., prosopagnosia, providing hints for further and deeper diagnostics. sQ-PA as well as BVIQ showed high internal consistencies (alphas $> .9$). Further, persons who assessed themselves having problems in recognizing faces showed significantly higher sQ-PA-scores. The sQ-PA-score also clearly correlated with the additionally conducted Cambridge Face Memory Test (CFMT, Duchaine, 2006), $r = -.38$, $p = .005$. Although the BVIQ-face-score correlated significantly with the sQ-PA-score, $r = .39$, $p = .004$, we found no correlation with the CFMT, $p = .396$. In sum, CFMT seems to be able to test face processing abilities within a normal range, but as prosopagnosics show typically extremely low mental imagery scores (Grüter et al., 2009), our findings suggest that prosopagnosia cannot be sufficiently and safely diagnosed only by using face recognition tests like the CFMT and that proper diagnostics should be based on a combination of various methods.

A-0454

DISSOCIATING WORKING MEMORY CONTRIBUTIONS TO VISUOSPATIAL BOOTSTRAPPING

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'Visuospatial bootstrapping' (VSB) is a phenomenon where serial recall of visually presented digits is better if participants are given the opportunity to encode extra visuospatial

information by presenting digits within a familiar keypad array. Previous research suggests that VSB is the result of integration of information from different modality-specific short term memory systems and information in long term memory, and can be understood in the context of recent models of working memory (WM) that include an Episodic Buffer. Given that VSB appears to facilitate WM performance, it is important to examine how sub-components of WM might contribute to this phenomenon. This was tested in two experiments in which digit sequences were visually presented (either in single locations or within numerical 'keypad' arrays) under conditions of spatial (Experiment 1) or verbal (Experiment 2) WM load. Experiment 1 revealed that a concurrent spatial tapping task abolished VSB through a larger detrimental effect on keypad relative to single digit conditions. In contrast, in Experiment 2 verbal load (articulatory suppression) had a smaller impact on performance in the keypad than the single digit condition. These results can be taken as support for multicomponent models of WM.

A-0455

BEING IMITATED AND PAIN OBSERVATION IN ADULTS WITH HIGH FUNCTIONING AUTISM

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Imitation and empathy skills are thought to be impaired in adults with high functioning autism (HFA), and have theoretically been linked to dysfunctional shared representational mechanisms ('broken mirror' theory). However, research on this theory shows conflicting results. In a previous study, we have related imitation literature and research on observing others in pain in typically developing adults (TDA). It was shown that being imitated enhances affective responding to seeing someone else in pain, and we provided evidence for the role of shared representations as a core underlying mechanism. Behavioural and physiological results in this new study showed that overall affective responses while watching pain movies were the same, if not higher, in adults with HFA compared to TDA. Furthermore, TDA showed higher affective responding after being imitated during the whole experiment, replicating previous studies. Adults with HFA, however, showed a reversal of the effect over time: while affective responding was lower after being imitated during the first half of the experiment, affective responding in the second half of the experiment was higher after being imitated. These results do not provide evidence for the 'broken mirror' hypothesis, but suggest dysfunctional control over these shared representational systems in adults with HFA.

A-0457

CONTEXTUAL AND VERBAL INFLUENCES ON NUMBER REPRESENTATION

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Research has shown that numerical meaning is rapidly and automatically accessed, even without awareness. These findings suggest that cardinality is a "default" property of digits. However, digits can be used as labels too, without any quantitative implication (e.g., social security numbers). Thus, it is reasonable to doubt the quantitative meaning of

the “nominal digits”. The current study examines whether nominal context disrupts automatic activation of cardinal meaning of digits. Two types of contextual primes (six-digit prices and postal codes) were presented before participants made smaller/larger judgments for digit pairs. Half of the primes in both contexts were read aloud, while the other half were read silently. Numerical distance effect was taken as a cognitive measure for the possible contextual and/or verbalization effects. If nominal primes were devoid of quantitative numerical meaning, it would be reflected in their incongruence with the smaller/larger judgments. Results show that the primes’ context did not affect performance on the judgment task and the distance effect was significantly weaker when primes were read aloud. The findings are interpreted in terms of automatic magnitude activation for both contexts and enhanced extraction of numerical meaning with the language serving as a digitalization mediator.

A-0458

HOW IS DIALECTAL VARIATION TREATED BY BILINGUALS WITH DIFFERENT NATIVE DIALECTS?

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The aim of this study was to measure how bilinguals with different native dialects perceive and represent forms in native and non-native dialects. Our results show that a bilingual’s native dialect determines the ability to discriminate a contrast at a low phonetic representational level, but does not affect lexical access of dialectal variants. We tested Basque-Spanish bilinguals who were native speakers either of the Biscayan or the Standard dialect of Basque (Biscayan dialect neutralizes the voiceless alveolar sibilant contrast of Standard Basque: laminal “z” > apical “s”). In an AXB discrimination task using nonword stimuli there was a robust group effect: Biscayan speakers were less accurate and slower than standard speakers distinguishing the phonetic contrast that does not exist in their dialect. In contrast, the native dialect did not have any effect at the lexical level: Both groups accepted “s”-mispronounced Basque words at nearly the same rate in an auditory lexical decision task. Similarly, Biscayan variants produced the same priming effect as standard words for both groups in an auditory semantic priming experiment. These results suggest that bilinguals’ perceptual systems are flexible enough to overcome dialectal variation during lexical access, despite perceptual differences at lower levels.

A-0459

THE ROLE OF EXECUTIVE FUNCTION AND ATTACHMENT STYLES ON AUTOBIOGRAPHICAL MEMORIES OF RELATIONSHIPS

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The influence of executive function in memory retrieval has been demonstrated extensively, however, the evidence about the role of ‘self’ is limited. In the present study, attachment styles are examined in relation to executive function and

memory characteristics. It is hypothesized attachment anxiety and attachment avoidance are associated with particular regulatory strategies in relationship related contexts, that these strategies further influence executive processes and changes in memory experience. In order to test this, subjects completed self-report measures of adult attachment (ECR-II) and metacognitive skills (MCQ-30), then reported two negative and two positive relationship-specific autobiographical memories. Last, measures of executive function, AOSPAN task and emotional Stroop task (ES) were used. The results indicated that individuals with high attachment anxiety reported more reliving for negative but not positive memories. Higher avoidance was associated with less reliving and more know than remember judgments. For individuals with high attachment anxiety, attachment avoidance was associated with higher involuntary remembering and more sharing of positive memories. Attachment anxiety was correlated negatively with AOSPAN but not with any ES variables whereas attachment avoidance was associated with ES variables. Overall, findings are discussed with respect to attachment behavior and self-regulatory functions of autobiographical memory.

A-0460

BUTCHER BEARS SHOP: NEURAL BASIS OF IMPLICIT ASSOCIATION BETWEEN FACES AND SCENES.

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Many people experience difficulty in recognizing a familiar face in a changed context, a phenomenon known as the “butcher-on-the-bus” effect. In a working memory task to memorize faces, this phenomenon occurs only when the backgrounds are meaningful scene images but not when they are meaningless images. This is presumably because meaningful scenes are implicitly associated with faces. In order to confirm the association between scenes and target faces in working memory, we conducted a functional magnetic resonance imaging experiment and identified regions in inferior temporal cortex that exhibited face-specific (fusiform face area [FFA]) and scene-specific responses (parahippocampal place area [PPA]). Region-of-interest analyses showed greater activity of PPA for memorized faces though PPA is not primarily face-specific. This indicates non-target scenes are implicitly associated with target faces and PPA exhibit greater responses to the faces associated with the scenes. In addition, when the background information is invalid as a cue to recognize the target face, right middle/medial frontal areas are activated. These areas conceivably modulate the effect of non-target scene information implicitly associated with target. In contrast, meaningless backgrounds did not show such effects. These observations indicate that the face memory is associated with the meaning, not perceptual information, of the backgrounds.

A-0461

CAN BILINGUALS GUESS WHAT'S COMING? WORD ANTICIPATION IN L2 SENTENCE READING.

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Event-related brain potential (ERP) studies show a reduction of the N400 for words that are expected from the context compared to unexpected words (DeLong et al., 2005; Wicha et al., 2004). Importantly, anticipation effects were also observed on the article preceding the (un-)expected word. The present study investigates whether bilingual readers also anticipate words when reading in their second language and whether factors such as language similarity and age of acquisition affect anticipation processes. We manipulated highly constrained sentences so that the critical noun was either expected or not. Crucially, the article preceding the noun either matched the phonology (in English) or the gender (in Spanish) of the noun. We tested two control groups of monolinguals (English and Spanish), two groups of late bilinguals (Spanish-English and French-Spanish) and one group of early bilinguals (Spanish-Catalan). All groups showed a modulation of the N400 on the noun. Monolinguals and early bilinguals showed an N400 amplitude increase for unexpected articles. French-Spanish late bilinguals also showed an increase, however, shorter, but Spanish-English late bilinguals did not. Our results suggest that bilinguals are able to anticipate upcoming words in a similar manner as monolinguals, but that age of acquisition and language similarity affect anticipation processes.

A-0462

FREQUENCY AND REGULARITY EFFECTS DO NOT INTERACT IN VERB PRODUCTION: A CHALLENGE TO DUAL MECHANISM ACCOUNTS OF INFLECTIONAL PROCESSING

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Verbs with regularly and verbs with irregularly inflected past tense forms appeared to native speakers as drawings or as stems. Different participants generated either the -ed or -ing from each. Results of LME analyses with controls for morphological family size, frequency and phonological neighborhood density revealed a significantly greater effect of frequency for -ing than for -ed forms and a significantly greater effect of frequency for regular than for irregular forms. Participants varied in their sensitivity to differences between regular and irregular verbs. Nonetheless overall, interactions with frequency failed to support crucial predictions about larger frequency effects and thus greater storage of irregular forms that characterize the dual mechanism account of inflectional processing. In addition, latencies for regulars did not differ in the generation from stem and from drawing tasks whereas irregulars were slower in the generation from stem than in the generation from picture task. Results indicate competition between regularized and irregular past tense forms when generated from a stem but not when

generated from a picture. The implication of picture-stem differences for irregulars is that the role of the stem in the production of inflected forms is not mandatory.

A-0463

MIND-ORIENTED MOVEMENTS

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As with many other core human abilities, intentional communication appears a fairly straightforward phenomenon, at least until we interact with other humans having communication deficits, or until we try to build artificial cognitive agents that can effectively deal with the pervasive ambiguity of human communicative signals. It has often been assumed that these communicative abilities ultimately rely on coding-decoding of symbols whose meaning is already shared across communicators, neglecting that using those symbols requires a computational mechanism powerful enough to mutually negotiate them. In this talk I will elaborate on the neural mechanisms supporting the human ability to rapidly generate and understand novel shared symbols. I will discuss empirical evidence suggesting that the selection of communicative actions is independent from the operations of the language and motor systems, dependent on dynamically updating social constructs like common ground, and supported by a predictive mechanism shared across communicators and addressees.

A-0464

THE INFLUENCE OF REACTIVE AND PROACTIVE CONTROL ON THE CONGRUENCY SEQUENCE EFFECT

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The finding of a reduced congruency effect following conflict trials has been termed the congruency sequence effect. In a series of four experiments, we set out to determine the relative contribution of expectancy-based, proactive control and conflict-induced, reactive control to this effect. Expectancies were implicitly induced by means of a proportion manipulation, leading participants to expect either Stroop congruency level repetitions/alternations (Experiment 1A) or Stroop stimuli appearing at longer response-stimulus-intervals (Experiment 1B). Whereas the former manipulation failed to elicit strong effects of expectancy, the second manipulation evoked reliable congruency sequence effects at longer intervals. Next, we explicitly probed participants' expectancies in Experiment 2, by asking them to predict the congruency level before responding to the Stroop stimulus. Results revealed that the congruency sequence effect was only found when participants expected a repetition of the congruency level. This pattern was reflected in the N450 ERP component, which was reduced following alternation predictions. The conflict slow potential was only sensitive to conflict on the previous trial. The series of studies, when taken together, suggest that the effect of expectancy-induced control is limited (Experiment 1A), and generally is restricted to prolonging (Experiment 1B) or counteracting (Experiment 2) reactive, conflict-induced control adjustments.

A-0465

AN ERP STUDY ON CHINESE-ENGLISH CODE SWITCHING

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Code-switching (CS) refers to the phenomenon that two or more languages are used mixedly in the same phrases or sentences. The majority of CS literature was mainly on Indo-European bilinguals. Groejean (1998, 2001) proposed a continuum model with monolingual mode at one end and bilingual mode at the other to account for CS. However, this model may not account for CS of Chinese-English bilinguals (Shih & Tzeng, 2006). The purpose of current study was to examine both comprehension and production processing in Chinese-English CS with ERPs (Event-related potentials) data. Thirty college students in Taiwan were the participants who had at least seven years of formal English education. Two experiments were conducted. In study one participants were to read four Chinese-English mixed articles (550 words each) and to complete a recognition test. In study two participants were to read another four Chinese-English mixed article. Participants were then to reproduce the content of the articles by choosing appropriate words on the screen. Significant larger N400 was found in study two. We therefore concluded Chinese-English bilinguals in Taiwan tend to switch toward bilingual mode in comprehension task, yet toward monolingual mode in production task. Language distance and continuum model were further discussed.

A-0466

DECISION MAKING: REDUCED BIASES IN FOREIGN LANGUAGE

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Keysar et al. (2012) recently suggested that decision-making biases are reduced by the use of a foreign language (FL). They proposed that dealing with a problem in an FL provokes a greater cognitive and emotion distance than in a native language (NL). Given that many decisions are made daily in an FL in our multilingual world, these observations could generate essential implications. We conducted a study aiming at replicating and generalising these observations. We presented participants of different languages with various problems either in their NL or in an FL. We first tried to replicate the FL effect on decision making in framing problems (gain vs. loss), then we extended our investigation to other type of framing problems involving accounting biases as well as to problems containing probability calculation. The overall results reveal that the foreign language effect is more pervasive than previously thought, affecting a wide range of decision making contexts that do not necessarily involve an emotional component. Our findings suggest that the foreign language effect cannot be due exclusively to a reduction in the emotional response, but that other factors such as cognitive fluency and psychological distance might also be involved.

A-0467

REINTEGRATION COST IN WORKING MEMORY BINDING UPDATING

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Learning can be shared into the ability to deal with information recently learned (i.e., from short-term memory) or well-learned (i.e., from long-term memory, LTM). A critical issue is whether these two types of information may differently affect performance in working memory (WM) updating which is likely to be the main process through which WM operates. Our aim was to investigate how bindings recent or well-learned between different materials, i.e. digits or consonants, affected updating since a reintegration process could be called to explain different effects. Data showed a cost for well-learned bindings to be updated in WM. In particular the cost was modulated by the material specific mental representation. In fact, we found that well-learned bindings between digits (e.g. 12) were more difficult to update relative to recent-learned (e.g. 17; Exp. 1); on the contrary well-learned bindings between consonants (e.g. ST) were more difficult to update relative to recent learned (e.g. SL) when based on frequency of use in the Italian language (Exp. 3) but not when based on their alphabetical mental representation (Exp. 2). The role of binding and the reintegration process in accounting for the relation between WM and LTM are discussed.

A-0468

DIFFERENT ORIGIN OF THE NEGATIVE CONGRUENCY EFFECT DEPENDING ON THE TYPE OF MASK

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Previous studies on masked priming suggest that when the interval between prime and mask is long, participants respond slower to congruent than to incongruent primes. This is known as the negative congruency effect (NCE). Although the NCE has been extensively investigated, it remains unclear whether it stems from prime-mask interaction or from automatic motor inhibition. Some authors have proposed that the NCE depends on the relevance of mask characteristics. When the mask contains prime shape fragments, the NCE arises from prime-mask interaction; however, when the mask is irrelevant, the NCE stems from motor inhibition. Here, we investigate the origin of the NCE by dissociating perceptual from motor processing, using relevant (metacontrast) and irrelevant masks (random lines). For the relevant masks, we found that prime discrimination correlates with priming, and that the NCE depends on both perceptual and motor processing. This fits closely with the prime-mask interaction hypothesis. In contrast, when the mask is irrelevant, we found that priming fails to correlate with discrimination and that the NCE depends exclusively on motor processing, in line with the unconscious motor inhibition account. The present study thus demonstrates that the NCE can occur irrespective of the type of mask, but through different mechanisms.

A-0469

DOES DISBELIEF IN FREE WILL PROMOTE RISK-TAKING DECISIONS ? A STUDY COMBINING BELIEF INDUCTION AND IOWA GAMBLING TASK

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Previous studies indicated that people might behave less responsibly when having been exposed to deterministic primes as compared to free will primes or neutral primes (reading text or sentence primes). Thus, deterministic primes should lead to more risky decisions in the Iowa Gambling Task (IGT, Bechara & Damasio, 2004). Contrary to this prediction, 46 participants (33 women) did not choose more frequently from the risky desk after the deterministic prime, but learned best to avoid the risky cards over time. These findings indicate that a deterministic "mind-set" might promote intuitive decision making in the IGT, consequently leading to better results in this condition. In ongoing studies, we further elaborate on this finding by investigating intuitive versus rational decision making after a deterministic versus free will prime, with primes being once processed overtly and once covertly.

A-0470

THE BIVALENT AFFECTIVE NATURE OF CONFLICT AND ITS ROLE IN DECISION-MAKING

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Conflict has been hypothesised to be aversive and therefore avoided when possible (Botvinick, 2007). In a series of behavioural experiments we confirmed earlier findings that conflict is indeed associated with negative affect (cf. Dreisbach & Fischer, 2012). Importantly, using an affective priming paradigm we additionally found that conflict resolution (i.e., correctly responding to a conflict-inducing stimulus) results in positive affect. In a subsequent fMRI study we furthermore showed that activation and connectivity in the ventral striatum, but not in the dorsal ACC, predicts participants' decision for choosing a high-conflict or low-conflict option, which is driven presumably by a balance between the negative cost associated with conflict and the positive feeling after conflict resolution.

A-0471

EFFECTS OF ACTION VIDEO GAMING ON PERCEPTUAL THRESHOLD, PROCESSING SPEED, AND CAPACITY PARAMETERS OF VISUAL ATTENTION

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Previous research showed that playing action video games can improve cognitive functions, for instance, temporal resolution of vision and attentional resources. To date, however, it has not been possible to determine which specific aspects of perceptual and attentional processing

are enhanced by playing action games. The present study investigated the effects of action video gaming on the performance in a visual-short term memory task that required whole and partial report of visual information based on TVA (Bundesen, 1990). This allowed us to separate the effects of action gaming on visual perceptual threshold, perceptual processing speed, top-down control, and visual short-term memory capacity. Results: A comparison of expert gamers (>6h play per week, >1 year) with non-gamers showed specifically an improved perceptual processing speed and threshold in gamers. A subsequent training study, however, showed no significant advantages in subjects training action games (15 hours) compared to controls and Tetris players. These findings specify perceptual processing speed and perceptual threshold as underlying the improved attention performance of action video gamers. In addition, the findings suggest that modulating factors such as e.g. the amount of training seem to mediate the causal relation between action gaming and different attention parameters.

A-0472

MEMORY: INSIGHTS FROM GRAPHEME-COLOUR SYNAESTHESIA

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People with grapheme-colour synaesthesia have consistent colour experiences in response to letters and numbers. Moreover, they show a specific profile of enhanced memory performance as compared to demographically matched controls. Surprisingly, the memory performance advantage can also be found for stimulus material which does not elicit synaesthetic experiences such as simple abstract shapes. Hence, the most obvious explanation that the synaesthetic experiences lead to richer encoding and retrieval opportunities is unlikely to be a valid explanation. We provide an alternative framework to account for and predict enhanced memory performance in synaesthesia. Namely, synaesthesia is linked to wider changes in the cognitive system at the interface of perception and memory in the ventral visual pathway.

A-0473

RELATIONSHIPS BETWEEN BEHAVIOR RATINGS AND PERFORMANCE-BASED MEASURES OF EXECUTIVE FUNCTION IN CHILDREN

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Relationships between behavioral ratings and performance-based measures of executive function (EF) are subject of increasing interest in the field of cognitive development and clinical neuropsychology. It is generally accepted that behavioral ratings provide complementary information about children's EF to performance-based tasks. However, correlations between these two types of EF measures are usually low or very low. Such results give rise to question whether the particular subdomains of EF measured by behavioral ratings and performance-based tasks assess the same constructs. It is also unclear to what extent cognitive efficiency determines the ability to control behavior in goal-oriented situations. The aim of our study was to establish relationships between behavioral ratings and performance-based measures of EF in children. We used the Behavior Rating Inventory of

Executive Function (BRIEF) and four performance-based tasks (reaction inhibition, interference control, shifting, updating) in 137 children (with ADHD, asthma, diabetes and the healthy peers). Only in children with asthma significant correlations between behavioral ratings and performance-based measures of EF were found. Children who were both quick and correct in performance-based tasks did not obtain best results in the BRIEF. Possible explanations of weak relationships between behavioral ratings and performance-based measures of EF will be proposed.

A-0474

THE SPEAKER'S ASSUMED NEEDS INFLUENCE THE INTERPRETATION OF SPATIAL DESCRIPTIONS: EVIDENCE FROM LISTENERS' EYE-GAZE IN A PERSPECTIVE-TAKING TASK

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We examined how attributions about the conversational partner influence the perspective that listeners adopt when interpreting spatial descriptions. Listeners received instructions to select an object from a computer-based configuration that also indicated their own (0°) and their partner's moving perspective across trials (0°, 90°, 135°, 180°, 225°, 270°). In Experiment 1 the experimenter served as the partner, whereas in Experiment 2 the experimenter was introduced as another naïve participant. According to the listeners' object selections and tracked eye-movements on ambiguous trials, listeners were classified as responding from egocentric, partner-centered, or mixed perspectives. In Experiment 1 listeners overwhelmingly responded egocentrically, whereas in Experiment 2 partner-centered and mixed responding increased. Thus, listeners don't default to egocentric responding when they believe they are interacting with someone who has real informational needs. Perspective-taking strategies are therefore not merely guided by the cognitive demands of the task, but by how people construe their own and their partner's relative ability to contribute to mutual understanding. A simple social cue (e.g., how the partner is introduced) can alter perspective-taking behavior in otherwise identical tasks.

A-0475

EMBODIED MEMORY: MEMORY MALLEABILITY BY FACIAL FEEDBACK MANIPULATION DURING RECONSOLIDATION.

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Somatic states are thought to play a role in memory. The aim of this study is to investigate whether manipulation of somatic states can influence the reconsolidation processes of emotions related to a memory. To our knowledge no

study has yet directly investigated the possibility to use the malleability window offered by memory reactivation to modify a negative memory only by manipulating somatic states.

To test this hypothesis, we manipulated facial feedback during negative memory reactivation. Subjects were asked to read a sad story to induce a negative emotional memory. Subjects rated their emotions about the text just after reading and 24 hours later (after memory reactivation). Facial feedback was manipulated during memory reactivation and subjects were asked both emotional and memory questions about the text. Preliminary results showed that subjects that had smiled during memory reactivation later rated the text as less negative than control subjects. Interestingly, the zygomatic activation during memory reactivation did not have any impact on memory scores.

This suggests that manipulating somatic states modifies only the emotional evaluation associated with the memory, without affecting the memory of the text itself. Thus, modulating bodily states during the reconsolidation window might open new outcomes for psychotherapeutic interventions.

A-0476

WITHIN- AND BETWEEN-PERSON INTEGRATION OF VISUO-SPATIAL INFORMATION

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Previous research has demonstrated both efficient integration of different sources of sensory information within individual cognitive system (Ernst and Banks, 2002) and efficient integration of between-person meta-cognitive judgments using verbal communication (Bahrami et al., 2010). In the present study we compared within- and between-person integration of visuo-spatial information. Participants were asked to locate objects in 2D projections of 3D objects that varied the observer's perspective onto the object. Participants performed the location task in three conditions: (1) alone from one perspective; (2) alone from two perspectives; (3) with a partner, who had a different perspective. Participants' location accuracy was significantly higher in conditions (2) and (3) as compared to condition (1). Also, location accuracy was the same in condition (2) and (3). The results provide first evidence that perceptual integration across individuals may be as efficient as perceptual integration within individuals.

A-0477

STRONG SENSORY PREDICTIONS FOR A SOUND MODULATE AND EVEN ELICIT EXOGENOUS BRAIN RESPONSES

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Current theories on perception assume that the construction of our perceptual world relies on the anticipation of upcoming stimulation. How can the brain predict forthcoming stimuli?

We unmasked the neural representation of a prediction by omitting the strongly to-be-expected sensory input. These strong expectations were generated by asking the participants to generate a sound via a button press. Occasionally the sound was omitted. Such omission elicited an event-related potential component that resembles the time-course and scalp topography of the early auditory N1 that was elicited when subjects passively listened to the sounds. This result suggests that when a clear prediction can be formulated, the brain activates a template of its response to the predicted stimulus before it arrives to our senses. This brain signal obtained with omissions may reflect the prediction error. Nevertheless, as there is no input to the auditory system with omissions, the prediction error corresponds to the prediction (prediction error = prediction minus sensory input). Interestingly, such an N1-like omission effect is not obtained with weak predictions (when omission have higher probability) and when the sounds identity that are generated via the button press cannot be predicted.

A-0478

IS THE AFFORDANCE EFFECT A SIMON-LIKE EFFECT?

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Previous attempts to explain the affordance effect (AE) led to two major accounts. According to Tucker and Ellis (1998), AE reflects an activation, driven by the graspable part of the stimulus-objects (typically their handles), of specific motor programs for manual interaction. Alternatively, Cho and Proctor (2010) consider AE as a Simon-like effect. Here a comparative investigation of these two accounts is presented. Right-handed participants performed a go/no-go task in which graspable-handled objects on a touch-screen were used as stimuli. Since the Simon effect (SE) is typically absent under this condition, the presence of AE should support the motor account, whereas its absence the spatial account. Reaction times (RTs), reach-to-touch times (MTs) and spatial coordinates of the touch on the screen were recorded. Results from the RTs and MTs analyses showed no AE, supporting the spatial account. On the other hand, the analysis of the spatial coordinates showed a slightly shift of the touch toward the location of the handle, particularly for the right hand, supporting the motor account. In conclusion, it seems that the role of motor and spatial mechanisms for the AE might depend on both the specific paradigm that is used and the performance measures that are recorded.

A-0480

THE WORD LENGTH ILLUSION: LINGUISTIC STRUCTURE BIASES PERCEPTION

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We have proposed that the perceptual structure of letter strings is based on the CV pattern, that is, the arrangement of consonant and vowel letters (Chetail & Content, 2012),

and we have recently shown that this structure biases the apprehension of the physical length of letter strings. Participants had to estimate the length of briefly displayed words by drawing a horizontal line on the screen. Pairs of words matched on number of letters and syllables were used, with one word comprising one vowel cluster less than the other (e.g., PLIER, CCVVC, one vowel cluster, vs. REPLI, CVCCV). The former were consistently estimated a few pixels shorter than the latter. Interestingly an effect of number of syllables was also apparent but only at 100ms. In the present study, we explored the time course of the orthographic (CV pattern) and phonological (number of syllables) effects. Participants performed 1512 length estimation trials so that each word was presented with different durations (17 to 100ms). As expected, a reliable orthographic bias was already present at 33ms exposure duration whereas the syllabic length effect emerged later. The present findings provide further evidence that orthographic coding incorporates linguistic structure from the beginning of perceptual processing.

A-0481

THE ROLE OF THE CONSONANT/VOWEL PATTERN IN THE PERCEPTUAL DISCRIMINATION OF LETTER STRINGS

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According to a recent hypothesis, the categorization of letters as consonants and vowels constrains the perceptual structure of letter strings, with each vowel or vowel cluster determining one perceptual unit. A previous test of this hypothesis with the same/different task showed that pseudowords with a different CV pattern were judged as different from the referent word (e.g., POIVRER/povirer, 3 vs. 2 vowel clusters respectively) more quickly than pseudowords with the same structure (e.g., POIVRER/poirver, both 2 vowel clusters). To directly test whether the representation based on the CV pattern emerges before making contact with the lexicon, we conducted two same/different experiments with pseudowords both as referent and target. In the two critical conditions, the targets were built by the transposition of two adjacent letters of the referent pseudowords, with either the same CV structure (e.g., FOUREIL/forueil, 2 vowel clusters) or not (e.g., BOUDLET/bodulet 2 vs. 3 vowel clusters). Across experiments, the results consistently showed that target pseudowords with a different structure were more quickly judged different from their referent than targets with the same structure as the referent. The results suggest that CV pattern constrains the perceptual structure of letter strings at the earliest processing levels.

A-0482

THE DYNAMICS OF INTUITION DEPEND ON SEMANTIC ASSOCIATIONS AND AFFECT

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The main goal of the two studies was to determine whether intuitive judgments of semantic coherence are preceded by feeling-of-knowing (FOK) states and depend on both

affective (induced affective responses) and cognitive (strength of associations) factors. Both studies employed accumulative cues task in which participants are reading a series of words semantically related to a hidden solution word and asked to find out the solution. After each related word they were judging how close they were to task's solution. Affective valence of solutions (positive vs. neutral vs. negative) was varied to show the impact of induced subtle affective responses on the accuracy of solutions, number of cue words preceding the solution as well as FOK states. The results showed more accurate solutions and faster increase in FOK states in tasks with positive solutions as compared to both neutral and negative. The second experiment replicated this finding and extended it by showing positive impact of associative strength between cues and solutions on how fast intuitive judgments of coherence are formed and the slope of FOK states. We conclude that positive affect supports FOK states and facilitates intuitive judgments of coherence.

A-0483

FINDING A BETTER MIRROR OF THE SOUL – INTEGRATING PSYCHOPHYSIOLOGICAL AND EYE TRACKING MEASURES IN ATTITUDE RESEARCH

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In the recent years, the eye tracking technology has been used in an increasing number of fields, including marketing and usability research, as well as various psychological areas – both in clinical and cognitive perspectives. Despite growing popularity of eye-tracking measures in research employing affective stimuli, theoretical guidelines concerning their interpretation is scarce, often ambiguous, and highly dependent on the particular research paradigm and visual characteristics of stimuli. The aim of the presented research project is to develop a measurement framework which will allow to develop more reliable and valid indices of affective components of attitudes based on integrated eye tracking, psychophysiological, and behavioral data. Presented results summarize preliminary stage of the project where eye movements and psychophysiological reactions were recorded in several different procedures (antisaccades task, free viewing, etc.). The preliminary results were focused on identifying common, invariant aspects of eye tracking behavior, possibly independent of the picture characteristics, for each of the procedures. The results are discussed in reference to existing literature and the consecutive studies in which we will focus on generalizing the results to more complex attitude objects.

A-0484

AUTOMATIC PROCESSING OF PLACE-VALUE IN FOUR-DIGIT NUMBERS DEPENDS ON NUMBER COMPLEXITY

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Coding place-value of numbers is as relevant in number processing as coding the identity of the corresponding digits. Recently, Kallai and Tzelgov (2012) manipulating physical size and numerical magnitude in a physical size decision task found longer response times when the numerical magnitude of four-digit numbers was not congruent with its physical size. They concluded that place-value in multi-digit numbers is processed automatically. However, these authors, with the aim of isolating the effect of place-value, used exclusively strings composed by three zeros and one non-zero digit that varied its position within the string (e.g. 0060 vs. 0600), hence it is uncertain whether automatic coding of place-value can be extended to more complex number strings (e.g., 1364 vs. 1634). In the present research, together with Kallai & Tzelgov's stimuli, numbers composed of four different digits (e.g. 7192 vs. 7912) were employed. Fifty-nine participants were requested to decide which of the two four-digit-length numbers was presented in bigger font. Results using Kallai & Tzelgov's stimuli replicated the findings of these authors. However, no evidence of place-value processing was found with the all-digit-different stimuli. Automatic coding of place value seems to be affected by the complexity of numbers to be processed.

A-0485

IS MATH ANXIETY CAUSED BY A DEFICIT IN BASIC NUMERICAL SKILLS? A STUDY USING NUMERICAL AND NON-NUMERICAL TASKS

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Recent research found differences between high and low anxiety adults in basic numerical tasks like Arabic number comparison and dot enumeration (Maloney et al., 2010; 2011). This led some researchers to consider that math anxiety could be motivated by a subtle deficit in processing quantities. However, most of these studies did not controlled for some relevant variables, hence the difficulties found in basic tasks could be motivated by differences in working memory or in "general" anxiety between the high and low math anxiety groups. In the present research working memory skills and trait and mood anxiety were assessed in 15 low anxiety and 15 high anxiety 6th grade students, then both groups took part in three experiments. In the first, dot comparison task, bigger effects of distance and magnitude were found in the high anxiety group. In Experiment 2, Arabic number comparison, however, the only difference between both groups was related to speed: low anxiety participants were faster. Similar differences were found in Experiment 3, in which participants were required to perform an attentional (Posner) task without numerical content. It is concluded that the relationship between performance and math anxiety is more complex than previously thought.

A-0486

EFFECTS OF SIZE AND CASE ON MASKED REPETITION PRIMING WITH NONWORDS: AN ERP INVESTIGATION

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This study combined masked repetition priming with ERPs to investigate the very first phase of orthographic processing with nonword targets. Target stimuli were composed of 7 letters and either formed of a random string of consonants or a pronounceable sequence of consonants and vowels. Targets were preceded by primes that could be the same as the target or composed of seven different letters. The size and case of the prime were also manipulated. The ERPs revealed a main effect of target type, with differences arising around 250ms post-target onset. Pronounceable nonwords produced more negative-going waveforms than consonant strings. A N/P150 effect was found only when prime and target shared exactly the same size and case at posterior sites. Starting at 200ms, repetition priming effects were found to interact with target type, with stronger priming effects arising with pronounceable nonwords. Differences in priming effects as a function of target type were mostly evident in a widely distributed negative-going component, peaking at about 300ms, and continuing through to 550ms post-target onset. The results provide new evidence on the earliest phases of orthographic processing, those involved in mapping feature information onto abstract letter identities, and the formation of a prelexical orthographic code.

A-0487

PHYSICAL AND CONCEPTUAL MAGNITUDE IN OBJECTS PERCEPTION

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How objects' conceptual magnitude is processed? It was suggested that conceptual magnitude is automatically processed. Namely, irrelevant conceptual magnitude can interfere with processing of physical magnitude. The current study further examines this question and aimed to expand the understanding of conceptual automaticity. Two different objects were shown and participants were asked to decide which object was larger on the screen (physical magnitude), or in the real world (conceptual magnitude), in separate or mixed (which contained both kinds of comparison) blocks of trials. In the separate blocks only physical size was processed automatically. In the mixed block, which required switching between physical and conceptual magnitudes comparison, both conceptual and physical magnitudes were automatically processed. These results suggest that physical magnitude is processed automatically; whereas conceptual magnitude is processed automatically under certain condition, namely under slow processing. This pattern of results is indicative of partial automaticity of conceptual magnitudes.

A-0488

THE NATURE OF STORED REPRESENTATION IN WORKING MEMORY DEPENDS ON MAINTENANCE STRATEGY

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The following project investigated the effectiveness of semantic and phonological cues during immediate recall from working memory (WM) in order to elucidate underlying encoding mechanisms during WM tasks. In both experiments, participants completed two blocks of location judgment span task. During recall in both blocks, participants were given the opportunity to ask for a help word that would cue them to the word that was presented in that serial position (e.g., "lapin"). In one block, the cue word was semantically related to the target (e.g., "carotte"), while in the other block, the cue word rhymed with the target (e.g., "copain"). In the second experiment, participants were asked to either use rehearsal-based or refreshing-based maintenance strategies (cf. Camos, Mora, & Oberauer, 2011). The results suggested that use of the cues was similar between cue types (Experiment 1), but the effectiveness of the cues for recall depended on the strategy (Experiment 2). Specifically, phonological cues were more effective for the rehearsal-based strategy group, while semantic cues were more effective for the refreshing-based strategy group. This extends current research showing that rehearsal and refreshing are distinguishable maintenance mechanisms such that these mechanisms differentially support underlying levels of processing during WM.

A-0489

INVESTIGATING ENCODING OF LOCATION IN THE MATCHING-TO-SAMPLE-TASK IN ANIMALS

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The matching-to-sample task is frequently used to test emergent relations in animals. In this task, subjects typically are presented with a sample in the middle and subsequently have to choose the same stimulus out of two new stimuli presented on the sides. However, when the stimuli are presented on different locations during testing, animals fall back to chance levels, unless multiple locations were also used during training. This means that animals encode the location of stimuli together with their identity. To examine whether this could interfere with the generalization to new stimuli, four Sprague-Dawley rats were tested. Half of the rats were trained on a matching-to-sample task in which the location of the stimuli randomly varied over different locations. Their learning speed to match identical odors and the generalization to new stimuli were compared with a group that received regular matching-to-sample training. If the encoding of location in a regular matching-to-sample task interferes with generalization, we expect that rats trained with random locations would perform better on a generalization test with new stimuli. The results shed light on how animals solve cognitive tasks and whether they are capable of full concept learning of identity relations.

A-0490

ENHANCED WORKING MEMORY IN GRAPHEME-COLOUR SYNAESTHESIA AND ITS METABOLIC BASIS

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There is consistent evidence for enhanced episodic memory in grapheme-colour synaesthesia, but the extent to which this condition impacts working memory is poorly understood. Similarly, although primary visual cortex has been implicated in grapheme-colour synaesthesia, the role it plays in supporting enhanced visual cognition in this condition has yet to be elaborated. Here we will describe recent research measuring working memory for colours and graphemes and neurochemical concentrations in primary visual cortex in grapheme-colour synaesthetes and non-synaesthetes. We demonstrate that synaesthetes reliably display enhanced colour, but not grapheme, working memory. We further show that synaesthetes exhibit elevated creatine in primary visual cortex and that creatine levels correlate with colour working memory. This research suggests that synaesthesia confers a benefit on colour working memory and that this effect is driven by elevated creatine in primary visual cortex. These results shed new light on the source of enhanced visual cognition in synaesthesia as well as the neurochemical basis of individual differences in visual working memory.

A-0491

NEAR AND FAR-TRANSFER EFFECTS OF WORKING MEMORY TRAINING FOR CHILDREN

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The aim of the research was to investigate whether short-term training of working memory updating results in effects that go beyond the specific training improvements, leading to transfer effects on general working memory capacity and intelligence. Sixty-nine typically developing children, aged between eight and ten years, participated in the study. Forty-two of them formed an experimental group and twenty-seven belonged to an active control group. The experimental group performed computerized tasks that required working memory updating (modified versions of n-back and keep-track procedures), whereas the control group performed problem-solving tasks. The training exercises were scheduled as follows: 13 sessions (two pre-test and one post-test session included) that lasted approximately 40 minutes each. Before and after the training, all participants completed assessments of working memory (Ospan) and intelligence (Raven Matrices Test, WISC-R). The results suggest that training improved general working memory capacity (Ospan; WISC-R: Coding, Digit Span) and effects transferred to other cognitive skills, especially verbal reasoning (WISC-R: Arithmetic, Similarities, Vocabulary). The transfer effect on non-verbal reasoning (Raven Matrices Test; WISC-R: Picture Arrangement, Block Design) appeared weaker and significant only in the case of those children from the experimental group who performed relatively worse during the pre-test measurement.

A-0492

THE PRODUCTION OF SUBJECT-VERB AGREEMENT

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Traditionally, the production of agreement has been studied using preamble completion paradigms, where participants produce inflected verbs to complete provided subject phrases (Bock & Miller, 1991). This paradigm, however, also captures comprehension as participants must understand the preamble before completing it.

We designed a production task (Experiment 1), in which preambles were not linguistically offered. Participants described simple scenes with singular and plural local nouns in conceptually integrated and unintegrated settings. Similar to previous findings, there were effects of local noun number: more agreement errors were made when the numbers of the head and local noun mismatched. There were also effects of integration: more errors were made for unintegrated items than for integrated items with singular head nouns (Brehm & Bock, 2011). Using the same items in a preamble completion task (Experiment 2), we only replicated the attraction effects. This suggests that during completion tasks, notional effects might sometimes not surface because speakers do not generate the message themselves.

The production task we developed is a good alternative to the completion paradigm, as it replicates previous findings while requiring speakers to generate their own messages. We conclude that during production, both grammatical and conceptual number mismatches make correct agreement harder.

A-0493

REALIZING DELAYED INTENTIONS: OVERACTIVATED MONITORING FUNCTION IN OBSESSIVE COMPULSIVE DISORDER (OCD)

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Obsessive-compulsive disorder (OCD) is characterized by repetitive intrusive unwanted thoughts (obsessions) and repetitive behaviors (compulsions). It is generally thought that executive system is the main underlying cognitive factor of symptoms of OCD (Olley et al., 2007). Here we present two experiments aimed to investigate event based prospective memory (PM) functions in OCD. In the first experiment we adapted the experimental paradigm developed by Burgess et al. (2001), while in the second experiment we applied a modified dual-task paradigm, which required the altered execution and inhibition of responses to the same secondary task cues. According to our results the OCD group performed significantly slower on these tasks than the matched healthy control group. In the second experiment patients made significantly more false alarm type errors and there was a significant positive correlation between the number of false alarms and the PM subscale scores of the Prospective Retrospective Memory Questionnaire (PRMQ). These findings suggest that patients experience difficulties during event based PM task and that these difficulties may originate from over-monitoring stimuli for possible PM cues and the disinhibition of activated out-of-date responses. Keywords: executive functions, prospective memory, OCD

A-0494

DECOMPOSING ENCODING AND DECISIONAL COMPONENTS IN VISUAL-WORD RECOGNITION: A DIFFUSION MODEL ANALYSIS

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In a diffusion model, performance as measured by latency and accuracy data in two-choice tasks is decomposed into different parameters that can be linked to underlying cognitive processes. Although the diffusion model has been very successful at accounting for lexical decision data, in previous research the effects of stimulus manipulations originated from just one parameter (quality of the evidence: drift rates) (see Ratcliff, Gomez, & McKoon, 2004, Psychological Review). Here we examined whether the diffusion model can be used to effectively decompose the underlying processes during visual-word recognition. We explore this issue in an experiment that features a manipulation (word-frequency) that affects mostly the quality of the evidence (the drift rate parameter), and a manipulation (stimulus orientation) that presumably affects the encoding time more than it affects drift rate (the Ter parameter). Results showed that word-frequency and stimulus orientation had different effects on the model's parameters. Thus, the diffusion model is a useful tool to decompose the effects of stimulus manipulations in visual-word recognition.

A-0495

WITHOUT A TRACE AND WITHOUT HANDWIRING

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One of the most challenging unsolved problems in computational neuroscience is the representation of sequential information, especially when sequences include multiple instances of a single token.

In spoken word recognition, arguably the most successful and psychologically tractable computational approach is the TRACE model (McClelland & Elman, 1986). TRACE can represent multiple instances in sequence positions, but does so by „spatializing“ the temporal order problem by reduplicating slots for phonemes and words at successive time steps. However, the reduplication strategy is clearly inefficient and entails a likely unrealistic degree of independence between units -- e.g., the first and last /d/ in „dad“ are completely autonomous.

We recently argued that reduplication can be dispensed with in a new time-invariant string kernel (TISK) framework, and demonstrated that the TISK model performs nearly identically to TRACE with orders of magnitude fewer nodes and connections.

We have now extended that approach to show that weights that emerge through training with a simple learning rule (the Delta rule) allows us to simulate as many phenomena as our initial hand-wired model, while avoiding painstaking parameter tuning issues and being biologically motivated.

A-0496

THE CONTRIBUTION OF EXECUTIVE FUNCTIONS TO SENTENCE, PARAGRAPH AND GLOBAL TEXT COMPREHENSION.

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Recent studies have proposed that reading comprehension (RC) performance in children can be predicted by their level of executive functioning (EF). However, the exact relation between EF and RC is still unclear. The innovative nature of this study resided in investigating the role of EF at three levels of RC; sentence, paragraph and global text comprehension. Furthermore, unlike other studies, the present study investigated the contribution of multiple cognitive processes to RC. The sample consisted of 115 children between the ages of 9 and 11 years old. The test-battery included a reading comprehension, non-verbal IQ, word-decoding, vocabulary, grammar, working memory, planning and inhibition task. The influence of EF was explored with structural equation modeling. Preliminary results demonstrated that EF did contribute to variance in RC after controlling for word-decoding and verbal skills. Interestingly, the contribution of EF appeared to vary for the three levels of RC. Furthermore EF contributed to word-decoding performance, demonstrating an indirect influence on RC (as word-decoding contributed to RC). To conclude, this study provided insight into the relation between EF and RC performance in children between 9 to 11 years old. These findings are of interest as they may be of importance for primary education.

A-0497

THE ROLE OF ANGER, HAPPINESS, AND SADNESS ON IOWA GAMBLING TASK PERFORMANCE

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The present study aims to investigate the effects of different incidental emotions on decision making processes by using Iowa Gambling Task (IGT; Bechara, Damasio, Damasio, & Anderson, 1994). Following the Appraisal Tendency Framework (ATF; Lerner, & Keltner, 2000, 2001), the selection of emotions for induction (anger, happiness, and sadness) were based on certainty, control, and anticipated effort appraisal dimensions. For the second block of IGT, which includes high ambiguity about the game, it was specifically hypothesized that happy and angry participants would select more cards from the advantageous decks by relying on their gut feelings, due to the appraisal tendencies of higher certainty and control. Since most of the participants could not learn that one of the disadvantageous decks, B, was harmful indeed, only a specific analysis in terms of deck A was in line with the expectation. For the last block of IGT, it was expected and consistently found that the angry group outperformed the other emotion groups, due to the higher anticipated effort appraisal dimension associated with anger. In conclusion, it is proposed that new empirical studies are needed to examine the ATF and to understand the appraisal dimensions playing important role on complex tasks, such as IGT.

A-0498

TIME-BASED REWARD MAXIMIZATION

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Humans and other animals can time intervals in the range of seconds-to-minutes with high accuracy but limited precision. Consequently, any time-based decision is subject to our endogenous timing uncertainty and requires temporal risk assessment even in temporally deterministic scenarios. In this talk, I will present two temporal decision-making tasks in which reward maximization entailed substantial behavioral adjustments in response to different levels of endogenous timing uncertainty. In the first study, humans and mice were tested on a temporal discrimination task in which reward-maximizing bisection point depended on the level of endogenous timing uncertainty as well as exogenous probabilities. In the second study, rats and humans were tested on a task where each response reset the trial time and was reinforced only if participant waited longer than a minimum time since its previous response. In this task, reward maximization depended on an optimal balance between two time-dependent quantities, which in turn depended on the level of participants' timing uncertainty. In both studies, humans and animals exhibited close to optimal performance, nearly maximizing the reward they could attain for the level of their timing uncertainty. These results overall suggest the ubiquity of optimal temporal risk assessment performance.

A-0499

WHAT IS LEFT CAN BE "RIGHT": EFFECT OF ACTIVE HAND ON RIGHT-HANDERS' VALENCE/LATERALITY ASSOCIATIONS

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Valence and laterality have specific associations depending on manual dominance: right-handers associate right with positive and left with negative, while left-handers have opposite combinations (Casasanto, 2009). Since these associations appear to be based on sensorimotor interactions with the environment, our objective was to study the effect of action variations on those combinations. In a valence judgment task of emotional words, right-handers answered with lateralized movements. Half of participants used their dominant hand to answer, while the other half used their non-dominant hand. We manipulated the position of responses: for one block of items the position of response respected right-handers valence/laterality associations (right/positive, left/negative), and for the other block the positions respected left-handers associations (right/negative, left/positive; the order of blocks was counterbalanced across participants). Results showed that positive words were evaluated faster than negative ones when the "positive" response was on the acting hand's side (on the right for the active right-hand group and on the left for the active left-hand group). When this response was made on the other side, there was no effect of valence. Functional variations such as the active response hand can therefore modify valence/laterality associations in right-handers, who demonstrate compatibility effects opposite to their usual combinations.

A-0500

COGNITIVE BENEFITS IN CHILDREN ENROLLED IN AN EARLY BILINGUAL IMMERSION SCHOOL PROGRAM

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In line with findings showing a cognitive advantage conferred by early bilingualism acquired through home or community, Nicolay and Poncelet (2013) suggested that bilingualism acquired through an early second-language (L2) immersion education can also produce cognitive benefits for attentional/executive skills in 8-year-old children after only 3 years in an L2-immersion program. However, in that study, the level of attentional/executive skills of children before their enrolment in the immersion school program (at 5-year-old) had not been controlled. The present study aimed at revisiting these results in a follow-up study with a group of 51 five-year-old children about to begin a L2-immersion program and a control group of 50 monolingual children matched for age, verbal and nonverbal intelligence, socioeconomic status and performance on attentional/executive tasks. Three years later, the intelligence and attentional/executive tasks were administered to the same children. No difference was found between the two groups for intelligence measures. However, the immersion group's reaction times were significantly faster than those of the monolingual group on attentional/executive tasks assessing alerting, selective and divided attention as well as mental flexibility. These results confirm that, after only 3 years in a L2-immersion school program, positive effects on attentional/executive development can be observed.

A-0501

DOES MUSIC TEMPO AFFECT THE TEMPORAL CONGRUENCE BETWEEN PHYSICAL PRACTICE AND MOTOR IMAGERY? A PILOT STUDY.

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When people listen to music, they hear beat and a metrical structure in the rhythm, these perceived patterns enabling coordination with the music. Clear correspondence between the tempo of walking and that of music has been demonstrated, but whether similar synchronization occurs during mental practice is unknown. Twenty participants walked naturally 8 m, either physically or mentally while listening slow and fast music or not. Executed and imagined walking times were recorded to assess the temporal congruence between physical and motor imagery (MI). Results showed a difference when comparing MI_{slow} and MI_{fast} times, but these durations did not differ from soundless MI times, hence showing that background music may not exert a detrimental influence on the ability to use MI. However, data revealed that the ability to achieve temporal congruence between physical and MI times decreased when listening either slow or fast music. In particular, the difference reached significance when participants listened fast music. These data suggest that when physical movements synchronize with the musical

tempo, the ability to form accurate MI of such movement may be affected by the rhythm of the music. Practical applications in sport are discussed as athletes frequently listen to music before competing.

A-0502

IMPAIRED MEMORY FOR MATERIAL RELATED TO THE DEMANDS OF A PROBLEM SOLVED PRIOR TO ENCODING: REDUCED ACCESSIBILITY OF PROBLEM-RELATED ITEMS OR INTERFERENCE AT RECALL?

Marek Kowalczyk

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Earlier research by the author revealed that material related to the demands of a divergent problem, encoded incidentally in a speeded affective classification task, tends to be recalled worse in participants who solved the problem prior to encoding than in participants in the control, no-problem condition. The aim of the present experiment was to replicate this effect with a new, size assessment orienting task, and to test its possible mechanisms: episodic inhibition or impaired encoding, which may be a consequence of problem-related processing triggered by the critical items in the classification task, versus interference at retrieval, due to similarity of these items to the problem solutions. Participants (202 young adults) either solved a problem before the classification task, or not, and classified each item in this task once (no-repetition), or three times (repetition condition). All participants performed an unexpected free-recall task for the classified material. There was a reliable effect of impaired recall of problem-related items in the repetition condition, but not in the no-repetition condition. Under the assumption that repetition should enhance inhibitory or impaired encoding effects, and reduce interference at recall, these results favor the first two mechanisms over the interference account. Keywords: Recall; Repetition; Encoding; Interference; Inhibition.

A-0503

CROSS-DIMENSIONAL INTERACTIONS BETWEEN NUMBER AND OTHER MAGNITUDES IN INFANTS AND YOUNG CHILDREN

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Recent debates over the mechanisms that underlie the processing of number and other magnitudes serve as the impetus for the studies presented in this talk. Despite widespread agreement that numerical and non-numerical magnitudes interact to influence behavior, there are many theoretical and empirical questions about the nature and processes that support such interactions. In this talk, I will show that when infants and preschoolers make ordinal and equivalence judgments about non-symbolic number, they are reliably influenced by the presence of spatial extent and duration cues, with congruent spatial or temporal information facilitating number judgments but incongruent spatial or temporal information interfering with number judgments. Using non-symbolic stimuli, the findings from these studies show that interactions between number and other magnitudes are robustly modulated by stimulus-related perceptual features. Cross-dimensional

interactions are strongest when visual and auditory stimuli are homogenous in nature. Heterogeneity reduces both facilitation and interference of spatial extent and duration on number judgments. Taken together, these studies suggest that the integration of numerical and non-numerical magnitudes is affected by early perceptual inputs, which, in turn, may determine the weighting of multiple dimensions in a composite representation of analog magnitude.

A-0504

NEURAL CORRELATES OF CONFLICT RESOLUTION IN AN OBJECT-BASED SIMON EFFECT: AN FMRI STUDY

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In a Simon task, a task-irrelevant spatial stimulus feature either corresponds or does not correspond to the spatial position of the response. Noncorrespondence typically leads to interference, suggesting conflict between automatically activated and required response codes. In an event-related fMRI study we investigated the neural correlates of conflict resolution when stimuli with high (creamers), intermediate (glasses) and no functional meaning (triangles) were employed. Creamers were presented centrally with their spouts left-rightward oriented. Glasses and triangles were presented laterally and had a symmetrical form. Participants discriminated upright-upside-down orientations by pressing two lateralized buttons. Noncorrespondence > correspondence contrasts showed activation of frontal eye fields (FEF) and orbitofrontal cortex (OFC) for upright creamers, but not for glasses, triangles, or upside-down stimuli. These areas are typically activated during spatial coding and recognition of meaningful objects, respectively. Furthermore upright > upside-down contrasts revealed strong activation of the retrosplenial cortex (RSC), which is known to be involved in object recognition based on contextual information. Notably, this activation pattern was more posterior for triangles, intermediate for glasses, and more anterior for creamers. Results identify a network engaged in solving the conflict produced by the spatial codes originated from the objects' high functional meaning (direction of use given by spout orientations).

A-0505

GAZE CUEING BY FACE-LIKE OBJECTS

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Visual images other than face are sometimes seen as faces (Pareidolia phenomenon). It is known that eye gaze triggers automatic shifts of attention. In the present study, we examined whether attentional shifts would be produced by the „gaze“ of face-like objects. Participants reported the position of a target dot presented after a cue stimulus. The cue was either a cartoon-face or a face-like stimulus that led to the Pareidolia phenomenon and had

left- or right-diverted gaze. In Experiment 1, we instructed the participants that the face-like objects could be seen like faces and found the robust gaze cueing effect (i.e., the reaction times were shorter when the gaze direction and the target location were congruent) even with the face-like stimulus. In Experiment 2, we did not explain that the objects could be seen like faces. Whereas the cueing effect was observed for the participants who spontaneously saw faces in the objects, the effect was eliminated when the observer did not see the objects as faces. These results suggest that the subjective experience of the visual object as faces is the major determinant for the automatic shifts of spatial attention by eye gaze.

A-0506

COVERT MOTOR PREPARATION IN DISTRACTOR-INDUCED BLINDNESS

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Distractor-induced blindness can be induced in rapid serial visual presentation (RSVP) tasks with targets being presented simultaneously with or directly after a cue. Here, the detection of the target is prevented by preceding distractors sharing the target's features. Using this approach, we investigated whether targets which are not consciously perceived still influence motor preparation. Additionally, we aimed to shed light on the role of distractors as they induce this blindness. In a speeded response task, participants were instructed to discriminate whether the onset of the cue (red fixation point) was associated with the target (orientation change of bars), or not. Hits were faster than correct rejections. Interestingly, this effect diminished rapidly when distractors were present. This suggests that distractors lower the inherent tendency to expect a target. Overall the electrophysiological results were in line with this. Most importantly electrophysiological as well as behavioral data showed that misses were processed differently than hits and correct rejections. Thus, motor preparation appears to be affected by unconscious processing of the target. Whether this is based on preset action plans and whether it substantiates the notion that motor preparation does not require conscious access to visual targets will be discussed.

A-0507

MATHEMATICS, CONSTRUCTION PLAY AND COGNITIVE ABILITIES: (HOW) ARE THEY RELATED?

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Construction play has been associated with mathematical performance and with spatial and cognitive abilities. However, no study examined the important interrelationships between all of these factors simultaneously. In order to fill this gap, this study looks at the relationship between Lego construction ability, cognitive abilities and mathematical performance in 7 year-old, Year 2 school children. We tested both visuospatial and verbal working memory and short term memory, as well as non-verbal intelligence. Mathematical performance

was measured through the WIAT-II numerical operations, and the reading subtest was used as a control variable. We used a Lego construction task paradigm based on four task variables found to systematically increase construction task difficulty. The results suggest that Lego construction ability is positively related to mathematics performance, and visuospatial working memory fully mediates this relationship. The implications of the research may be to use Lego construction training as an intervention tool to develop visuospatial working memory, which in turn may improve mathematics performance.

A-0508

CONTROL OF ATTENTION DISTRIBUTION IN 3D SPACE WITH FLANKER STIMULUS

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The Eriksen flanker task was used to clarify how well attention distribution can be controlled in real 3D space. Attention distribution control in such situations as driving a vehicle is an important factor that needs to be clarified in a large space. A 3D attention measurement system was designed and built that is ~12 m long with the fixation point located 120 cm from the observer. A target was presented at the fixation point, and a flanker stimulus was presented randomly 30, 81, 120, 158, or 230 cm from the observer. Compatible and incompatible conditions in terms of target and flanker shapes were used. The participants were required to identify the target shape while ignoring the flanker stimulus. There was no interference effect for any of the flanker stimuli even though they were presented along the observer's central line of sight. This indicates that attention can be controlled adequately even if a flanker stimulus is presented in the depth direction and that the distribution of attention can be flexibly controlled in real 3D space.

A-0509

REWARD GUIDES ATTENTION TO REAL-WORLD OBJECT CATEGORIES.

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Reward is thought to motivate approach behaviour in part by automatically facilitating the processing of reward-associated visual stimuli. Studies of human vision have demonstrated this at the level of visual features, showing that objects characterized by reward-associated features become salient and attention-drawing. This mechanism is thought to have the evolutionary function of biasing vision towards objects likely to provide basic rewards. However, exemplars taken from real-world categories, like 'cars', rarely share more than a few basic features, and the features that characterize individual exemplars are often shared with non-target items. The utility of a reward-priming mechanism that acts solely on features thus seems questionable, and more benefit would be provided by a mechanism that could prime a category of visually heterogeneous stimuli. Here I present results from behavioural and event-related fMRI experiments demonstrating that reward can in fact potentiate visual processing of a heterogeneous category of

real-world objects during search through cluttered natural scenes. fMRI results rely on the decoding of information content in high-level visual cortex (MVPA), and analysis of individual variability implicates the involvement of the dopaminergic reward system in creating this effect. Reward appears to play a critical and undervalued role in naturalistic visual search.

A-0510

ADDING LYING AND NON-LYING CUES TO FACES: WHEN DO WE START DOUBTING OTHERS?

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We quickly form first impressions about the trustworthiness of newly encountered people. Such instant judgments might be innate, automatic, performed unconsciously and independently to other cognitive processes (e.g. like a “modular” process). Yet, numerous studies highlighted problems with lying detection paradigms, high error rates and learning in such studies. Additionally, humans do both detecting and disguising lies, in particular the latter posing cognitive challenges. Thus, liars might display a mixture of controlled (fake) trust cues and uncontrolled lying cues making the interpretation of the expression difficult (people guess). In three consecutive online studies, we i) tested for facial cues indicative of lying (FCL) and non-lying (FCnL) and ii) whether seeing an increasing amount (range 0–4) of FCL and FCnL on a standard face results in enhanced guessing behaviour (yes / no lying answer) (studies 2 and 3) accompanied by slower responding (study 3). Results showed that pronounced guessing and slowest responding occurred for faces with an intermediate and not with the highest number of FCL. FCL were more important than FCnL to decision making. Thus, only a few FCL may interfere with automatic processing of lying detection (irrespective of FCnL), probably because too little lying information is yet available.

A-0511

DUAL-TASKING UNDER STRESS: CONTEXT-SENSITIVE ADJUSTMENT OF TASK SHIELDING IN CONDITIONS OF ACUTE STRESS

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In dual-task performance, recent research showed increased between-task interference reflecting more

parallel task processing in conditions of acute stress. Based on this finding, we investigated whether this represents a stress-related impairment of cognitive control processes of task shielding, or a resource-saving strategy of favouring a more parallel over a more serial task processing mode. Fifty-six healthy participants were exposed to either a well-established psychosocial stress induction protocol (Trier Social Stress Test) or a standardised control situation prior to a dual task. In different blocks, they were instructed to perform the dual task either in a parallel or in a serial task processing mode allowing for increased or decreased between-task interference, respectively. After successful stress induction as indicated by elevated salivary α -amylase and cortisol levels, the stress group displayed an instruction-specific adaptation of the amount of between-task interference that did not differ from the control group. Our finding that stressed individuals can flexibly adopt both a more resource-saving parallel and a more resource-consuming serial task processing mode speaks against a stress-induced impaired control regulation in dual tasks. Instead, we suggest that acute stress experience acts as a trigger for a context-sensitive adjustment of cognitive control.

A-0512

REDUCED CORPUS-CALLOSUM VOLUME IN POSTTRAUMATIC STRESS DISORDER HIGHLIGHTS THE IMPORTANCE OF INTER-HEMISPHERIC CONNECTIVITY FOR ASSOCIATIVE MEMORY

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Memory deficits are a common complaint of patients with post-traumatic stress disorder (PTSD). Despite vivid trauma-related memory, previous studies report memory impairment for non-trauma related stimuli when compared to controls; specifically in associative-memory (Guez et al., 2011). Healthy individuals show hemispheric memory asymmetry with left prefrontal lateralization of encoding and right prefrontal lateralization of episodic retrieval, suggesting a role for inter-hemispheric communication in memory-related tasks (Gazzaniga, 2000; Ringo, Doty, Demeter, & Simard, 1994). Since brain magnetic resonance imaging (bMRI) studies in PTSD patients report volume changes in various regions, including white-matter and corpus-callosum (CC), we aimed to test the relationship between memory deficits and CC volume in PTSD patients. We probed for specific alterations in associative-memory in PTSD and measured the volume of sub-portions within the CC employing bMRI. Our main finding was a reduction

in CC white-matter volume in PTSD patients as compared to controls that was correlated to lower associative performance. We propose that CC volume reduction is a substrate for the associative-memory deficits found in PTSD.

A-0513

FLANKING MAGNITUDES: DISSOCIATION BETWEEN NUMEROSITY AND NUMERICAL VALUE IN A SELECTIVE ATTENTION TASK

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The current research studies whether attention and task relevance modulate numerical processing. In two experiments, participants were presented with a target matrix flanked by a distractor matrix and were asked to perform a comparative judgment (i.e., decide whether the target was larger or smaller than the reference 5). In Experiment 1, the target was symbolic (i.e., a single digit) and in Experiment 2, it was nonsymbolic (i.e., a random presentation of dots). In both experiments flanker matrices had two dimensions—numerosity and numerical value—which were manipulated orthogonally to create stimulus congruent, stimulus incongruent and response incongruent conditions. When responding to symbolic targets (Experiment 1), only the flanker's numerical value affected reaction times (RTs), whereas when responding to nonsymbolic targets (Experiment 2), only the flanker's numerosity affected RTs. In addition, the pattern of flanker interference differed between targets: for symbolic targets, stimulus congruency enhanced responses whereas for nonsymbolic targets, response congruency enhanced responses. These results imply both symbolic and nonsymbolic magnitudes can be automatically activated; however, this activation is contingent upon their relevance to the task at hand. Implications of these results on the efficiency of the visual processing system and on numerical cognition are further discussed.

A-0514

FACTORS THAT DETERMINE CITIZENS' VIEWS ON CAPITAL PUNISHMENT

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Factors that determine Japanese people's perceptions about the death penalty were investigated. Recently in Japan, discussion on the capital punishment has intensified, due in large part to the introduction of the lay judge system that makes it possible for citizens to impose the death sentence on a defendant. According to an investigation conducted in 2009 by the Cabinet Office of Japan, a majority of Japanese people (85.6%) supports the death penalty. It has been suggested that the perceived deterioration in law and order and the tendency for authoritarianism are factors that influence this support. However, no systematic enquiry has been conducted from a meta-analytical perspective

that takes the relevance of these factors into consideration. Therefore, an investigation was conducted on factors that influence perceptions about the death penalty. University students (N = 200) participated in the study. Their responses to a questionnaire on the death penalty were classified as: (1) inner factors originating from individual characteristics (i.e., cognitive judgments), and (2) social factors (i.e., insufficient knowledge about the punishment). Based on these results, a model on the perceptions of Japanese people about the death penalty, which takes the relationship between the above factors into consideration was developed.

A-0515

HEMISPHERIC ASYMMETRY IN IMAGERY PROCESSING THAT LINKS TO LANGUAGE

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This study used visual half-field (VF) presentation and event-related potential (ERP) measures to examine how the left (LH) and right (RH) hemispheres process concrete and abstract senses of polysemous nouns (e.g., "green book" versus "interesting book") and, in particular, in their ability to switch between these senses. Participants read adjective-noun-adjective triplets, in which the first adjective and the noun were presented centrally and the second adjective was presented laterally, and were asked to judge which adjective was more appropriate as a description of the noun. Responses on the first adjective replicated standard ERP concreteness effects, with concrete adjectives eliciting a sustained frontal negativity (500–900 ms) that has been linked to imagery. With initial presentation to the LH, this concreteness effect was also seen on the second adjective, irrespective of the concreteness of the prior adjective. However, with presentation to the RH, sustained frontal negativity was seen only for concrete adjectives not preceded by a prior concrete adjective. That is, prior imagery eased additional imagery selectively for the RH. These results provide additional evidence for a critical role of the RH in creating, maintaining, and augmenting mental imagery during normal language comprehension.

A-0516

LETTER TRANSPOSITIONS WITHIN MORPHEMES AND ACROSS MORPHEME BOUNDARIES

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Recent evidence has revealed conflicting results regarding the influence of letter transpositions during the recognition of morphologically complex words. While some studies suggest that the disruption of the morpheme boundary through across-boundary transpositions (e.g., darkness) leads to the absence of masked transposed-letter (TL) priming (Christianson, Johnson, & Rayner, 2005; Duñabeitia, Perea, & Carreiras, 2007), other studies have found that TL priming occurs independently of whether or not letters have been transposed across the boundary (Beyersmann,

Coltheart, & Castles, 2012; Perea & Carreiras, 2006; Rueckl & Rimzhim, 2011). We conducted three experiments to test whether the difference between TL- within and TL-across priming is modulated by (a) the transposition of internal versus external letters of the stem (Experiment 1), (b) the overall proportion of affixed trials (Experiment 2), or (c) the relative frequency between prime and target (Experiment 3). The results revealed equal TL-within and TL-across boundary priming across all three experiments, which adds to previous findings suggesting that across-boundary transpositions do not interfere with the recognition of morphologically complex words.

A-0517

MONITORING THE EFFECT OF OUR SPEECH ACTS: AN ERP STUDY

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Perception of the effect of speech acts is an information channel speakers presumably use to monitor their speech production, but this channel has received little attention in the literature. We therefore measured brain responses when speakers perceive their conversation partner failing to understand them. Nineteen pairs of participants played a dialogue game (in the written modality) where one person provided a very short definition of a target word (but without using that word itself) and then their partner guessed the target word, thereby providing correct or incorrect feedback. We recorded ERPs time-locked to feedback onset. In 49.6% of trials feedback was correct (wafer when wafer defined), in 25.0% incorrect but semantically related (e.g., wafer-pancake) and in the remainder incorrect in other ways (e.g., unrelated or „don't know"). ERPs showed a negative deflection for incorrect and a positive deflection for correct feedback starting around 250 ms, consistent with ERPs following correct vs. incorrect feedback in different tasks (e.g., time-estimation, Miltner et al., 1997). Semantically related incorrect feedback elicited a negative deflection around 500 ms compared to other incorrect feedback. This paradigm opens up new ways to study how speakers detect and analyze situations in which their speech acts are not understood.

A-0518

WHY IS HUMAN COMMUNICATION SO FLUENT? INVESTIGATION OF INTERACTIVE ALIGNMENT IN DIALOGUES FROM CHILDHOOD TO LATE ADULTHOOD

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The aim of our study was to prove the presence of interactive alignment in dialogues (Garrod and Pickering, 2004) and to investigate the relationship between interactive alignment and the 'theory of mind' from childhood to late adulthood. 142 participants took part in our research, clustered into seven age groups: 5-6 years old, 7-10, 11-14, 15-18, 20-23, 24-37 and 60-77 years old. Interactive alignment was measured by a complex test battery designed by our research team. It consisted of picture descriptions, lexical and linguistic tasks, theory of mind tests, and identification

of emotions. We found interactive alignment of lexical and linguistic representations during language production in dialogues. Children showed similar or even higher level of alignment on certain tasks than adults, while elderly participants exhibited a decrease in the level of alignment compared to young adults. Recent findings of the development of automatic social and cognitive skills is in line with these results, claiming that skill learning processes are better in childhood than adulthood. In addition, we did not find a relationship between „cold" theory of mind and interactive alignment. This result suggests that interactive alignment is a much more automatic process than we have thought so far.

A-0519

INTERACTIVE ACTIVATION IN READING ALOUD: WHAT IS FEEDBACK DOING?

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The dominant framework for language processing in general and reading in particular assumes that processing is best characterised by interactive-activation (IA; McClelland & Rumelhart, 1981; Rumelhart & McClelland, 1982). A key feature of IA is the presence of feedback from later processing modules to earlier ones. This is thought to make processing more efficient by allowing later modules to constrain earlier processing (McClelland, 1987), but this assumption has received remarkably little critical attention. Simulations using a model of reading aloud demonstrate that a) when feedback does influence processing, the influence is very small, b) the effects depend on the location of the feedback, and c) increasing the strength of the feedback increases error rates without further constraining processing. These results suggest that the field has overemphasized the influence of feedback when reading aloud.

A-0520

THE TIMELINE OF ATTENTION AND DISTRACTION

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Distraction occurs when an observer fails to ignore task-irrelevant stimuli (distractors) that are presented together with a target. Determining whether distractors are processed before, concurrently with, or after targets are processed, is imperative for understanding attention and distraction. Yet, behavioral investigations of the temporal loci during which targets and distractors are processed remain largely absent in the literature. Theoretical models have instead adopted divergent assumptions regarding the timeline of distraction, which have led to disparate theoretical propositions about when and how attention operates. Early-selection and dual-process models assume that distraction occurs in the beginning of the presentation. Late-selection and single-process models assume that distractors are continuously processed throughout the entire presentation. Load theory proposes that distractors are processed only after targets have been processed.

The mutations paradigm allows for direct and separate assessments of the temporal loci of targets' and distractors' processing. Results revealed that distraction occurred exclusively during the first 50 ms of presentation. After 50 ms, distractors' processing completely ceased, whereas target processing persisted until 200 ms after onset. In line with early-selection and dual-process theories, we conclude that distraction occurs exclusively before target selection, which consolidates at extremely early stages.

A-0521
STRATEGIC INFLUENCES IN POST-ERROR SLOWING

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Post-error slowing (PES) has been thought to reflect either an increase in cognitive control or a control failure. Using a cued-task-switching paradigm, the demand for top down control was manipulated. A third of the participants received dimension cues indicating the relevant stimulus dimension (e.g., „Fill Fill“) without specifying the response-category-to-key mapping, hence requiring considerable top down control; A third were shown mapping cues providing information regarding both the relevant task identity and its category-to-key mapping rules (e.g., „Empty Full“, requiring less top down control) and a third were given a mixed cue-type condition such that each task was consistently cued by one cue type. Larger PES was observed with dimension cues as compared with mapping cues. Moreover, this PES difference was not obtained when the two cue-types were intermixed. The results support the increased control position.

A-0522
GENDER TRANSPARENCY IN PROCESSING OF WRITTEN ITALIAN NOUNS

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In many languages formal regularities related to grammatical gender and involving both inflectional and derivational suffixes can be observed.

Based on these regularities, at least two different classes of nouns can be distinguished in Italian:

- Transparent nouns; they take highly predictive inflectional endings for gender (masculine nouns end in -o (alber-o, tree) and feminine nouns end in -a (cas-a, house)). Some exceptions to this regularity (non-transparent nouns) do exist: masculine nouns ending in -a (problem-a, problem) and feminine nouns ending in -o (man-o, hand).

- Opaque nouns; although unambiguous for gender, their gender cannot be recovered from surface form (both masculine and feminine nouns end in -e (pont-e (masculine) bridge; font-e (feminine) source)).

Four experiments (two reading aloud and two lexical decision tasks) were carried out in order to test the likelihood that Italian speakers exploit such features of gender marking system during lexical processing of bare nouns.

Results showed that transparent nouns are processed better than non-transparent nouns while, within the opaque class, no difference was detected between masculine and feminine nouns.

Results allow the conclusion that the lexical system is sensitive to both formal cues and distributional properties of grammatical categories in processing visually presented words.

A-0524
COMPARING AUTOMATIC AND CONTROLLED WORKING MEMORY UPDATING: AN ERP STUDY

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An ERP study was conducted in order to distinguish between the automatic and controlled aspects of working memory updating. To this end, we compared the sequential effects of repetitions and alternations in a 2-choice RT task vs. a 1-back task, using the same stimuli and responses. In addition to the behavioral measures, the P3 component served as an index of the updating process per se. A remarkable similarity was observed between the paradigms. RT was strongly determined by the sequence of the preceding conditions: RTs for alternations (namely, updating) were slower than for repetitions (no-updating). Both conditions were faster following repetition trials, compared to update trials. The P3 amplitude results reveal a parallel pattern, in which longer RTs were associated with smaller amplitudes. The main difference between the two paradigms was in conditions in which the 1-back task requirements led to inconsistent stimulus-response mappings, as compared to 2-choice RT. These results suggest that processes responsible to updating the content of working memory are relatively automatic, and operate even when updating is not part of the task requirements. Additional processes are required in updating tasks (e.g., n-back) in order to deal with post-updating response-conflict resolution.

A-0525
PREDICTION AND PRODUCTION OF SIMPLE MATHEMATICAL EQUATIONS

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An important issue in current psycholinguistics is the relationship between the production and comprehension systems. It has been argued that these systems are tightly linked, and that, in particular, listeners use the speech production system to predict upcoming content. We tested this view using a novel version of the visual world paradigm. Participants heard mathematical equations and looked at a clock face showing the numbers 1 to 12. On alternating trials they either heard a complete equation (3+8=11) or they heard the first part (3+8) and had to produce the solution (11, target hereafter) themselves. Participants were encouraged to look at the relevant numbers throughout the trial. On listening trials, the participants typically looked at the target before the onset of target name, and on speaking trials they typically looked at the target before naming it. However, the timing of the looks to the targets was slightly different,

with participants looking earlier at the target when they had to speak themselves than when they listened. This suggests that predicting during listening and planning to speak are indeed very similar but not identical. The further methodological and theoretical consequences of the study will be discussed.

A-0526

ON THE RELATIONSHIP BETWEEN EPISODIC FUTURE THINKING AND PROSPECTIVE MEMORY

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Which is the relationship between episodic future thinking (EFT) and prospective memory (PM)? In order to answer this question we assessed, in three Experiments, whether, and –if so– to what extent, future-oriented thoughts improve performance in a PM task. Our results showed that accuracy in the PM task performed on the second day were significantly higher when participants, on the first day, had mentally simulated the sequence of events expected to occur on the second day, including the PM task, than when they had performed control tasks. These data provide an important advance toward our understanding of the relationship between these two forms of future-oriented thoughts, as they extend the findings from research on implementation intentions by showing that when people imagine to perform strictly time-dependent actions with respect to the specific future context in which they will execute them, their chances of promptly performing the prospective actions increase significantly.

A-0527

DO INSERTED QUESTIONS WITHIN A TEXT IMPROVE OR HINDER LEARNING?

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Although interactive learning is trendy, little research has compared interactive to traditional passive reading. In three experiments, participants (N=108) read nonfiction passages, with inserted questions (interactive condition) or without questions (control condition). Questions in Experiments 1-2 were presented in multiple choice question (MCQ) format. In Experiment 1, questions addressed content in the succeeding paragraph, while in Experiment 2, questions addressed content in the preceding paragraph. Retention was tested one week later. In the interactive condition, half of the retention test items referred to information targeted by interrupting questions and half to non-targeted information. In Experiment 1, targeted content was recalled significantly more accurately than the control condition but accuracy for non-targeted content was significantly lower. In Experiment 2, accuracy for targeted content was equivalent to the control passages, but accuracy for non-targeted content was significantly lower than in control passages. Experiment 3 was identical to Experiment 1 except interrupting questions required short answers. Accuracy for targeted content was significantly higher but non-targeted content was equivalent to control passages. Overall, interactivity requiring attempted-retrieval (short answers) and not

recognition alone (MCQ) improved retention over passive reading for targeted content. These results indicate limitations and guidelines for interactive learning.

A-0528

THE EFFECTS OF EMOTIONAL AROUSAL ON VISUAL WORKING MEMORY

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Many studies over the past several years have demonstrated that emotional state has a modulatory role on visual cognition. Much of this research has been focused on examining visual perception or long-term memory following exposure to emotional stimuli, but the effect of such manipulations on visual working memory (WM) capacity is yet unknown. The present study aimed to better characterize the effects of emotional state induced by visually arousing materials on visual WM capacity for emotionally-neutral stimuli. Specifically, negative or neutral pictures were presented and followed by a single-probe visual change detection task. WM load was varied by manipulating the number of items to be remembered (set size of 4, 8, or 16 items). Cowan's K served as a measure of WM capacity. Surprisingly, the results indicate that under high visual load (i.e. set size of 16 items), the presentation of negative pictures critically hampers, rather than enhances, WM capacity. This finding is at odds with many studies indicating beneficiary effects of negative stimuli on visual perception, thus further demonstrating the complex nature of the interaction between visual cognition and emotion.

A-0530

THE REACH OF THE UNCONSCIOUS

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A great conceptual pendulum oscillates, with a period of about 30 years, over our understanding of the relationships between conscious and unconscious information processing. Its path delineates the contours of the unconscious mind as well as its contents: Sometimes smart and defining the very fabric of the mind, the unconscious is at other times relegated to taking care of little more than our bodily functions. At this point, the pendulum finds itself hovering rather steadily on the side of those who think so many functions are served by the unconscious that they even question the very role that consciousness plays in shaping the human mind. Here I will suggest that the pendulum has swung a little too far, and illustrate the argument with recent experimental findings that document how challenging it may be to arrive at a satisfactory conception of the relationships between conscious and unconscious information processing. A few general principles emerge from this skeptical analysis. First, the unconscious is probably overrated today. Second, there is a pervasive and continuing confusion between information processing without awareness and information processing without attention. I suggest that considering how learning and plasticity mechanisms modify conscious contents can reduce this confusion.

A-0532

MULTIMODAL CROSS-MODAL CORRESPONDENCES: AN INTEGRATED VIEW OF VISION, AUDITION AND ACTION.

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Authors have shown that the relation between the perceptual components of the stimulus influences participants' performance during categorization task. Moreover, this influence also depends on the compatibility between the motor potentiation evoked by the stimulus and the actual motor action (i.e., corresponding to participants' responses). We manipulated these two well-established cross-modal interactions (i.e., visual size and gesture, Tucker & Ellis, 2001; visual size and sound frequency, Evans & Treisman, 2010) in order to examine the relation between multimodal aspects of a given situation. Participants had to categorize visual objects according to their category (artificial or natural). Objects in each category could be either small or large and accompanied by a congruent tone (e.g., a high-pitched tone presented with a small object), an incongruent tone (e.g., a low-pitched tone presented with a large object) or without tone. Moreover, participants could respond with a size compatible gesture or an incompatible one. Regarding classic results in the literature, we could expect an interaction between the response gesture and the objects size but also an interaction between sound frequency and the objects size. Our results showed that both effects are integrated so that cross-modal correspondences are multimodal in nature.

A-0533

EFFECTS OF MNEMONIC SUPPRESSION ON DISTRACTOR PROCESSING

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In our environment we often encounter stimuli that may elicit the retrieval of memories we would rather not think about. Recent research has demonstrated that people can control the extent to which unwanted memories access consciousness via a process of active suppression, as demonstrated in the Think/No-Think paradigm. This mnemonic control process results in reduced accessibility to the unwanted memory in explicit recall. However it is unlikely that one would intentionally try to recall a memory that has previously undergone suppression. Here we investigated how mnemonic suppression affects the amount of conflict generated by cues to those memories whenever they are presented in an attentional task. Following Think/No-Think practice, suppressed, baseline and retrieved words were presented as distractors along with new target words in a Flanker task. We found that overall reaction times were reduced when No-Think items were presented as distractors in comparison to baseline items, and that this effect was limited to incongruent trials, indicating a reduction in the amount of conflict generated by No-Think items. Our results indicate that mnemonic suppression adaptively reduces the extent to which environmental cues to unwanted memories are processed.

A-0534

DOES BIGGER MEAN LOUDER? CROSSMODAL CONGRUENCY AND MEMORY JUDGMENT

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Authors have shown that the relation between the perceptual components of the stimulus influences participants' performance during perceptual categorization task. For instance, participants are faster at identifying the size of the stimulus when it is accompanied by a congruent tone (e.g., a small circle presented with a low-pitched tone, Evans & Treisman, 2010). This mutual relationship has been formalized as cross-modal congruency and could be observed at both semantic and perceptual levels. However, the role of this cross-modal relation during memory judgment is relatively less established. Brunel and collaborators (2010) shown that during typical size judgment from memory, participants automatically simulate auditory characteristics associated with an object. In their paper, they argued that large objects are more likely to simulate sound, as large objects are often associated with loud noise (i.e., cross-modal correspondence between size and loudness). Here we aimed at demonstrating that during typical size judgment from memory, participants could be influenced by the cross-modal congruency between the typical size of a concept and loudness of an accompanying tone. We found that participants were faster at judging typical object-size in congruent condition compared to the other conditions. This result brings support to Brunel and collaborators' statement.

A-0535

DEFICITS IN SHORT-TERM MEMORY FOR SERIAL ORDER IN ADULTS WITH DEVELOPMENTAL DYSCALCULIA: EVIDENCE FROM FMRI

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Verbal short term memory (STM) impairment is an associated and long-lasting deficit in developmental dyscalculia, but the nature of this impairment is poorly understood. Recently, a close association between numerical development and STM for serial order has been observed and has led to the hypothesis that STM for serial order and numerical abilities depend on common ordinal representations supported by the right intraparietal cortex. The aim of this fMRI study was to explore the neural correlates of STM for serial order in fifteen adults with a history of dyscalculia and a group of fifteen control subjects matched for age, education, IQ, and reading abilities. The participants were presented 6-letter sequences, and after a short delay, had to determine whether the serial order of two probe letters matched the order in the list. The dyscalculic group showed abnormally reduced activation in the right intraparietal cortex, and this specifically when judging letters from close serial positions, suggesting difficulties in processing fine grained ordinal information in STM. These findings demonstrate long-lasting alterations in neural networks associated with ordinal processing in STM for participants with dyscalculia and support the hypothesis of close links between serial order STM and numerical processing deficits.

A-0536

IMPAIRED INHIBITORY CONTROL IN ADHD: EVIDENCE FROM AN ERP STUDY

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The aim of our study was to compare inhibitory control (IC) performance of children with ADHD and typically developing (TD) controls. It was hypothesized that children with ADHD have pronounced deficits in response inhibition, but not in interference suppression.

Fourteen children diagnosed with ADHD, and fourteen TD children completed a modified Stroop task while event-related potentials (ERPs) were measured. Stimuli were pictures of two animals differing in real-life size. In the congruent condition, the larger animal was displayed as physically larger while in the incongruent condition it was physically smaller. The task was to select which animal was larger in real-life. The Lateralized Readiness Potential (LRP), used to identify different stages of IC, and ERPs associated with perceptual processing speed were analyzed.

Children with ADHD were slower to initiate a correct response irrespective of congruency, but there were no between-groups differences in accuracy. Neither group showed LRP effects in the congruent condition, but a negative-going LRP was present in both groups in the incongruent condition. Correct response preparation in incongruent trials, and also the latency of P1 and N2 were delayed in children with ADHD.

Our results partly support the hypothesis that children with ADHD have impaired response inhibition.

A-0537

ATTRACTIVENESS VS. STATUS CONTRAST: AN EYE-TRACKING AND DIVIDED VISUAL FIELD STUDY

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The evolutionary models of mating have emphasized the differences in mate preferences between women and men. While men place a premium on physical attractiveness of women's attractiveness, for women both physical attractiveness and status of men are important in mate selection process. The goal of the present study was to examine the effects of hemispheric asymmetry on judgements of the attractiveness of men and women figures with different attractiveness and status levels. Two experiments were conducted to determine (1) whether there was any gender differences in physical attractiveness-versus status-based evaluation, and (2) whether there was any hemispheric specialization in the assessment of physical attractiveness and the status of the figures.

In the first experiment, an eye-tracking technology was used to determine the differences between the patterns of the eye movements of the participants either in status assessment or in physical attractiveness assessment. In the second experiment, a divided visual field technique was employed to examine the gender differences in terms of hemispheric specializations of physical attractiveness and status evaluations. The results revealed a significant status and attractiveness effect on patterns of eye movements of the participants. The data obtained on hemispheric specializations were discussed in evolution of mate selection.

A-0538

THE ROLE OF FAMILIARITY AND IRREGULARITY IN RAPID LEXICAL ACCESS: EVIDENCE FROM TXT MSG SHORTCUTS

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Familiar acronyms such as 'BBC' access the lexicon and are processed like words despite their visual irregularity (Brysbear et al., 2009). However, masked priming studies suggest that prime stimuli without vowels (e.g., grdn-GARDEN), which are both irregular and unfamiliar, can also rapidly access the lexicon and prime related target words (e.g., Peressotti & Grainger, 1999). To further explore the effect of familiarity on visual word recognition the current study compared priming advantages for familiar (e.g., txt-TEXT) and unfamiliar (e.g., rsk-RISK) text message shortcuts, with the same degree of irregularity but differing in familiarity, to real words (e.g., text-TEXT) and a baseline condition (e.g., %%%-TEXT). Priming advantages for familiar shortcuts and real words were significantly larger than baseline, however, in contrast to previous research, priming was not found for unfamiliar primes (e.g., rsk-RISK). These findings suggest that familiarity is necessary for irregular stimuli to rapidly access the lexicon and are consistent with the view that irregular items are added to the lexicon if they are familiar (e.g., Brysbaert et al., 2009). Consequently models of visual word recognition that rely on familiarity and can accommodate irregularity (e.g., PDP models; Harm and Seidenberg, 2004) may be best placed to account for these data.

A-0540

BEESTS: SOFTWARE PACKAGE FOR THE BAYESIAN ESTIMATION OF STOP-SIGNAL REACTION TIME DISTRIBUTIONS

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The cognitive concept of response inhibition is often measured using the stop-signal paradigm. In this paradigm, participants perform a two-choice response time task where the primary task is occasionally interrupted by a stop-signal that instructs participants to withhold their response. The dependent variable of interest is the latency

of the unobservable stop response (stop signal reaction time or SSRT). Recently, Matzke, Dolan, Logan, Brown and Wagenmakers (2013) developed a Bayesian parametric approach that allows for the estimation of the entire distribution of SSRTs. The Bayesian parametric approach assumes that SSRTs are ex-Gaussian distributed and relies on Markov chain Monte Carlo sampling to obtain posterior distributions for the parameters of the SSRT distribution. Here we present a software implementation of the Bayesian parametric approach that can be applied to individual as well as hierarchical data structures. The application comes with an easy-to-use graphical user interface and provides users with summary statistics of the posterior distributions of the parameters as well various diagnostics tools to assess the quality of the parameter estimates. The software is freely-available and runs on OS X and Windows operating systems.

A-0541

INTUITION IN PROBLEM SOLVING: AFFECTIVE INFLUENCE ON METACOGNITIVE JUDGMENTS AND PERFORMANCE.

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Monitoring the internal dynamic of information processing can result in affective responses that in turn influence cognitive processes and behavior. In this study we explored the role of unconscious affect in metacognition and performance during problem solving. In the first experiment the "feeling of warmth" scale (FOW) was used in an attempt to find out if metacognition can be biased by affective stimuli that are not consciously perceived. 99 subjects were presented with peripheral affective pictures unrelated to their performance whilst solving problems. The results showed the metacognitive judgments were accurate but also modulated by affective stimuli: FOW increased after positive and decreased after negative stimuli. In the second experiment 124 subjects were presented with peripheral affective feedback about the solving progress. Even though subjects were not aware of feedback it enhanced performance. This effect was independent from subjects having to give metacognitive judgments.

The results show that problem solvers use affective responses to evaluate their performance and form metacognitive judgments. The results also support the view that progress monitoring can happen outside of consciousness and people can use its results to regulate their behavior without being aware of it.

A-0542

ALONE OR WITH SOMEONE ELSE IN THE LAB? INFLUENCE OF A SECOND PARTICIPANT IN A GO/NO-GO LEXICAL DECISION

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The goal of this research was to investigate whether a simple linguistic task, such as lexical decision, is affected by the presence of another person jointly performing the

task. Previous studies showed that, in a lexical decision task, nonword frequency (the frequency of the word from which the nonword was derived) had either null effects or negatively affected RTs, so that high frequency nonwords were responded to more slowly than low frequency nonwords. Such effect critically reversed in the case of a go/no-go task in which participants were required to respond only to nonwords. This difference was particularly evident in the first quantile of the RTs distribution (Perea et al. 2005).

In the Individual condition of the present study participants individually performed a go/no-go task, responding only when the stimulus was a nonword. In the Joint condition a second participant (confederate) joined the task and responded just to words. The results showed a modulation of the frequency effect in the first quantile according to condition so that high frequency nonwords yielded faster responses only in the Individual condition. Results are discussed in terms of task-sharing processes and time criteria. Keywords: Visual word recognition; Task sharing

A-0543

DISENTANGLING SHORT AND LONG-LASTING ATTENTIONAL INFLUENCES OF NEGATIVE AND TABOO SPOKEN WORDS IN THE EMOTIONAL STROOP PARADIGM

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Although the influence on attention of the emotional content of stimuli has mainly been considered at a within-trial level, recent studies revealed that the presentation of such stimuli would rather involve a slow or long-lasting attentional component (e.g., Bertels et al., 2011; McKenna & Sharma, 2004).

Here, we adapted the emotional Stroop to investigate both fast and slow attentional effects of negative and taboo spoken words.

Preliminary results indicate that the auditory presentation of an emotional (negative or taboo) word delays the processing of subsequently presented neutral words, but did not influence the processing speed of the emotional word itself, supporting that emotional words have slow, long-lasting (but no fast) attentional effects as demonstrated in our previous study. However, a closer look at the data suggests that participants habituate to these words such that, when considering the first and second halves of the trials separately, both fast and slow effects of emotional words are present in the first but not in the second part of the testing. These results underline the importance of considering interference and long-lasting effects of emotional stimuli, and the occurrence of an habituation phenomenon in studies investigating effects of emotional material on attention.

A-0544

LEXICAL AND MORPHOLOGICAL INFLUENCES ACROSS THE LANGUAGE BOUNDARY

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We explore the nature of cross-language influences in the lexicon of bilingual adult speakers of Hebrew and English. Hebrew has a root-based morphology, and morphological principles exert a strong influence on the lexical organization of native Hebrew speakers. The current study examined whether morphological principles of Hebrew are also apparent when native Hebrew speakers process English, their second and less proficient language. Participants performed semantic judgments on sentences in English, their L2. Sentence frames had high cloze probability, and consequently a highly-expected sentence final word. We compared overt responses and brain activity of participants to incongruent sentence final words that shared a translation in Hebrew with the expected sentence final word, shared a morphological root in Hebrew with the expected sentence final word, or were unrelated. Results showed that participants were sensitive to the cross-language mapping of the targets – they were more likely to erroneously rate a sentence as acceptable in English when the word creating the anomaly shared a translation with the acceptable word in Hebrew, or was morphologically related to it. The results support integrated models of the bilingual lexicon, and extend previous findings of cross-language lexical and semantic influences to include morphology as well.

A-0545

SKILLED READING PROFICIENCY AND PARAFOVEAL LEXICAL ACTIVATION

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Evidence from eye movement studies suggests that the lexical status of the preview of an upcoming word does not affect the duration of fixation it subsequently receives. This is consistent with the claim that, although orthographic and phonological information is extracted from words before they are fixated, parafoveal information is not processed lexically. The present study investigated whether this is true of all readers. We used the boundary paradigm to manipulate the parafoveal preview of low frequency target words embedded in sentences. The preview of the target was either identical, a higher frequency neighbor (HFN) word, a nonword neighbor, or an all-letter-different nonword. Participants were assessed on measures of reading comprehension and spelling ability. The average results showed no effect of preview lexicality. However, this null result obscured significant interactions between reader proficiency and target neighborhood density (N) on early fixation measures. Less proficient readers showed facilitation from a HFN preview regardless of target N while more proficient readers showed facilitation for low N targets but inhibition for high N targets. These findings suggest that highly proficient readers show sensitivity to lexical competition earlier than average readers when orthographic information in the parafovea is consistent with many words.

A-0546

EFFECTS OF SURVIVAL PROCESSING ON VULNERABILITY TO MISINFORMATION

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The aim of the present study is to examine whether memory illusions produced through the misinformation paradigm are affected by survival processing. For that purpose, a neutral story was translated and adapted from Seamon et al. (2012), and 20 target and 10 control words were chosen. Participants rated the 20 target words for either relevance to moving, or survival or their pleasantness. Following a distractor task, half the participants read the original story again while the other half read the misinformed version, in which the critical words were replaced. After another distractor task, participants were given a surprise recall test. We predicted higher correct recall and lower false recall for participants in the survival condition. While the results showed a main effect of misinformation for both correct and false recall for all conditions, the hypothesized survival advantage was not observed. On the contrary, for the target words, false recall rates were higher for the survival condition than the moving condition. This unexpected survival disadvantage has been demonstrated before for associative and categorical memory illusions, but the present study is the first to show this effect in a misinformation paradigm. Further studies are planned to understand the nature of this effect.

A-0547

NUMERICAL PROCESSING IN BILINGUALS IS INFLUENCED BY THE STRUCTURE OF NUMBER WORDS IN BOTH LANGUAGES

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The current study explored how the structure of number-words in a language might affect numerical processing in Arabic-Hebrew and Hebrew-English bilingual university students. Number-words in Arabic are characterized an inversion of the order of tens and units in two-digit number words (“24” is said “four and twenty”); whereas Hebrew and English number-words are not inverted. Participants solved addition problems presented visually in numeric notation or aurally in their first language (L1) and second language (L2). The order of the addition problems was manipulated so that it matched or did not match the structure of number-words in the language. Native Hebrew speakers were faster to solve addition problems that matched the structure of number-words in their native language, regardless if they were presented visually or aurally, in the L1 or the L2. Conversely, native Arabic speakers did not show a preference for a specific order of presentation in any of the presentation modes, most likely because they speak two languages that differ in number-word structure. These results extend previous studies and demonstrate that bilinguals are affected by the structure of number-words in both their languages when processing numeric information.

A-0548

TASK SHARING CAN CHANGE THE FATE OF TASK IRRELEVANT INFORMATION: EVIDENCE FROM THE JOINT PICTURE-WORD INTERFERENCE PARADIGM

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The joint version of the picture-word interference (PWI) paradigm was employed to investigate how people can deal with the task irrelevant information when they share an interference paradigm with another person. Participants performed the PWI paradigm, which requires to name a picture while ignoring a distractor word, both individually (baseline) and co-acting with an alleged partner (joint task). Results showed that, compared to the baseline and to a control condition in which participants continued to perform the PWI individually, the belief of co-acting with another individual suppressed the semantic interference effect (i.e., slower naming times for semantically related picture-word pairs) when the co-actor was thought to be in charge of the distractor words but not when s/he was thought to work on the same stimuli (pictures) as the participant. Task sharing was effective in eliminating the semantic interference effect only when written word recognition was made more difficult by presenting distractor words in case alternation letters (mOuSe). These results can be explained by assuming that the information about the co-actor's task in a context of impaired word recognition would provide participants with an effective strategy to ignore the task irrelevant information when another person is in charge of this information.

A-0549

DO EXTERNAL MEMORY AIDS ONLY HELP US TO REMEMBER LESS EMOTIONALLY IMPORTANT ACQUAINTANCESHIPS?

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According to the social brain hypothesis, developed by Robin Dunbar, a person's acquaintances form concentric circles. As the number of alters in each layer of the personal network increases, the level of emotional intimacy and level of interaction between ego and alter decrease. The two inner layers consist of the closest relationships. We studied how the type of name generator as well as availability of external memory aids influences the recalled social network's size and relationship quality. In our experiment we pitted against each other different existing name generators that are used in ego-centered network research. We also manipulated the availability of external memory aids (mobile device phonebook) in recalling alter names. Based on our results, the size of the Dunbarian inner circles is robust and insensitive to the use of different name generators. We also found that electronic phonebook as external memory aid external memory aid contributed 11.0% of all connections (M=2.1 out of M=17.4 alters), however these connections are significantly ($p < 0.01$) less important emotionally (closeness M=5.0; 18.5% support-

group members) than those reported without aid (M=6.0; 41.8%). This suggests that external memory aids might only help us widen our social network towards the emotional periphery. Supported by TÁMOP-4.2.2.C-11/1/KONV-2012-0008.

A-0550

DOES RARE ERROR COUNT IN IMPULSIVITY? DIFFERENCES IN ERROR-RELATED ERPS

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The aim of this study was to investigate whether error processing is extensively impaired in high trait impulsivity, or it is modulated by the required effort level of the task. Adults were classified as high ($n = 12$) and low ($n = 12$) impulsive participants based on the Barratt Impulsiveness Scale, and they participated in a modified flanker task. The flanker trials had three levels of required effort manipulated by visual degradation of the stimuli (removing 0%, 80% or 90% of the pixels). The two groups did not differ in accuracy and in erroneous reaction time, however highly impulsive participants were slower to initiate a correct response. The frontocentral error negativity (Ne) ERP component was reduced in the high impulsive group compared to controls independent of the required effort. On the other hand, the central error positivity (Pe) peaked later in the low impulsive group. Our results indicate that the detection of errors in high trait impulsivity is impaired, however the compensatory evaluation is intact and faster than in low impulsivity. The lack of effort effects does not support the role of energetic pools in error processing. Keywords: ERP, executive functions, impulsivity

A-0551

THE PROCESSING OF SYMBOLIC AND NON-SYMBOLIC NUMERICAL RATIOS

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Psychological Sciences Research Institute

This study investigated the processing of numerical ratios. More particularly, we studied the impact of the symbolic notation on that processing in school-age children and adults. Nine- and eleven-year-olds, as well as adults, were asked to estimate the magnitude of fractions (symbolic stimuli) and the numerical ratio between dot collections (non-symbolic stimuli). For the non-symbolic stimuli, the ratio of surface areas did or did not co-vary with the numerical ratio (respectively, homogeneous-dot and heterogeneous-dot conditions). The results showed that, compared to the heterogeneous-dot condition, performance on fractions was similar in 9-year-olds, and better in 11-year-olds and in adults. Furthermore, performance was better in the homogeneous-dot than in the heterogeneous-dot condition, indicating that the participants relied, at least in part, on the ratio of surface areas in the former condition. These results suggest that, in children as young as 11-year old, the mental representation of the ratio magnitude is more accurate when it is activated from symbolic stimuli, and that the processing of non-

symbolic numerical ratios is costly enough in terms of time and/or resources to be affected by non-numerical ratios. The theoretical and methodological implications of these results will be discussed.

A-0552

THE IMPLICIT PROCESSING OF BELIEFS: TOWARD AN UNDERSTANDING OF ITS TRIGGERING CONDITIONS

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Psychological Sciences Research Institute

This study investigated the processing of beliefs, i.e. the computation we do to represent what someone else knows about one aspect of the reality. We tested whether adults “compute” the belief of a social agent even when this processing is irrelevant for their current task and when their attention is not focused toward this person. Participants were shown animated videos in which an avatar threw a ball toward one location, the ball moved, and the avatar went out of the room after or before the ball had reached its final location. Accordingly, the avatar’s belief about the ball location was respectively true or false. The participants were required to track the ball location. The results showed that they responded to the ball location slower in the false than in the true belief condition. This suggests that they “computed” the avatar’s belief, at least, at an implicit level, and that this representation of the belief interfered with the judgment about the ball location when the belief was false. This study has shown that the processing of beliefs occurs during an active monitoring of the reality and that the relevance of the agent for ongoing cognitive goals is not necessary.

A-0553

TMS OVER FINGER MOTOR CORTEX IMPAIRS NUMBER PERCEPTION

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Embodied cognition predicts that number processing is influenced by finger representations for counting. Thus stimulating the hand primary motor cortex (MC) with transcranial magnetic stimulation (TMS) should affect number recognition. We investigated whether this effect depends on the congruency between stimulation site (left vs. right MC) and finger counting habits (i.e. starting to count with right vs. left hand) We tested 21 adults presented with masked digits from 1 to 9 (excluding 5). In half of the trials, 220 ms after digit onset single-pulse TMS was applied over the left or right MC in separate blocks. In the other half, with the coil in the same position no pulse occurred (control condition). Participants verbally reported the digit and the answer was entered manually by the experimenter. Participants’ accuracy was analysed by means of repeated measures ANOVA with stimulation type (TMS/control), congruency between stimulated hemisphere and hand used to begin counting (congruent/incongruent) and digit size (larger/smaller than 5) as within-subjects variables. We found that cortical stimulation congruent with finger counting representation significantly affects digit

recognition of small numbers, with lower accuracy in the TMS as compared to the control condition. These results confirm and extend previous work on embodied number representations.

A-0554

HOW HUMAN INFANTS DISCOVER AND REPRESENT SOCIAL STRUCTURES: THE CASE OF SOCIAL DOMINANCE HIERARCHY

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Infants learn about social partners and their relations by observation. We investigated whether they are also interested in the way social groups are structured. In a series of looking-time studies, we demonstrate that infants recognize social dominance relations and organise them in hierarchies. Our data indicate that 15-month-olds (N = 128) represent social dominance as a stable dyadic relation (Studies 1 and 2). Once infants have recognized several dominance relations, they attempt to combine them into unified structures, as shown by their poorer memory for relations whose representation in a single structure is hindered (Study 3). Infants also process better linear than circular dominance structures (Study 4). Infants thus use two heuristics to address the difficult problem of recognizing social structures: problem decomposition, and prior expectations about the shape of structures. These heuristics rely on formal processes never evidenced in infancy before, such as an expectation of transitivity. Our findings indicate that the crucial capacity to build complex structures from simpler ones is utilized early by infants to discover social dominance hierarchies.

A-0555

WORKING-MEMORY UPDATING TRAINING IN YOUNGER AND OLDER ADULTS: TRAINING AND TRANSFER EFFECTS

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Executive control declines with cognitive aging. However, open issues in the aging literature are whether (1) such decline can be compensated with training, and (2) training of one executive control aspect transfers to other aspects. Therefore, the present study investigates whether (1) it is possible to improve working-memory (WM) updating skills with training in form of a complex visual-auditory WM task in older adults (mean age = 66.5 years) in contrast to younger adults (mean age = 24.4 years), and (2) whether this improvement transfers to untrained WM tasks, as well as to tasks of the task switching, dual-task, and attentional-blink type. The results showed that WM updating training improved performance in the trained task in older as well as younger adults (however, with an increased training benefit in younger adults). In addition, there were transfer effects to a visual version of an untrained WM task, aspects of task maintenance in the task switching as well as attention switch in the attentional blink paradigm. We discuss these findings in the context of aging and executive control literature.

A-0556

EYE MOVEMENT STRATEGIES FOR VISUAL-SPATIAL MEMORY ENCODING

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There is a strong link between eye movements and spatial attention. This might imply a beneficial role of eye movements for visual-spatial memory encoding. Here we report two experiments demonstrating the opposite (Lange & Engbert, QJEP, in press). In the first experiment participants were free to move their eyes without any specific instruction. Eye movements were recorded during sequential presentation of digits at different locations on the screen. Either digit identities (verbal task) or digit positions (spatial task) had to be encoded for serial recall. Whereas the gaze followed the items in the verbal task closely, fixation probabilities on items decreased dramatically in the spatial task. Moreover, during spatial encoding saccadic amplitudes were reduced and saccadic reaction times prolonged. Results indicate saccadic suppression at spatial encoding. In a second experiment participants were instructed to either follow each upcoming stimulus closely or to fixate centrally. Saccadic activity interfered with spatial as well as verbal memory, showing strong dual-task costs. Saccadic suppression did not affect memory performance at all. Hence, effects for voluntary and involuntary encoding strategies differ. But eye-movements clearly do not support spatial memory encoding.

A-0557

DOES THE ISPC EFFECT INTERACT WITH THE SOA BETWEEN RELEVANT AND IRRELEVANT STROOP DIMENSIONS?

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The aim of the present study is to investigate the Item-specific Proportion Congruency (ISPC) effect by manipulating the stimulus onset asynchrony (SOA) between relevant (color) and irrelevant (word) dimensions. The ISPC effect is demonstrated by a smaller Stroop interference for mostly incongruent items compared to mostly congruent items. There is a continuing debate on whether control processes or stimulus-response learning is involved in the ISPC effect. Proponents of the control account emphasize the importance of using the relevant dimension as a signal for proportion congruency. We hypothesized that manipulating the onset of relevant and irrelevant dimensions might influence which dimension is picked out as a signal for proportion congruency. To do that, we used a 4-item-set design, in which there were no high contingency responses for incongruent trials. Stimuli consisted of a color patch and a color-word in the middle. Participants named the color of the patch. SOA between the relevant and the irrelevant dimensions was -200, -100, 0, 100 or 200 ms. Results of preliminary analysis (N=22) showed a significant ISPC effect for all SOA blocks, except for the 200ms condition, suggesting that SOA differences, indeed, interact with the ISPC effect. Final analyses will be reported for N=50.

A-0558

HOW TO MEASURE PROBABILISTIC SEQUENCE LEARNING AND ITS CONSOLIDATION?

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Sequence learning can be differentiated according to phases (rapid and slower), modalities (perceptual and motor), and whether or not it is conscious (implicit and explicit). Implicit sequence learning occurs when information is acquired from an environment of complex stimuli without conscious access either to what was learned or to the fact that learning occurred. In everyday life, this learning mechanism is crucial for adapting to the environment and for predicting events unconsciously. Implicit sequence learning underlies not only motor, but also cognitive and social skills; it is therefore an important aspect of life from infancy to old age. Moreover, this kind of learning does not occur only during practice, but also offline, between practice periods. Understanding the multiple aspects and influencing factors of consolidation can help us to reveal the nature of memory and changes in brain plasticity. Our talk focuses on how consolidation varies with factors such as awareness, the length of offline periods, the type of information to be learned, and the age and functional status of participants (e.g., Mild Cognitive Impairment, MCI). We highlight that consolidation is not a single process; instead, there are multiple mechanisms in the offline period, which are differently influenced by these factors.

A-0559

PROCESSING SYMBOLIC AND NON-SYMBOLIC ORDINAL INFORMATION: IS IT AN ACQUIRED ABILITY?

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Few studies in the field of numerical cognition have focused on representations of ordinal relationships despite the fact that order is a hallmark feature of numbers. In the current study, three groups of children, ages 5-6, 6-7 and 8-9, made "ordered" or "non-ordered" judgments about three groups of dots (non-symbolic stimuli) or numbers (symbolic stimuli). The ratio between numerals and the direction of the sequence (ascending or descending) was also manipulated. Findings indicate that children from the age of five are able to process numerical ordinality without extracting information such as representation of precise quantity. In the non-symbolic task; response to ordinal sequences was significantly more accurate and modulated by direction (i.e., compatible with the Hebrew writing system right to left direction, the ordinal descending direction was processed more accurately) in all groups. The effect of ratio was significant only in the 8-9 years old group. In the symbolic task: the ordinality effect was significant only in the 8-9 years old group. Findings suggest that there might be two separate cognitive representations of ordinal and quantity information and that linguistic abilities may facilitate estimation of ordinal information, supporting Rubinsten and Sury's model regarding three stages to ordinal processing.

A-0560

IMAGERY, STRESS, AND RISK PERCEPTION: THE ROLE OF AFFECT-LADEN IMAGERY IN RISK PERCEPTION.

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The aim of this study was to provide empirical support for the relation between the intensity of mental imagery of risk consequences, affect and risk perception. Loewenstein, Weber, Hsee, & Welch (2001) proposed in their risk-as-feelings hypothesis that affect-laden imagery can influence risky decision making. However, little evidence has been collected so far to prove this assumption. In three experiments we investigated how emotional reactions evoked by mental images of risk consequences influence risk perception.

In Experiment 1, we recorded EEG activity of 17 participants who were instructed to imagine negative consequences of risky decisions. As we predicted, intensity of mental imagery measured through the attenuation of alpha band power registered in occipital sites correlated negatively with willingness to take risk but only among highly reactive participants. In Experiment 2 we found that more negative risk-related thoughts led to lower risk assessment and this relationship was fully mediated by stress level associated with risk images. Experiment 3 showed that imagining negative risk consequences was related to higher blood pressure and stronger self-reported stress. Moreover, declared stress level mediated the relationship between the intensity of mental representation of risk and risk perception.

We demonstrated that affect-laden imagery might influence risk perception.

A-0562

REALIGNING THUNDER AND LIGHTNING: TEMPORAL ADAPTATION TO SPATIOTEMPORALLY DISTANT STIMULI

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Is the brain able to realign asynchronous visual and auditory signals in absence of spatiotemporal proximity? We addressed this question by exposing participants to visual and the auditory stimuli that were separated by 706ms and appeared either from the same (Experiment 1) or from different spatial positions (Experiment 2) for 3 min. A simultaneity judgment task (SJ) was administered right afterwards. Temporal realignment between vision and audition was observed, in Experiments 1 and 2, when comparing the participants' SJs after this exposure phase with those obtained after a baseline exposure to audiovisual synchrony. However, this effect was present only when visual stimuli preceded auditory stimuli during the exposure to asynchrony. Similar results (temporal realignment after exposure to visual-leading asynchrony but not after exposure to auditory-leading asynchrony) were obtained using temporal order judgments (TOJs) instead of SJs (Experiment 3). This pattern of results

suggest that temporal recalibration still occurs for visual and auditory stimuli that fall clearly outside the so-called temporal window for multisensory integration and appear from different spatial positions. This temporal realignment may be modulated by long-term experience with the kind of asynchrony (vision-leading) that we most frequently encounter in the outside world.

A-0563

REGULARITY AND FREQUENCY EFFECTS ON PLURAL PROCESSING IN SPEAKERS WITH APHASIA: A CROSS-LINGUISTIC STUDY

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This study looks at the effects of regularity and frequency on noun plural production in aphasic native speakers of Australian-English and German, two languages with a different plural paradigm.

Using a case-series design, two Australian-English aphasic men named closely matched subsets of pictures of high- and low-frequency regular versus irregular items. Performance of plural forms was compared to its corresponding singular targets within each subset. The same experimental task was used with German stimuli sets and applied to two German aphasic men. All aphasic participants suffered from word finding difficulties in production.

All participants showed an overall plural disadvantage for regular items. The effect disappeared when the high-frequency subset was analyzed separately, but was maintained when the low-frequency set was considered only.

No such plural disadvantage was observed for the irregular subsets for both Australian, and one German participant(s). One German participant, however, showed an irregularity effect on his number processing (singulars > plurals). Results indicate at least two different mechanisms of plural processing for both languages. The need for shared-language and language-specific components within a theory of morphological processing will be discussed.

A-0564

COGNITIVE CONTROL TRAINING WITH YOUNGER AND OLDER ADULTS: THE ROLE OF INHIBITION- AND MEMORY- RELATED PROCESSES IN THE TRAINING AND TRANSFER EFFECTS OF TASK SWITCHING

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Aging is characterized by functional and structural changes in the nervous system which are related with a decline in performance on many behavioral measures of cognitive functioning such as working memory, reasoning and dual tasking. A candidate training task which is thought

to improve important processes affected by aging is the task switching paradigm which has already shown to be a promising approach demonstrating broad transfer effects beyond trained tasks (Karbach & Kray, 2009). The present study aimed to identify what processes are actually trained and facilitate transfer across task domains when participants take part in a task switching training. To this end we manipulated memory load and inhibition load in four task switching groups and compared performance improvements in a pretest-training-posttest design to an active control group. Preliminary results indicate reductions in switching-related performance costs in both age groups. For younger adults transfer effects seem to be dependent merely on the switch demands in general imposed by the switching situation whereas older adults seem to benefit more from task switching training involving high inhibition load.

A-0565

READING PATTERNS IN NON-NATIVE AND BILINGUAL READERS: SEMANTIC EFFECTS

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Sentence reading behavior may vary dramatically as a function of language background. Characterizing such differences is a prerequisite before more subtle manipulations can be examined. The current study set out to measure eye-movement patterns as participants read English sentences that varied in the degree of semantic anomaly. We compare reading patterns of 30 English-Spanish (ES) bilinguals, 30 Spanish-English (SE) bilinguals, and 30 English monolingual (EM) controls. These comparisons allow us to dissociate differences associated with bilingualism versus monolingualism (EM vs. ES) from those that are linked to reading in a native versus non-native language (ES vs. SE). We further collected individual difference measures including non-verbal intelligence and working memory span, as well as subjective and objective measures of English proficiency. Preliminary results suggest that even in natural sentences, non-native readers exhibit longer fixation durations and fewer skips than native readers. The findings will shed light on the role of language background in reading behavior, and more generally on the interplay between participants' individual differences in language and cognitive skill and stimulus lexical and semantic characteristics.

A-0566

DOES LOW SPATIAL FREQUENCY INFORMATION REALLY HAVE A PREFERENTIAL ROLE IN EMOTIONAL FRONTAL INHIBITION?

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According to a recent cognitive model of perception, top-down prefrontal control allows to specifically orient attention to an emotional stimulus, facilitating its identification and reducing the conflict that might occur with other stimuli in the scene. Because cognitive tasks normally used to explore emotion recognition do not require executive functions, it remains unclear whether or not a top-down process can modulate the identification of an emotional object at a functional level. In order to disentangle between these two possibilities, we designed a priming emotional Stroop task in which participants had to identify Emotional Facial Expressions (EFE) presented along with a congruent or incongruent emotional word. To further explore the possibility that top-down control in emotion recognition depends on the early activation of the prefrontal cortex, we primed the EFE during 51 ms. with the same EFE, but filtered in Low (LSF) or High (HSF) Spatial Frequency. LSF information only is able to rapidly reach high-order areas in the prefrontal cortex. Our results reveal a reduction of the Stroop effect in the LSF compared to the HSF priming condition, which supports the existence of a top-down control during emotion recognition, and that this control depends on LSF information extraction.

A-0567

COGNITIVE PERFORMANCE DURING ANTARCTIC OVERWINTERING

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We measured reaction time and event related potentials (ERP) of the brain by using auditory distraction paradigm and Attention Network Test (ANT).

The crew spent a full year at the Antarctic station. Measurement sessions took place every six weeks (7 sessions).

Six months after their return 6 subjects completed an additional post-deployment baseline measurement session. In the distraction paradigm the amplitude of P3(b) was lower in the first two sessions compared to the rest of the measurements. Reaction time decreased from the first session till the third session and from the last session to the baseline session. In the ANT task the reaction time was decreasing from session 1 until session 5, but for session 6 and 7 smaller performance decrement was present. In the no-cue condition, 300 ms after stimulus onset a negative ERP component increased on central channels and a positivity decreased on parietal leads from the first three sessions to the last ones. A frontal positivity with 180 ms latency was increasing in the central cue condition and a parietal negativity with 200 ms latency was decreasing in central and spatial cue conditions through the year. These results are interpreted in the context of practice and adaptation.

A-0569

THE TRANSFERENCE OF VISUAL SCANNING BEHAVIOUR BETWEEN TWO UNRELATED TASKS: MEASURING THE CHARACTERISTICS OF CARRY-OVER

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Task performance is influenced by the allocation of visual attention, and models of scanning behaviour have attempted to predict search (and performance) by accounting for top-down and bottom-up processes. Although such models acknowledge an additional influence of previous experience with the same or similar task, recent work has shown that search can be affected by a preceding, unrelated task. An experiment was conducted to explore this 'carry-over' of scanning behaviour to examine whether time spent on the initial task influences the magnitude of the effect, and how quickly the effect dissipates across the course of the second task. Thirty participants completed simple letter searches and were then asked to search a

picture of a natural scene. Eye movements were recorded to the picture search and, consistent with previous findings, the spatial layout of letters influenced spread of search in the pictures. The magnitude of the effect did not vary according to the time spent engaging in the initial task, however the effect diminished relatively quickly. The results have implications for dynamic tasks in which performance is closely related to search (i.e. driving), and imply that predictions of search behaviour could be improved by accounting for the influence of carry-over.

A-0570

A HEMISPHERIC INVESTIGATION OF SEARCHING FOR THE THREATENING FACIAL STIMULI AMONG DISTRACTERS

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The present study examined hemispheric lateralization in preferential activation of cognitive mechanisms in response to threatening stimuli. The early and faster detection of threatening stimuli is closely associated with a defense mechanism, which is likely to be acquired through the evolutionary process of the human mind. In this respect, crowd of human faces with emotional content were used to provide ecologically valid stimuli, and a Finding the Face in the Crowd task was adopted to investigate the mechanism. Behavioral and eye tracking data indicated early attentional capture of faces with a threatening expression (i.e. anger), which were presented among distracter faces, and longer attentional allocation of faces with a threatening expression, which were used as distracters. A visual field bias for detecting threatening faces in crowds was investigated in two follow up experiments by adopting divided visual field methodology and flicker paradigm of change detection. The results were evaluated on the basis of two prominent hypotheses on differential hemispheric specializations in processing of facial emotions: Right Hemisphere hypothesis and Valence-Specific hypothesis. A hemispheric bias in the detection of threatening faces among crowds would provide new perspectives towards understanding of the cognitive mechanisms based on the processing of threatening stimuli.

A-0571

THE EFFECT OF ATTENTION ALLOCATION ON LETTER TRANSPOSITIONS IN READING

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Letter Position Dyslexia (LPD) is a reading deficit caused by a selective impairment to letter-position-encoding. Such impairment results in letter-transpositions within words (for example, reading the word TRAIL as TRIAL). It has been suggested that individuals with LPD tend to allocate attention to the words' medial letters collectively, causing incorrect conjunctions of letters and positions (Friedmann & Gvion, 2001; Friedmann & Rahamim, 2007; Kohnen et al., 2012). This study tested whether allocation of attention to the word's periphery, at expense of the medial letters, has the power to generate letter-transpositions in normal readers. In order to manipulate the allocation of attention,

migratable words (i.e., words in which transposition of middle letters creates another existing word) were presented between a pair of brackets. In one condition the participants were asked to first judge the similarity of the brackets and then read the word, and in the other condition they read the word while ignoring the brackets. The results were that the bracket condition induced a significantly higher rate of letter-transpositions than the other condition, reaching a rate that is comparable to the diagnosis of LPD. These results suggest that processes governed by allocation of attention are involved in LPD.

A-0572

NEURAL NETWORKS SUPPORTING EXPLICIT GOAL-DIRECTED BEHAVIOR: A CENTRAL ROLE OF THE POSTERIOR TEMPORO-PARIETAL JUNCTION

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Goal-directed behavior requires building associations between a certain situation, a certain action and the resulting effect, thereby enabling flexible response selection in different situations according to the anticipated goal state. In contrast, stimulus-based behavior relies on associations between a certain situation and a certain action without effect anticipation.

In the present fMRI study we directly manipulated the degree of explicit goal-directedness through instruction using non-incentive visual effects that appeared contingently if a certain response was produced in a specific situation.

We compared an effect-based condition where subjects were explicitly instructed to produce a specific effect color to an otherwise identical stimulus-based condition where stimulus-response mappings were instructed and added a control condition with random effects.

A cluster in the right posterior temporo-parietal junction (pTPJ) comprising the angular gyrus showed stronger activity whenever effects were contingent on actions, while the actual integration of effects into response selection was associated with stronger functional coupling between the right pTPJ and caudate head, hippocampus, cerebellum, rostralateral prefrontal cortex and orbitofrontal cortex. Together, these results suggest that explicit goal-directed behavior is accompanied by increased functional connectivity between pTPJ / angular gyrus, involved in computing action-effect contingencies, and areas related to different aspects of goal-directed behavior.

A-0573

WHEN PLANNING RESULTS IN LOSS OF CONTROL: INTENTION-BASED REFLEXIVITY AND PROACTIVE CONTROL

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In this talk, the authors discuss the seemingly paradoxical loss of control associated with states of high readiness to execute a plan, termed "intention-based reflexivity". The framework suggests that the neuro-cognitive systems involved in the preparation of novel plans are different

than those involved in preparation of practiced plans (i.e., those that have been executed beforehand). When the plans are practiced, intention based reflexivity depends on the prior availability of response codes in long-term memory. When the plans are novel, reflexivity is observed when the plan is pending and the goal has not yet been achieved. Intention-based reflexivity also depends on the availability of working memory limited resources and the motivation to prepare. It is further argued that intention-based reflexivity may characterize a special form of control, called "proactive control" which reflects a highly focused state that is, hence, relatively rigid and insensitive to rapid contextual changes.

A-0574

PICTORIAL SPACE PERCEPTION, BODY SWAY AND EYE MOVEMENTS

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The present study investigated the postural response to images differing in the degree to which the spatial reference for a human silhouette was defined. Each subject viewed two images, one with a silhouette against an empty background and one with the silhouette in a perspectival, either pictorial or schematic layout. The body sway measurement was combined with eye movement registration in order to identify postural sway when fixating a specific area of interest, i.e. silhouette or background.

During observation of the image where the human silhouette was presented against an empty background the surface of the Centre of Pressure trajectory (CoP) increased and average speed of sway was higher than when viewing the perspectival images which suggests a stabilising effect of perspective on body sway. Moreover, fixation time on the empty background correlated positively with the antero-posterior sway whereas a negative correlation was found between the fixation time on the silhouette and the antero-posterior sway. The results are discussed in terms of an interaction between the quality of depth cues, patterns of eye movements during exploration of the spatial layout and body sway.

A-0575

SELF-INITIATED MOTION IS PERCEIVED AS SLOWER THAN EXTERNALLY INITIATED MOTION

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Self-initiated action effects are often judged to be less intense (e.g. less loud, less ticklish, less forceful) compared to identical but externally generated stimuli. This is normally explained in terms of forward models within the sensorimotor system which attenuate predictable action effects. In the present study, we investigated if and how action effect prediction influences the perception of visual motion. In Experiment 1, participants judged the speed of moving stimuli that were either triggered by self-paced keypresses, another person's keypresses, or by computer. Self-initiated motion was judged to be slower than motion initiated by another person or the computer.

In order to make the conditions more similar with respect to temporal predictability, in Experiment 2 we repeated the comparison for actions cued by go signals. This time, self-initiated motion was judged the slowest, computer motion the fastest, and motion initiated by another person was in-between. In Experiment 3, attenuation of self-initiated motion was found to be dependent on predictable action-effect contingencies. We conclude that attenuation of perceived speed is influenced by a combination of private motor information and a predictable distal action effect.

A-0576

FUNCTIONAL IMAGING STUDIES OF EXECUTIVE FUNCTIONS IN NORMAL AND PATHOLOGICAL PROCESSES OF AGING: A QUANTITATIVE META-ANALYSIS

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There is a wealth of evidence that executive functions decline with healthy and pathological processes in adult development. Functional neuroimaging studies of executive function, however, showed altered patterns of brain activity in healthy older adults and different stages of neurodegeneration. We conducted a systematic examination of the neuroimaging literature, using activation likelihood estimation (ALE) meta-analytic method, to investigate quantitative differences of brain activation during executive controls in normal and pathological aging groups. ALE analyses were based on 59 independent neuroimaging studies in young adults, healthy older adults, Mild Cognitive Impairment (MCI), and Alzheimer's disease (AD) performing tasks related to executive controls. ALE results indicate differentiated patterns of neural response in normal and pathological cognitive aging. Specifically, healthy older adults showed more bilateral fronto-parietal activity but reduced temporo-occipital activity compared to their younger counterparts. In contrast, MCI and AD showed decreased activity in anterior regions of the aging brain, with reduced recruitment of dorsolateral prefrontal cortex in MCI and ventrolateral prefrontal cortex in AD. The results suggest that (1) normal and pathological aging differ in the neural mechanisms underlying executive controls, and (2) functional brain changes during executive functioning at different stages of neurodegeneration may depend on distinct controlled processes.

A-0577

DIFFERENTIAL SENSITIVITY TO MORPHING IN FACIAL JUDGMENTS OF TRUSTWORTHINESS, DOMINANCE AND GENDER

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People make fast and easy judgments on trustworthiness using facial features, and these impressions influence their decisions in social situations. According to studies using both real and artificial faces, judgments are highly correlated between different individuals. Our aim was to create a well-controlled yet least artificial stimulus material to investigate perception of trustworthiness. Using faces from Karolinska database we created morphs along three dimensions between highly trustworthy/dominant/male and highly untrustworthy/submissive/female faces, forming a smooth transition along the three dimensions. We found linear relationship between trait perception and morphing-rate in the dimension of dominance and gender. However, morphed faces with higher proportion of the trustworthy face are perceived similarly or even more trustworthy than the original trustworthy face. The phenomenon is more pronounced in male faces. Female morphs (containing 83.4% of a trustworthy face and 16.6% of an untrustworthy face) are perceived similarly trustworthy as the original trustworthy face ($M(o)=4,63$ and $M(m)=4,64$ $t=0,73(382)$ $p>0,05$), and morphs of male faces (with the same ratio as above) are perceived significantly more trustworthy than the original trustworthy faces ($M(o)=3,91$ and $M(m)=4,44$ $t=3,352(382)$ $p<0,05$). We suggest, that two morphing related phenomena (increased attractiveness, averageness) affect perception of trustworthiness in a gender specific way. Supported by TÁMOP-4.2.2.C-11/1/KONV-2012-0008.

A-0578

CHANGE DETECTION PERFORMANCE OF CHILDREN WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER (ADHD)

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The purpose of this study is to evaluate change detection performance and visual search patterns of children with ADHD and compare their performances with typically developing (TD) children. In order to evaluate change detection performance, flicker paradigm was used. Eye movements were also recorded via eye tracker during the experiment, for comparing visual search patterns of ADHD and TD groups. Children with ADHD showed poorer correct change detection performance (65%) compared to TD (87%) children, $F(1, 46) = 18.65$, $p < .05$. Changes with central interest were detected faster ($M_{\text{central}} = 4.05$ sec, $M_{\text{marginal}} = 10.89$ sec), $F(1, 43) = 159.15$, $p < .05$ and more accurate (89%) than changes with marginal interest (62%), $F(1, 46) = 98.06$, $p < .05$ by both group. TD groups made more fixations on the area of change ($M = 1.95$) than ADHD children ($M = 1.61$), $F(1, 46) = 5.24$, $p < .05$. Fixation durations of children with TD were longer (13.76 sec) than ADHD children (10.84 sec), $F(1, 46) = 4.18$, $p < .05$. The results are discussed in terms of the relation

between attention and visual search strategies while some suggestions for diagnostics are proposed.

A-0579

INVESTIGATING DOUBLE LETTER REPRESENTATION IN WORDS: A CROSS-LINGUISTIC STUDY OF HANDWRITING PRODUCTION IN FRENCH AND ITALIAN
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We examined how letter doubling in words affects the kinematics of handwriting production, and whether the phonological counterparts of the doublet modulate the timing of movement execution. Letter doubling does not affect pronunciation in French (e.g., /s/ in LIS.TER and LIS.SER; the „,“ stands for syllable boundary in print).

In Italian, instead, letter doubling causes a lengthening of consonant duration (/s/ in DIS.GRAZIA, /ss/ in DIS.SIPARE). Consequently, the phonological counterpart of the doublet matches the orthographic syllabification of words in Italian but not in French. Participants wrote words that shared the initial letters but differed on the presence of a doublet (e.g., LISSER/LISTER; DISSIPARE/DISGRAZIA).

In French, latencies and durations of the initial letters were longer in words containing doublets. The presence of the doublet required a supplementary load in orthographic processing. Furthermore, doublet programming conducted the participants to abandon the usual syllable-by-syllable strategy observed in French word writing. An opposite pattern emerged for Italian on letter durations.

The presence of a doublet facilitated spelling recall and decreased the processing load during production. The phonological information seems to speed up orthographic processing. The data suggest that the central processes that are involved in spelling representation cascade into the peripheral processes that regulate movement execution.

A-0580

THE EFFECTS OF RELATIONSHIP QUALITY ON SOCIAL NETWORK ORGANIZATION

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Built on different premises, three distinct psychological theories study the effects of relationship quality on social network organization. Attachment theory examines how basic forms of relationship representations, formed through childhood experiences, shape one's social relationships. Relational model theory focuses on the distribution and interaction of four universal relationship forms determined by the relationship's function and quality. Ego-centered network theory, built on the social brain hypothesis,

describes how relationship quality organizes social networks into concentric layers around the ego. We wanted to better understand the underlying cognitive structure that contributes to relationship quality driven network complexity. To explore possible links among the three theories and reveal common underlying constructs we investigated them at once in a single study. Following ego-centered network research, participants first recalled all of their friends and relatives (alters) with whom they interacted in the past month. Next, they evaluated the quality of their relationship with each alter along multiple dimensions: among them closeness, warmth, the dominance of the four basic attachment styles and the prevalence of the four relational models. Based on multivariate data analysis significant relationships emerged among attachment styles, relational models and relational closeness pointing to correspondences among the three theories. Supported by TÁMOP-4.2.2.C-11/1/KONV-2012-0008.

A-0581

DOES PERFORMANCE IN TASK-CUEING EXPERIMENTS REFLECT COMPOUND RETRIEVAL OR TASK-SET CONTROL?

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Phenomena observed in task-cueing experiments — task-switch costs, their reduction by preparation, response-congruence effects — have been widely interpreted as indexing task-set control and its limitations. Schneider and Logan (e.g. 2005, JEP:General) instead proposed that participants simply retrieve the response associated with the cue-stimulus compound: no “task-set” level of control is involved. In three experiments with small stimulus sets and short (100 ms) or long (1200 ms) cue-stimulus intervals, we gave one group standard task-cueing instructions (e.g. if background blue, classify digit as odd-even, if pink as high-low). Another group were instructed/trained to use cue+stimulus -> response (CSR) rules, with no mention of tasks. The performance of the CSR group was very different: much larger congruence effects, smaller switch costs, slower learning and transfer to new stimuli, and no benefit of preparation. Their non-zero “switch cost” may seem paradoxical if they are not construing the situation in terms of tasks, but is also generated by a connectionist network that learns the CSR contingencies without any task representation. We conclude that the pattern of performance usually induced by task-cueing instructions indeed reflects an efficient task-set level of control.

A-0582

DEVELOPMENTAL CHANGES IN CROSS-MODAL TRANSFER OF SHAPE

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Adults can easily access novel information gathered in one perceptual modality for use in a second. The way such multisensory abilities change in the course of development, however, is as yet unclear. We tested visual-haptic mapping of shape across age using a matching task in children aged 4 to 10 and adults. Objects were presented either visually or haptically, followed by the simultaneous presentation of the original object (target) and a distractor in the modality

matching the test condition (visual-to-visual or haptic-to-haptic control conditions), or in the other modality (visual-to-haptic and haptic-to-visual transfer conditions). Results show that, at least for visual and haptic modalities, cross-modal transfer is not fully developed until middle childhood. The results also indicate that haptic-to-vision and vision-to-haptic develop along different trajectories with the former slower to develop than the latter. The implications of this developmental asymmetry for the representations mediating multimodal processing are discussed.

A-0583

HOW STRANGE IS TICKERTAPE SYNAESTHESIA?: A CASE STUDY.

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Some grapheme-colour synaesthetes experience coloured imagery of the written appearance of letters and words they are hearing, speaking or thinking, like a visual "subtitle" in their mind's eye. Referred to as tickertape synaesthesia, this is almost unstudied. However similar imagery is also reported by some people without grapheme-colour synaesthesia – now as uncoloured subtitles – suggesting a more general ability to involuntarily translate phonemic representations of words into graphemic imagery. This ability may relate to media reports of individuals with exceptional abilities that are plausibly related to word visualization, e.g., rapidly backwards spelling of words, enumeration of the letters in a word, etc. We present a formal case study of a non-coloured tickertape synaesthete with such abilities. We measured her ability to enumerate letters in auditorily-presented words, words in auditorily-presented sentences, and backwards spelling, compared to control tasks and to control participants, including people who intensely practiced some of these skills. The qualitative nature of her experiences are described, and we consider whether her skills should be regarded as truly exceptional, or better seen as continuous with the wide ability range of shown by control groups. We also question whether her synaesthetic imagery experience causally supports her unusual skills.

A-0585

SPATIAL INTERFERENCE IN MENTAL ARITHMETIC

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The presented study investigates the effects of spatial information on mental arithmetic. In Experiment 1, participants solved addition and subtraction problems and indicated the result verbally while moving the arm continuously either leftwards, rightwards, upwards or downwards. The analysis of the problem solving performance revealed a mapping between arithmetic operations and spatial movements along both the horizontal and vertical axes. Specifically, performance in mental addition was better while making upwards compared to downwards movements as well as when moving right compared to left, while the inverse pattern was observed in subtraction. In Experiment 2, spatial information was irrelevant for the

task and instead of instructing to perform active body movements, participants calculated while the problems moved in one of the four cardinal directions on the screen. Interestingly, for visual motions, the spatial effects on arithmetic performances were restricted to the vertical dimension. Taken together, our findings provide evidence for an impact of spatial processing on mental arithmetic. This linkage is stronger and more automatized for the vertical dimension, supporting the notion that sensory motor experiences in the vertical dimension provide a grounding for arithmetic operations.

A-0587

THE EFFECTS OF STIMULUS MODALITY ON AUTONOMIC FEAR RESPONSE EXTINGUISHED THROUGHOUT THE RECONSOLIDATION PROCESS OF FEAR MEMORY

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The studies on the reconsolidation of CS-activated fear memory indicated the memory in labile state could be modified to prevent fear. However, little is known about the effects of CS-US relevancy on amelioration of fear memories. The present study investigated the effects of extinction of fear elicited by arbitrary versus ecological CSs, by either within or out of the reconsolidation window, on return of fear. Seventy-two students participated in the study with a 2(Stimulus: ecological and arbitrary) x 3(Extinction: 10 minutes and 6 hours after CS, and no reminder) between-groups design. Pictures of a snake and a spider were used as ecological stimuli; a yellow and a blue circles were used as arbitrary stimuli. In the acquisition phase, each stimulus was used as either CS+ or CS- in a counterbalanced fashion. CS+ presentations were paired by an electrocutaneous stimulation. Twenty hours later the participants were assigned to one of the three extinction conditions. In the third day of the experiment, the persistence of extinction effects was tested. Electrodermal conductivity was recorded as the measure of autonomic fear reactions. The results revealed that the effect of stimulus modality on autonomic fear reactions was significant throughout the acquisition, extinction, and re-extinction phases.

A-0588

THE ROLE OF PERSONALITY AND EMOTIONAL STATE ON RISK TAKING BEHAVIOR

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The main goal of this research was to understand the differences in risk-taking behavior as a function of emotional states experienced by different personality traits. Predictions of valence-based (Isen, & Patrick, 1983; Isen, & Nygren, 1988) and cognitive appraisals-based theories (Lerner, & Keltner, 2000) were examined to understand the interactions of personality and affective states in risk taking tendencies. Ninety-three undergraduate students were given personality measures and were subjected to mood induction. They were tested by Balloon Analogue Risk Task (BART) (Lejuez, Read, Kahler, Richards, Ramsey, Stuart, Strong, & Brown, 2002) and Personal Risk Inventory (Hockey, Maule, Clough, & Bdzola, 2000) to measure their risk-taking tendencies. Preliminary analyses showed

that negative emotions lead to risk aversion relative to positive and neutral emotional states in BART even when impulsiveness and general risk taking tendencies are controlled. In contrast, in a more ecologically valid measure of risk taking behavior, Personal Risk Inventory, individuals in negative emotional states rated their choices in scenarios of real life dilemmas as more risky. These preliminary results indicate that it is not the control and certainty dimensions but valence of emotions that influence risk taking behavior.

A-0589

BEYOND STATISTICAL FORMATS IN BAYESIAN INFERENCE: NESTED SETS, PROSPECTIVE REASONING, & NUMERACY

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Even with the computational simplification of natural frequencies, global performance on Bayesian inference problems remains relatively low, and the effect of individual numeracy varies widely. A primary objective of the current study was to further understand why difficulties persist even with natural frequency information, especially amongst lower numerate individuals. Four identical scenarios were presented, differing only in the formulation of the question along two dimensions: (a) direction of reasoning (retrospectively over presented data vs. prospectively over an imagined sample); and (b) depth of nestedness of the requested subset ($p(H|D)$ vs. $p(D)$ in Bayes theorem). All problems required identical arithmetic calculations. Individual differences in numeracy were also measured. Global effects were found for both the direction of reasoning and the relative nestedness of the requested ratio. Individual differences in numeracy modulated these effects, however, with low numerate reasoners especially hindered when reasoning prospectively over hypothetical data. Findings demonstrate that not all natural frequency problems are created equal, and call into question the breadth of existing theories of Bayesian problem solving. Results further call into question the abilities assessed by existing numeracy scales, and the extent to which "low numeracy" is specific to numerical processing.

A-0590

ENCODING CONSCIOUS DECISION IN THE POST-DECISION WAGERING TASK: A CONNECTIONIST APPROACH

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Our research investigated consciousness in discriminating emotional stimuli by adapting a connectionist approach. To do so, we developed a neuronal network that linked together the neuronal, behavioral and subjective data within the post-decision wagering task. In the behavioral task, participants made yes/no decisions whether or not a masked fearful face was present, and were asked to

subjectively bet on the correctness of the yes-no decisions by placing either high or low wagers. First, we tested the correlation between consciousness and wagering with log-linear models whether participant was aware of having information about accuracy of their decision. Then, the neural network with ten neurons in the hidden layer and a transfer function was trained with wagering responses and log-linear outputs accommodating for effectiveness of conscious and unconscious behavior. Surprisingly, a simple neural architecture (four inputs and one output) accounted successfully for the wagering data and produced experimentally testable prediction at conscious and preconscious level. Moreover, it appeared that only low-wagers significantly contributed in wagering behavior by showing characteristic patterns of neuronal input weights. In this fashion, our research provides computational evidence how information is possibly encoded in neurons and can be made available to brain systems while making conscious decisions.

A-0591

AUTOMATIC PROCESSING OF AUDITORY SEQUENCES AND SUSCEPTIBILITY TO AUDITORY DISTRACTION IN MUSICIANS AND NONMUSICIANS

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The study is focused on musicians' and nonmusicians' automatic and deliberate processing of auditory sequences, and on the relationship between auditory distractibility and musical expertise. In Experiment 1, speed and accuracy of auditory sequence processing was tested in 75 highly trained musicians and nonmusicians who volunteered for the study. The participants listened to pairs of melodies and judged them as same or different. Musicians' judgments were more accurate than nonmusicians', both under „automatic processing" and „deliberate processing" experimental conditions. Response time did not vary across the groups. Experiment 2 aimed to test whether musicians' higher accuracy of automatic processing of music is associated with their greater distractibility from changing state auditory sequences accompanying presentation (but not recall) of 8-digit series in a serial recall task. In Experiment 2, the former participants of Experiment 1 (N = 68) performed a serial recall task in 18 no-distraction and 18 distraction trials. Musicians revealed advantageous serial recall performance under no distraction condition and marginally significant superiority over nonmusicians in performance of serial recall under distraction condition. Auditory distraction limited to presentation phase is insufficient for serial recall performance to show the effect of musical expertise.

A-0592

THE LONG-LASTING EFFECTS OF EXTINCTION DURING THE RECONSOLIDATION PROCESS OF FEAR MEMORY

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It has been shown that behavioral interventions to the memory reconsolidation process can be effective on

“erasure” of fear memories. In such studies, after the opening of the reconsolidation window of fear memory by presenting a trauma-reminding CS, an extinction procedure takes place, and 24 hours after the extinction return of fear reactions is tested. In the present study, we have examined the long-lasting effects of extinction carried out during the memory reconsolidation process. The recovery of fear reactions were recorded 24 hours, 15 days or 3 months after the intervention. The college students (N=108) served as participants in the study. The reconsolidation-update procedure developed by Schiller, et al. (2010) in a three-phase experiment (acquisition, extinction, and re-extinction of fear) was followed. A 3 (Extinction: 10 minutes and 6 hours after the presentation of a reminder and no reminder) x 3 (Re-extinction: 24 hours, 15 days, and 3 months after the extinction) between-groups design was conducted in the study. Electrodermal activity of the participants in each phase was recorded as a measure of fear reactions. The results indicated that the measures of autonomic fear reactions obtained 24 hours, 15 days, and 3 months after the intervention have been differentiated significantly.

A-0593

IT'S ONLY REAL IF YOU SEE IT: SURROUND SYSTEM BASED 3D SOUND SOURCE MODELLING IN VIRTUAL REALITY

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In the design of virtual reality one can choose two options. Either to create a simulation that mimics reality to every detail, or –based on what we know of human perception – to simulate just what we perceive of the world. Following the second approach, we designed a multimodal integration experiment in virtual reality. In two experiments we used free field sound sources and a surround speaker set to present noise bursts. Acoustic stimuli were presented either alone or with spatially displaced lightblobs. Participants were asked to point to the direction from where they have heard the sounds and to ignore visual distractors. In the first experiment we used vertical offsets and in the second horizontal offsets. Multilevel modelling analyses on the response biases showed that visual stimuli attracted the location of sounds, according to the ventriloquism illusion. This attraction was stronger for centrally presented sounds, and when sound and visual stimulus were presented with vertical offset. We found slight differences between sound source types. These results suggest that designing virtual reality environments following the principles of perception could lead to perceptions close to the real world.

A-0594

FALSE MEMORIES OF EMOTIONAL EVENTS: DEPRESSION DOES NOT PROTECT AGAINST MEMORY DISTORTIONS

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Emotional material generally protects against false memories. Individuals suffering from depressive symptoms tend to focus more on negative information, likely incurring more false memories. In a forensic context, knowledge about memory distortions is often warranted. However, the majority of former false memory studies have been conducted using wordlists. In the present experiment we tested participants' memory with an ecologically relevant scripted paradigm to measure inferential causal errors in young adults with symptoms of depression, or anxiety problems, versus controls (N = 60). The paradigm consists of the presentation of 8 scripts; each of them includes an effect (negative or neutral) of an action, whose cause is presented only at recognition. We examined whether individuals with depressive symptoms were more prone to produce emotional causal errors. Results showed a positive correlation between depressive symptoms and emotional causal errors ($r = .43$, $p = .001$). Both the depressive and anxiety group produced a higher proportion of emotional causal errors than the control group ($p < .001$), and the depressive group produced more emotional causal errors compared to neutral ones ($p < .01$). The role of emotions in false memory generation in adolescents with depressive symptoms is discussed.

A-0595

AESTHETIC EVALUATION OF ABSTRACT PATTERNS WITH SMALL DEVIATIONS FROM SYMMETRY

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There are a number of factors like symmetry, complexity, and familiarity which are known to influence aesthetic evaluation (Leder et al., 2004). Concerning abstract black-and-white patterns, Jacobsen and Höfel (2002) found symmetry to be the most important and complexity the second-most important factor. However, there are claims that small asymmetries can be beautiful as well (McManus, 2005). In the present study, we investigated the influence of such minor asymmetries on the liking of abstract patterns. We created a new set of abstract black-and-white patterns, containing broken symmetric patterns, which are slightly different from corresponding fully symmetric ones. Because breaking the symmetry also increases the complexity, we additionally included fully symmetric patterns, matched to the broken patterns by visual complexity ratings obtained in a pre-study. The resulting patterns were then rated on a 7-point scale for liking. Patterns with broken symmetries were significantly less liked than full symmetric ones. This applied to the patterns with matched complexity as well as to those with increased complexity. Therefore, we can confirm the result of Jacobsen and Höfel (2002) that

symmetry is a stronger and more important factor than complexity, even when the difference in symmetry is very small.

A-0596

CONCEPTUAL ORGANISATION REVISITED: BEHAVIOURAL AND ERP EVIDENCE

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In the context of the contemporary theories of semantic knowledge organisation, closely related concepts are those that share same features, and consequently belong to the same semantic category (horse-zebra). Although this type of organisation successfully captures taxonomic relatedness between objects, it fails to recognize relatedness based on object feature complementarity, known as thematic relatedness (horse-saddle). However, recent behavioural and neuroanatomical studies demonstrate that thematic knowledge also plays an important role in conceptual knowledge in both children and adults. In a visual word-to-picture matching task, educated Serbian adults were slower and less accurate when judging a mismatch where word and picture were related than when judging a match or an unrelated mismatched pair. More interestingly, differences in speed were also significant between thematically and taxonomically related mismatched pairs. These differences were also evident in participants' patterns of neural response, showing sensitivity of semantic N400 ERP component on differences between thematic and taxonomic relatedness. Our results suggest not only that both thematic and taxonomic knowledge are activated during language comprehension (even in a task that does not explicitly require assessing semantic relations), but that these two types of knowledge may contribute differentially to the processing of concepts.

A-0597

HEMISPHERIC SPECIALIZATION FOR FAVORITE AND RIVAL SOCCER TEAM

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The right hemisphere has been considered dominant for processing emotion. However, the valence hypothesis proposes that left hemisphere is specialized for processing positive emotions and the right, negative emotions. These results were observed for happy and angry faces, whose valences are innate. We used Preference for soccer team to evaluate hemispheric specialization for acquired affective valences. Favorite or Rival team figures were centrally presented and Manual Reaction Time (MRT) for pressing Left or Right key was measured. MRT of nineteen volunteers were submitted to an ANOVA with Preference (Favorite/Rival), Key (Left/Right) and Quintile as repeated-measures.

Our main finding was a Preference/Key interaction ($F_{1,18} = 6,720, p < .02$). Planned comparisons showed that, for Favorite team, Left key/hand response (424 ms) is faster ($p < .05$) than Right key/hand response (441 ms) and that with Left key/hand, Favorite MRT (424 ms) is shorter ($p < .03$) than Rival MRT (443ms). Thus, the right hemisphere response is faster to a positive stimulus than to a negative one. Moreover, right hemisphere response to Favorite team is faster than left hemisphere response. In conclusion, our findings show that the hemispheric specialization for processing affective stimulus may depend if its valence is innate or acquired.

A-0598

DO PRESCHOOLERS EXHIBIT A YES BIAS TO COMPLEX YES-NO QUESTIONS REGARDING TO THEIR KNOWLEDGE?

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Previous studies have found that 2-year-olds exhibit a strong and consistent yes bias to simple yes-no questions, but older preschoolers do not unless the questions are incomprehensible and they feel social pressure that they need to say "yes" (e.g., Fritsley & Lee, 2003; Okanda & Itakura, 2008, Okanda, Somogyi, & Itakura, 2012). Older preschoolers showed high proportion of correct responses because these simple yes-no questions are easy to comprehend. In the present study, we asked 4- to 6-year-olds 10 complex-comprehensible questions (e.g., "Is a train longer than a car?"), 10 complex-incomprehensible questions (e.g., "Is clouds busier than the sun?"), and 12 simple-comprehensible questions (e.g., "Is this red?") in order to investigate whether older preschoolers are able to answer different level of yes-no questions appropriately. Children's response bias scores decreased with age. Four-year-olds exhibited a yes bias in all conditions; 5- and 6-year-olds exhibited it to both complex questions. Overall, children's response bias scores were stronger in the complex-incomprehensible condition than the complex-comprehensible condition. Older preschoolers' yes bias to complex yes-no questions can be related to either their limited verbal abilities or their tendency to agree with adults. We should handle yes-no questions carefully in developmental psychology experiments involving preschoolers.

A-0599

IMPLICIT AND EXPLICIT CAPTURE OF ATTENTION IN INATTENTIONAL BLINDNESS TASK

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In a series of experiments on inattentional blindness (IB) we demonstrate that performance costs depend on the relevancy of the critical object. Previous research found contradictory results on the main task performance between noticers and non-noticers in IB task. To explain this contradiction we manipulated the relevancy of the critical object in following ways: 1) presenting all objects sequentially at regular intervals; 2) priming subjects by making targets transform into the shape of the critical

object before it appears; 3) matching the trajectory and color of the critical object to the trajectory and color of targets. The dependent measure was the error rate in the main task and the IB rate. All results were compared across conditions of high and low relevancy of the critical object. Analysis of three experiments showed that the relevancy of the critical object together with IB influenced the main task performance. In relevant condition non-noticers make significantly more mistakes than noticers across all groups while in irrelevant condition the result was reverse. Our data provides some insight into relation of implicit and explicit capture of attention in IB and helps to explain discrepancies in results on the main task performance obtained by other investigators.

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A-0601

INFLUENCE OF PROCEDURAL VS. DECLARATIVE WORKING MEMORY LOAD ON EXCEPTIONALLY SLOW REACTION TIMES

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Previous individual differences studies found high correlations between working memory (WM) and the rate of exceptionally slow reaction times (RT). In two experiments, the authors examined this relationship by directly manipulating the availability of WM load. In Experiments 1, participants performed choice-reaction tasks with either low or high WM load. Using ex-Gaussian model fitting, we found that WM load had a unique influence on the parameter mostly responsible for the right tail of the RT distribution (i.e., Tau). In Experiment 2, we explored whether effects of WM are due to a general WM load, or reflect a specific load on the procedural WM system. Participants performed a choice-reaction task with high/low procedural or declarative WM load. We found that high WM load influenced only the Tau parameter with the procedural WM load having a stronger influence than the declarative load.

Theoretical implications are discussed.

A-0602

ALICE IN LEGOLAND: A BEHAVIORAL STUDY ON ABSTRACT WORDS

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The WordsAsTools proposal (Borghi et al,2011) claims that, due to different acquisition mechanisms, linguistic information is more relevant for abstract than for concrete words. We aimed to verify the hypotheses that word-tool (H1) strengthens the boundaries between categories; (H2) plays a more important role for abstract than for concrete concepts. Concrete exemplars were operationalized as novel Objects (Lego bricks arranged in a similar way); for abstract exemplars we selected novel spatial Relations between the Objects. After an experiential training, participants had to group both kinds of exemplars in six different categories. Consistently with literature, with concrete exemplars

responses were affected by perceptual features, and were consistent across subjects. Afterwards, half of the participants were provided by a verbal label plus an explanation for each exemplar. When asked to decide whether two elements belonged to the same category – using a keyboard or a microphone, linguistically trained participants performed better than the no-language group (H1). The two groups strongly differed as far as abstract concepts were concerned, particularly for mouth responses (H2). This evidence supports WAT: language is relevant for concrete and abstract words, as it helps better differentiate between categories. Nonetheless, it is more accessible in the representation of abstract meanings.

A-0603

EMBODIED REPRESENTATION OF TOOL KNOWLEDGE : A TMS INVESTIGATION

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The representation of tools extends outside the ventral visual stream in brain areas, such as the middle temporal gyrus (MTG) or the supramarginal gyrus (SMG), that also play a role in action. This finding was taken as evidence for embodied cognition theories assuming that tool recognition requires the re-enactment of sensory-motor experience. We used neuronavigated transcranial magnetic stimulation (10 Hz TMS ; 65%) to interfere with the function of SMG or MTG in healthy participants performing tool use judgements. The first study revealed a division of labour that was not predicted by embodied cognition theories : TMS over left SMG interfered with judgements about the hand configuration required to use tools but not with judgements about their context of use, whereas contextual judgements were selectively disrupted by TMS over left MTG. The second study showed that TMS over left SMG impaired the ability to infer the spatial position of fingers – but not perceptual attributes – from a tool picture, whereas this task remained unaffected after TMS over other parietal (AIP) or premotor (PMv) areas involved in object grasping. These results suggest that the contribution of SMG to tool knowledge is decoupled from the sensory-motor processes underlying manual dexterity.

A-0604

DETERMINING SALIENCY LEVELS OF EMOTIONAL FACIAL EXPRESSIONS BY USING INSTRUCTED-LYING PARADIGM

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The question of how emotional facial expressions are processed by the brain gives rise to three partly conflicting, prominent models: Right Hemisphere Hypothesis (RHH), Valence Hypothesis (VH) and Approach-Withdrawal Hypothesis (AWH). Although there are findings on support for all of these models, there is no reached consensus yet. The present study aimed to investigate whether emotional facial expressions could be grouped on the basis of their saliency level. In order to determine the saliency of emotions, instructed lying paradigm was used in an emotion recognition task. The participants were instructed that they would be required to identify the emotion

in the face displayed on the screen; however, as it was cued, they would be needed to lie about the emotion as quickly as possible. The half of the trials consisted of the lie-cued pictures presented in a pseudo-random fashion. SCR measures, accuracy measures, and reaction times (RT) were obtained. It was found that lying yielded higher SCRs and longer RTs independent from the facial expression. Moreover, lying about certain emotions caused greater SCRs with longer RTs in comparison with other emotions. Additionally, a decreased RT was observed in the lie-cued trials in which emotions with higher cognitive availability were used.

A-0605

INTRINSIC REWARD PREDICTION ERRORS DETERMINE FEEDBACK MEMORY

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Recent observations (Satterthwaite et al., 2012) and models (Silvetti, Seurinck, & Verguts, 2011) suggest that reward prediction errors may play an important role in performance monitoring, even in the absence of rewards. In a series of studies, we tested this hypothesis by investigating how people process negative or positive affective stimuli following task performance. In a first study, we demonstrate how priming difficult (vs. easy) trials facilitates the categorisation of negative (vs. positive) words. However, when participants were required to first respond to these stimuli, this pattern reversed, akin to the idea that successfully overcoming a more difficult trial feels more rewarding. In a second study, using fMRI, we explored how task difficulty impacts the processing of subsequent negative or positive picture presentation in the brain. This interaction uncovered differential activations of anterior cingulate and premotor cortices. Furthermore, a memory network was uncovered, involving the parahippocampal gyri and medial temporal lobe. Indeed, in a third experiment, we demonstrate how task difficulty also impacts affective picture memory in a surprise recall test. Together, these studies demonstrate how standard „cognitive“ task performance can elicit rapid fluctuations in affect, stressing the importance of taking into account motivational differences when varying task difficulty.

A-0607

THE ROLE OF LETTER FEATURES IN VISUAL-WORD RECOGNITION: EVIDENCE FROM A DELAYED SEGMENT TECHNIQUE

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Do all visual features in a word's constituent letters have the same importance during lexical access? Here we examined whether some features of a word's letters (midsegments, junctions, terminals) are more important than others. To that end, we conducted two lexical decision experiments using a delayed segment technique with lowercase stimuli –in this technique, a partial preview appears for 50 ms and

is immediately followed by the target item. In Experiment 1, the partial preview was composed of midsegments, junctions or terminals –a non-delay condition was used as a control. Results only revealed an advantage of the non-delay condition over the other three conditions (i.e., the partial previews did not activate the target word to a large extent). In Experiment 2, the partial preview was composed of the whole word except for the deletion of midsegments, junctions, or terminals –we also employed a non-delay condition as a control. Results showed the following pattern in the latency data: non-delay = delay of terminals < delay of junctions < delay of midsegments. Thus, some parts of a word's constituent letters are more critical for word identification than others.

A-0608

NEURO-ANATOMICAL LANDMARKS OF DOMAIN-GENERAL VULNERABILITIES IN DEVELOPMENTAL DYSCALCULIA: EMOTIONAL AND COGNITIVE ASPECTS.

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Developmental Dyscalculia (DD) is a neurodevelopmental disorder of numerical and mathematical abilities in children with normal intelligence, in the absence of other cognitive impairments. DD is often described as a domain-specific disability arising from deficits in the representation of numerical information, resulting in abnormal basic numerical processing mechanisms (Butterworth, Varma, & Laurillard, 2011). However, domain-general cognitive abilities have also been linked to DD (Geary, 2004). Working memory and visual attention in particular, are thought to play an important role in arithmetic problems solving. Similarly, emotional factors, such as math anxiety may lead to individual differences in arithmetic problems solving. In the present talk, I will discuss domain-general and emotional neuro-anatomical landmarks and their relation to DD etiology. For example, one of the neuro-anatomical landmarks of math anxiety relates to Amygdale hyper activity in high math anxiety individuals compared with low math anxiety individuals. We demonstrated for the first time, that targeted math intervention decreased math anxiety in DDs children, with normalized of (1) Amygdale hyper activity (2) effective connectivity between the amygdala and numerical specific partial brain regions. This line of thinking will potentially expand the over simplified signal deficits hypothesis that commonly characterizes the study of DD.

A-0609

THE ROLE OF INFLECTIONAL SUFFIXES AND GRAMMATICAL CATEGORY IN LEXICAL PROCESSING OF GREEK WORDS

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This study examines the effects of morphology on visual word recognition in Greek using the priming paradigm. Previous studies using this paradigm often interpret the facilitation in the processing of target words when preceded by morphological-related primes as evidence

of morphological processing in word recognition. In the present study, we examine the role of morphological priming on morphologically complex words that consist of a stable stem (odig-) and verb (e.g. -o, -eis) and/or noun (e.g. -os, -ou) inflectional suffixes in a lexical decision task using masked (Experiment 1) and delayed (Experiment 2) priming. Our aim was twofold: firstly, to explore the role of inflectional morphology in the processing of morphologically complex words in a highly inflected language in which words are typically composed of a stem and a suffix; and, secondly, to examine possible differences in priming effects when processing words from the same and/or different grammatical class (verb vs noun). Overall, results suggest that neither inflectional morphology nor grammatical class play a critical role in processing visual words in Greek. This indicates that morphologically complex Greek words are processed in their entirety rather than in their component morphemes, and, also, independently of their grammatical class.

A-0610

THE INFLUENCE OF RESOURCES LIMITATION ON DECISION-MAKING PROCESSES IN ARTIFICIAL GRAMMAR LEARNING TASK

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The aim of the presented studies was to verify whether few existing implicit rules can compete for resources responsible for their processing. Previous studies did not introduce such rivalry on the unconscious level. Three experiments were conducted using dual task in AGL paradigm. The competing regularity rule was introduced using different senses: for Study 1 it involved visual stimuli, for Study 2 it involved haptic stimuli, for Study 3 - sound stimuli. The results of the three experiments indicate that the presence of the concurrent rule does not impair effectiveness of subjects, but it affects decision-making strategies. It turned out that two on-going implicit processes lead to more confirmatory strategy. Participants were more effective during categorization of rule-based letter strings than random. The effect was observed regardless of the sensory channel of the second rule. It may mean that implicit processes share a common, non-specific pool of cognitive resources and compete for them when there are involved few implicit rules.

A-0611

THE NEURAL BASIS OF POINTING COMPREHENSION

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The act of pointing appears to be guided by a willingness to influence others' mental state for greater cultural endeavors. These declarative motives are rooted in our

brain's architecture and fostered through social activities. One question that remains unanswered regards the timing of this onset of referential brain activity. The present study investigated brain activation by means of EEG to congruent and incongruent pointing gestures over posterior areas in not pointing 6- and pointing 12-months-old infants. While 6-months-old infants did not show reliable differential activation in predicted areas, i.e., P400 components, 12-months infants significantly demonstrated neurological correlates of pointing comprehension in terms of congruency, $p = .05$, $\eta^2 = .16$, and evinced an adult-like sensitivity with higher amplitudes for incongruent (15.36 μV) than for congruent (13.32 μV) trials. The amplitude of the P400 component differed between the two hemispheres, $p < .01$, $\eta^2 = .33$, with higher amplitudes on the right (16.09 μV) relative to the left (12.59 μV) side, similar to 8-months infants. A gradual increase in amplitude activation across the hemispheres and congruency was thus found. Results are discussed in terms of experience-dependent mechanisms and information gathering through interaction that promotes social cognitive capabilities.

A-0612

HOW SOCIAL MOTIVATION DRIVES JOKE APPRECIATION

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Why is it so rewarding to understand a joke? Irrespective of the content of humorous materials, the mere understanding of a joke signals the presence of a common ground shared by the two people involved. This study assessed laughing reactions via electromyography (EMG) as participants listened to pre-recorded jokes told by two speakers who were presented as politically oriented (left- or right-wing). Ratings of the jokes were also measured. Results show that when the speaker and the subject belonged to the same political in-group, jokes yielded more laughter and were better evaluated, although no effect of either the subject's political orientation or the political orientation assigned to the speaker was observed. Of interest, the effect of group membership on subjects' reactions was mostly due to items that were otherwise rated as less funny. A similar effect was replicated in a further behavioral experiment, which provided more insight into the mechanisms involved (pro-ingroup or anti-outgroup). The findings provide evidence that merely knowing whether or not an unknown speaker is a member of one's social group suffices to yield differences in subjects' reactions to the same humorous content. We discuss how inference making processes play a role in social bonding.

A-0613

THE EFFECTS OF AUTONOMIC LABILITY AND STIMULUS MODALITY ON ACQUISITION AND EXTINCTION OF INSTRUCTED FEAR

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This study aimed to investigate the effects of instructed fear on acquisition and extinction of expectancy of trauma

in relation with autonomic lability characteristics of the participants (N=200) by utilizing CSs of different biological relevance. Pictures of a snake and a spider were used as ecological stimuli; the geometrical figures with different colors were used as arbitrary stimuli. First, a four-minute SCR baseline was taken for autonomic lability measures. Then the participants were instructed that they were given an electrical stimulation after one of the two figures displayed, and they might get at least one and maximum of three electrical stimulations throughout the session randomly. The participants took five blocks of trials. Each block included a 15-sec presentation of either CS+ or CS-, and a rating of their expectancy of trauma. Finally, the participants took 10 blocks of extinction trials. There was no electrical stimulation throughout the experimental sessions. The SCR data and expectancy ratings together with lability measures indicated that (1) biological relevancy of stimuli had differential effects during acquisition, but not extinction; (2) autonomic and cognitive measures of fear yielded parallel results; (3) autonomic lability was found to be linked to the conditioned responding by the stimulus modality.

A-0614
QUANTIFIER COMPREHENSION IN SCHIZOPHRENIA

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Working memory (WM) impairments are fundamental in schizophrenia: a strong association between verbal WM and language comprehension is suggested. Recently, the computational theory in natural language has established this relationship in quantifier verification. To examine WM demands in quantifier comprehension, we investigated 15 patients with schizophrenia and 15 age-matched healthy controls in a semantic truth value judgment task. We asked participants to verify quantifier sentences using proportional (many, few) and numerical (at least 7, at most 13, at most 7, at most 13) quantifiers against visual images comprising varied proportions of yellow and blue circles in a total of 20 circles. We predicted that patients would diverge in engaging WM while formulating comprehension strategies for proportional and numerical quantifiers as compared to healthy controls. The response time and accuracy pattern show that WM requirements differed in building comparison strategies for the accurate comprehension of both quantifier classes which could be attributed to the complexity of the quantifier semantics. However no significant differences were observed between

groups. Nevertheless, the overall slower performance in the patient group can be explained by the memory impairments where switching between maintenance and comparison might be challenging for patients as compared to healthy controls.

A-0615
THE VALUE OF PAYING ATTENTION

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When acting in a dynamic environment we continuously trade-off the costs and benefits of attending to different things. Valued-based attention thus helps us allocate our limited cognitive resources to the most important things around us. Perception and attention are thought to bias the identification and selection of rewarded objects, and thus modulate both the processing speed and report accuracy of such.

Here we report results from an experiment in which performance contingent monetary rewards were selectively associated with the identification of briefly presented, mutually confusable stimuli in a pure accuracy task. By applying a version of the Poisson Counter Model (Kyllingsbæk et al., 2011), we use a Theory of Visual Attention (Bundesen, 1990; Bundesen et al., 2005) to investigate how specific components of visual attention are modulated as a function of reward magnitude.

Reward generally affected attention positively: When the relative rewards for the identification were high, neutral and low, respectively, the processing speed and report accuracy were correspondingly increased, unaffected and reduced. This suggests that reward acts largely to prime identification, consistent with the idea that identifications associated with rewarded outcome become visually salient.

A-0616
INDIVIDUAL DIFFERENCES IN WORKING MEMORY CAPACITY AND INTRAINDIVIDUAL VARIABILITY

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The present study investigated the relation between individual differences in terms of working memory (WM) abilities, on the one hand, and intraindividual variability (IIV) in a variety of cognitive tasks, on the other hand, based on the Geneva Variability Study. The sample consisted in 137 young adults (aged 19 to 35 years) and 218 older adults (aged 59 to 89 years), who performed a battery of cognitive tasks including simple or choice reaction time tasks, working memory tasks, inhibition tasks and speed processing tasks. Participants were distinguished in high versus low WM span, using a reading span task. IIV was measured by within-task individual standard deviations. ANOVAs were conducted separately for each task, to assess the effects of Age and WM capacities on IIV and mean performance. Results showed that low span participants were generally slower and more variable than high span

participants. More interestingly, Age x WM span interaction effects were observed on IIV in some of the measures, notably in resistance to interference scores, showing that only the low-span older adults were more variable than young adults (both high and low span), whereas the high span older adults were not more variable than younger adults.

A-0618

IS PREPARATION FOR A LANGUAGE SWITCH LIKE PREPARATION FOR A TASK SWITCH?

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Do task-switching and language-switching recruit similar control mechanisms? A key index of top-down control in task-switching – preparation for a switch in advance of the imperative stimulus – is underexplored in language switching. In a picture-naming experiment, the language (German or English) was specified by a cue on every trial and changed unpredictably; the cue-stimulus interval was either short (100 ms) or long (1500 ms). Preparation for a language switch elicited a brain potential strongly reminiscent of a well-known EEG ‘signature’ of preparation for a task-switch: a protracted positive-polarity modulation over the posterior scalp. As previously documented in task-switching, our ERP analyses contingent on RT distributions found that a larger switch-induced preparation positivity predicted a smaller language ‘switch cost’. The overlap in the electrophysiological correlates of preparing to switch tasks and languages suggests a common mechanism for top-down selection of task-set and language for production. But the effects of cueing the language with a spoken name of that language, e.g. “English” (which we label ‘supercue’), as compared to an arbitrary cue, suggest that rapid and automatic bottom-up selection of language for production might also occur – provided one uses a language cue as effective as the supercue.

A-0619

AUTOMATED ASSESSMENT OF SPEECH FLUENCY TO MEASURE CHANGES IN COGNITION

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Our objective was to examine spontaneous speech characteristics in patients with probable Alzheimer’s (AD) and Lewy-body (LBD) dementia. LBD is a rare disease that is difficult to diagnose and potentially confusable with AD and other forms of dementia. We have applied a computerized system for speech and language analysis to quantify speech fluency characteristics that are likely to be affected by LBD including density of silent pauses (SPD), mean pause duration (MPD), and disfluency rate (DR). The participants in the study consisted of AD (n=21) and LBD (n=11) patients and cognitively normal (CN) controls (n = 23). All participants underwent clinical and neuropsychological examination including a picture description task that was audio-recorded for subsequent transcription and automated analysis. We found a significant difference between CN and LBD (p<0.001) and CN and AD (p<0.001) groups on SPD. CN group had

significantly lower MPD than LBD group (p = 0.01). No significant differences between groups were found in the total number of words produced or DR. These findings are consistent with the phenomenology of LBD and indicate that speech of patients with DLB is measurably more hesitant than other groups. Measures of speech fluency may aid in characterization of LBD phenotype.

A-0620

THE INVOLVEMENT OF PARIETAL AND FRONTAL BRAIN AREAS IN THE INFERENCE OF SELF-AGENCY

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That we feel control over our actions and their consequences is referred to as the sense of self-agency. Such experiences are not always straightforward; our action does not always directly predict the outcome. In such ambiguous situations, retrospective cognitive inferences are made leading to the feeling of self-agency. Here, we aim to investigate what brain areas are involved. Twenty-three right-handed subjects performed an agency-inference task in which action outcomes matched or mismatched goals, while being scanned with functional-MRI. During the task, subjects performed an action (button press) and subsequently indicated whether or not they were the agent of the consequence of this action (the outcome) on a 9-point scale. We found brain activation related to self-agency (calculated by contrasting trials where self-agency was experienced versus trials in which no self-agency was experienced) in the inferior parietal lobule (IPL), the left superior frontal cortex, right superior frontal, and medial prefrontal cortex (mPFC). IPL activation has been associated with the integration of sensory information, suggesting that it can compare expected and actual outcomes. Moreover, mPFC has been found activated during self-referential processing. Our findings suggest that these processes might drive the inference of self-agency over outcomes of our actions.

A-0621

EXECUTIVE PROCESSES IN VISUAL WORKING MEMORY

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Three experiments are reported that investigate the processes involved in the retention of visually presented material and retention of the same material presented verbally for subsequent generation.

Line diagrams are used as the retained material. The results show that retention of these same materials requires different cognitive processes as a function of their presentation mode. When the material is visually presented, it relies on visuo-spatial processes. When the material is presented verbally from which the image has to be created, its retention requires executive processes. The experiments are interpreted within a Working Memory framework and it is argued that the results can be accommodated within a system that comprises a visual buffer in addition to a longer term, episodic visual memory.

A-0622

CAN THE LOWER/UPPER PART OF A WORD BE PROCESSED AS A WHOLE WORD? EVIDENCE FROM THE STROOP TASK.

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Visual information from objects is often incomplete: objects can be partially occluded by other objects in the scene, but still they can be readily identified. Here we conducted a series of experiments that examined whether words whose lower/upper portions were deleted could be processed as a whole word. To do that, we employed a Stroop color-naming task. We manipulated: 1) stimulus visual features (intact vs. mutilated words in their upper/lower portions); and 2) stimulus duration (unlimited vs. 100 ms). Results revealed that the mutilated words produced sizeable Stroop effects, which were similar in size to the effects obtained with the intact words (i.e., mutilated words produced a similar degree of lexical activation as intact words). The magnitude of these effects was (to some degree) modulated by stimulus duration and by the confusability of the words' mutilated letters. Taken together, the present data suggest that the cognitive system can rapidly reconstruct a whole percept from fragmentary information.

A-0623

HOW OTHERS PERCEIVE THE SOCIALLY EXCLUDED TARGET?

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From an evolutionary perspective, inclusionary status of a person (being socially included or being ignored/excluded) has important implications for many aspects of human life from survival to mating. Social dominance is one of the valuable resources for human adaptation. The current study aimed to explore the potential connection between social exclusion and social dominance. In accordance with cyberball paradigm (Williams and Jarvis, 2006), 72 participants (39 female, 33 male) randomly assigned to watch two versions of a ball tossing game. In the exclusion condition, participants observed a game that target player was socially excluded whereas in the inclusion condition target player was included. After observing one of the ball-tossing games (target person included vs. target person excluded), all participants evaluated the target player on 4 dominance relevant adjectives: assertive, self-confident, extrovert, social competent. Results clearly showed that socially excluded target was perceived low in dominance. This finding (claiming connection between "being excluded" and "being perceived non-dominant") may contribute to evolutionary issues on human adaptive sociality.

A-0625

THE TIME-COURSE OF ACTION EFFECT ANTICIPATION IN RESPONSE PLANNING: AN EVENT-RELATED POTENTIAL (ERP) STUDY

Neil Harrison, Michael Ziessler

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The anticipation of action effects is a basic process that can be observed even for key-pressing responses in a stimulus-response paradigm. In Ziessler, Nattkemper and Vogt's

(2012) experiments participants first learned arbitrary effects of key-pressing responses. In the test phase an imperative stimulus determined the response, but participants withheld the response until a Go-stimulus appeared. Reaction times were shorter if the Go-stimulus was compatible with the learned response effect. This is strong evidence that effect representations are activated during response planning. We repeated the experiment using ERPs. Significant compatibility effects on the Go-stimulus locked ERPs were mainly found for the early perceptual P1 component and the later frontal P2 component. P2 amplitudes, likely associated with evaluation and conflict detection, were higher when Go-stimulus and effect were incompatible; presumably, incompatibility increased the difficulty of effect anticipation. P1 differences were found only in the second half of the experiment and for long SOAs between imperative stimulus and Go-stimulus, when the effect was fully anticipated and the perceptual system was prepared for the effect-compatible Go-stimulus. The onset of the response-locked LRPs occurred earlier under incompatible conditions indicating extended motor processing. These results strongly suggest that effect anticipation affects all phases of response preparation.

A-0626

BERLYNE REVISITED: EVIDENCE FOR THE MULTIDIMENSIONAL NATURE OF HEDONIC VALUE IN THE PERCEPTION OF VISUAL ARTS

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Berlyne (1971) posited an inverted-U relationship between hedonic value and complexity in arts appreciation, but converging evidence for his theory is missing. However, definitions of hedonic value are manifold and comprise concepts such as liking, beauty and pleasantness. Here, we examine whether hedonic value can be understood as a one- or multidimensional concept in the perception of natural scenes and visual arts when complexity is defined by the number of elements (Nadal et al., 2010). Stimuli comprised 96 affective natural scenes and 96 presentational paintings, presented for 5 s to 138 female participants. Ratings of hedonic value (beauty, pleasantness or liking), arousal, complexity and familiarity were collected on 7-point scales in three conditions per stimulus set. For natural scenes, we observed very strong correlations (all $r_s > .91$) between beauty, pleasantness and liking and a negative association with complexity. For paintings, the measures of hedonic value were less strongly correlated (all $r_s > .70$) and the association with complexity was significantly negative for pleasantness and positive for beauty. These findings held true when controlling for effects of familiarity and art interest, thus pointing to a multidimensional nature of hedonic value when perceiving artistic stimuli.

A-0627

LOW AND HIGH-LEVEL VISUAL STIMULI COMPETE FOR VISUAL-SHORT TERM MEMORY STORAGE CAPACITY

Hagit Magen

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A fundamental question in visual short-term memory (VSTM) relates to how its limited storage capacity is shared among stimuli from different dimensions that are maintained simultaneously. While performance in the real-world often requires the simultaneous maintenance of low and high-level stimuli such as colors and objects, little is known about how these two types of stimuli interact in VSTM. The present study used a change detection task to examine whether low and high-level stimuli share storage capacity. Participants maintained either items from a single dimension, or items from both low and high-level dimensions. Items from the two dimensions were either maintained separately (i.e., participants were probed on each dimension separately) or as bound objects (i.e., participants were probed on the bindings of the two dimensions). The results demonstrated that low and high-level visual stimuli compete for the same VSTM storage capacity. Adding features from a second dimension to the memory set, led to decreased accuracy relative to maintaining features from a single dimension, both in the separate and binding conditions. Thus, when low and high-level stimuli are maintained together, the basic units of VSTM are not bound objects but separate features that compete for the same resource.

A-0628

IS BELIEF IN FREE-WILL UNDER OUR CONTROL? SELF REPORTED MIND WANDERING IS NEGATIVELY ASSOCIATED WITH BELIEF IN FREE-WILL

Kelly Rowe, Michael Mrazek, Brett Quimette, Jonathan Schooler

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Free-will has been a topic of interest since the dawn of human intellect. Theologians' have debated its existence, philosophers have argued its implications and social psychologists have begun analyzing its associated behavioral outcomes. While previous psychological research reveals how individual differences in beliefs in free-will impact various pro-social behaviors the source of these beliefs remains unknown. One possible explanation is that belief in free will stems from meta-cognition. We hypothesized that awareness of limitations in cognitive control may lower belief in free-will. In this study we explored the relationship between mind wandering, an individuals' capacity to stay on task by controlling inner mental processes, and belief in free-will. 579 participants (mean age 35, 56% women) completed a mind wandering scale and a free-will belief questionnaire. As predicted, the frequency of self reported mind wandering was negatively associated with belief in free-will ($r = -.15$, $p < .001$). These results suggest that individuals who experience greater cognitive control of their minds, perceive themselves to possess greater free-will. This conclusion was further supported by the finding that belief in free-will was

positively correlated with perceived self-control ($r = .19$, $p < .001$) and perceived self-control was negatively correlated with mind wandering ($r = -.65$, $p < .001$).

A-0629

IS BELIEF IN FREE-WILL UNDER OUR CONTROL? SELF REPORTED MIND WANDERING IS NEGATIVELY ASSOCIATED WITH BELIEF IN FREE-WILL

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A-0630

SPATIAL MAGNITUDE MODULATES THE PERCEIVED DURATION OF DEVIANT STIMULI: EVIDENCE AGAINST ATTENTIONAL THEORIES OF THE ODDBALL EFFECT

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The oddball effect is the perceived temporal dilation of a deviant stimulus in a train of homogeneous stimuli. A number of models have proposed attentional explanations of the oddball effect, according to which temporal dilation occurs because of the violation of perceptual expectations in a manner akin to repetition suppression effects. On the other hand, the perceived duration of a stimulus is known to depend on its spatial magnitude, such that smaller stimuli are perceived to be shorter in duration. In order to investigate these competing effects, we examined the role of the spatial magnitude of oddball stimuli in an oddball duration discrimination task by varying the duration and physical size of the oddball stimulus. Participants judged whether the oddball was shorter or longer in duration than the standard stimuli. The perceived duration of oddballs

varied as a function of spatial magnitude: relative to the standard stimuli, larger oddballs were perceived to be longer in duration whereas small and equivalent oddballs were perceived to be shorter in duration. These results are inconsistent with attentional models of the oddball effect and warrant that such models incorporate the influence of spatial magnitude on perceived duration.

A-0631

FURTHER EVIDENCE THAT SELECTIVE CUES TO INTENTIONALLY FORGET MAY CAUSE FORGETTING

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By using an adapted list-method directed-forgetting paradigm, Delaney et al. (2009) showed that providing participants with a cue to selectively forget one set of items of the previously studied list make these items less recallable than the items in the same list that were cued-to-remember. Although this selective directed forgetting (SDF) effect has now been found with slightly modified procedures and different populations, multiple failures to replicate the effect have been also published. The main goal of the present study was twofold. First, we aimed to replicate the SDF effect in young adults with a procedure similar to that one used by Delaney et al. Second, we aimed to assess to what extent the memory cost associated with the cue to selectively forget depends upon the amount of to-be-forgotten items relative to the amount of to-be-remembered items. After studying a list consisting of 18 sentences (about two or three different characters, depending on the condition), half of participants were cued to keep remembering all items whereas the other half was cued to forget sentences about one of the characters. Our results show a clear SDF effect regardless of the proportion of to-be-forgotten information.

A-0632

VISUOMOTOR PRIMING ON A GRASPING TASK

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The capacity of planning an action in advance questions the real-time planning hypothesis predicted by the two pathways model of visual perception. In a set of experiments, we used a visuomotor priming paradigm to investigate the retention in memory of motor components. More precisely, we manipulated first of all the congruency of orientation and/or identity between prime and target. In addition, we also manipulated context of priming (blocked versus mixed experimental design). Analyses focused on the initiation times, maximum grip aperture and grip orientation. We found facilitator priming effects on initiation times when the orientation was congruent between prime and target only when the prime was identical to the target. We also found that these priming was present independently of priming context. It was observed in both, blocked and

mixed experimental design. No priming effect was found on maximum grip aperture but significant effects were found on the grip orientation, but only when the final grip orientation was close to the start grip orientation. The results are discussed in terms of pertinence of the prime for the grasping task, the context of the grasping and finally in terms of changes between start and end positions of the grip.

A-0633

GOAL ATTAINMENT AND MEMORY SUPPRESSION: ZEIGARNIK RELOADED

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In two series of experiments we investigated the effect of goal fulfilment on accessibility of episodic memories. First, based on the pioneering work of Zeigarnik (1927) we developed a novel paradigm to test the role of goal attainment in episodic retrieval. In this task subjects have to complete word stems of category exemplars belonging to a given category, the completion of words were randomly interrupted in half of the categories. Following a delay, unexpected free recall, category-cued recall or recognition tasks were conducted. The results show that subjects tend to recall less items from the completed categories in the free recall task whereas such difference is absent in the category-cued recall and recognition tasks. Second, using a list method directed forgetting (DF) paradigm we found that replacing the forget instruction with a memory test, which informed participants that the learning event is finished, DF phenomena (i.e. lower recall rate of to be forgotten items compared to baseline items) can be simulated. We suggest that a forget instruction in a learning task is an effective goal completion cue. These results suggest that goal completion puts goal-relevant information in an available, but in a less accessible form for later retrieval.

A-0635

FACIAL FEEDBACK EFFECT IS MODULATED BY EMOTIONAL VALENCE AND BY THE HUMAN FACTOR.

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Facial feedback hypothesis (FFH) states that facial expression can modulate emotional experience. Recently some studies proposed that the mirror system can modulate this mechanism: However, its role is still not clear when emotions are taken into account. There are no studies comparing stimuli that feature a known emotional valence (the International Affective Picture System - IAPS) or the presence of human and the consequent involvement of the mirror system. In the present study we investigate the effect of different categories of stimuli (IAPS) on the methodology of keeping, in different position, a pen in the mouth. In Study 1 participants evaluated the valence of different categories of IAPS while keeping a pen in the mouth (simulating smile), or without it. In study 2, one group kept a pen in the mouth simulating

a frown expression while another group simulated a smile expression while evaluating the same stimuli used in Study 1. Our results show that the facial feedback effect seems to be modulated by the presence of human and by the valence of the stimuli suggesting a possible involvement of the mirror system.

A-0637

A CONDITION FOR PROACTIVE INTERFERENCE IN WORKING MEMORY

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Proactive interference usually describes the detrimental effect of previously relevant information on the maintenance of currently relevant information. Recently, Bunting (2006) extended this term to interference from information that is still relevant to the task. The former kind of interference is labeled distal proactive interference (DPI), the latter proximal proactive interference (PPI). It is argued that at least theoretically, it seems questionable to subsume both types of interference under the same heading. However, it poses the interesting question if the effect of DPI depends on whether potentially interfering information was encoded under high or low PPI. This is one facet of the question if DPI and PPI interact, which was pursued in the first experiment. An operation span task was employed with to-be-remembered words varying in semantic similarity within (PPI) and between (DPI) trials. Results show that DPI only has an effect if PPI is absent and vice versa. It is hypothesized that if one type of interference is present, respective inhibition functions are already activated when the other type of interference occurs. This implies that performance varies over a series of trials as a function of experience with proactive interference, which is tested explicitly in the second experiment.

A-0638

UNPLEASANTNESS OF BEING WRONG: AFFECTIVE CONSEQUENCES OF ERRORS IN PERCEPTUAL CATEGORIZATION

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The present research is aimed at the analysis of emotional reactions to errors in absence of external feedback. Compared to correct answers, errors are related to more uncertainty and conflict as they contradict available information. Following Berlyne (1970), we suggest that this conflict will result in negative affect. Consequently, as affect can diffuse from one source to another (Zajonc, 2001; Schwarz & Clore, 1984), errors should influence preference ratings for objects involved in the task. We conducted two studies to test this prediction. In Study 1 subjects categorized masked images (humans, animals, non-living objects), and then rated their confidence and liking for masked image. Both ratings were more positive for correct answers than for errors and mediated each other's correlation with answer correctness. Subjects in Study 2 made liking, confidence or emotionally-neutral "dynamism" ratings. Confidence and liking ratings but not "dynamism" were higher after correct answer than after error. These results replicate the results of Study 1 and show that the observed correlation cannot be

explained by non-specific activation. In sum, these studies provide initial demonstration of the relationship between errors and affective evaluation, showing that people do not like stimuli associated with incorrect answer. Supported by RFBR grant #12-36-01294.

A-0639

COMBINED ATTENTION: A NOVEL WAY OF CONCEPTUALIZING THE LINKS BETWEEN ATTENTION AND BEHAVIOR

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Attention is important for behavior. We show that complex behavior involves joint activity in multiple attention systems -- a process that we call combined attention. We demonstrate that combined attention (i) emerges when multiple attention systems are engaged by a single behaviorally relevant stimulus, (ii) involves flexible allocation of processing resources, and (iii) is expressed similarly in manual and oculomotor measures. These data provide a new framework for linking attention and behavior and suggest an important role of combined attention in maintaining atypical behaviors that depend on combining the meaning of the incoming stimuli with individual goals (e.g., addiction).

A-0640

SENSITIVITY TO BASE AND SUFFIX UNITS IN CHILDREN DURING WORD RECOGNITION: AN ENGLISH-FRENCH CROSS-LANGUAGE COMPARISON

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Recent studies have pointed to children's sensitivity to morphological structure during word recognition. However, reliance on morphological units may depend on language properties. For example, the French language contains many derived forms, while the English language contains more words formed via compounding. It has already been shown that French-speaking children developed morphological awareness more quickly than English-speaking children (Duncan, Casalis, & Colé, 2011). The objective of the present study is to examine whether the extent of the influence of morphology on children's reading is dependent on language. For this purpose, a cross-language comparison study was conducted. French and English-speaking children performed a visual lexical decision task. We manipulated the presence of bases and suffixes in words and pseudowords to compare their contribution to lexical decision performance. Word frequencies were equated across conditions and across languages. Similarly, items were matched on bigram frequencies. Accuracy and response latencies were measured. Although both English- and French-speaking children were showed to be sensitive to the morphological structure of words, the two groups of children displayed different effects of bases and suffixes, indicating an influence of language on morphological effects among young readers.

A-0642

VISUAL SENSORY MEMORY DEMONSTRATES ORIENTATION ANISOTROPY

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We investigated whether visual orientation anisotropy (known as oblique effect) exists in non-attended visual changes using event-related potentials. We applied visual mismatch negativity (vMMN) which signals violation of sequential regularities. In the periphery task-irrelevant Gabor patches were displayed in an oddball sequence while subjects performed tracking task in the central field. A moderate change (50°) in the orientation of stimuli revealed no consistent change-related components. However we found orientation-related amplitude differences around 170 ms in occipito-temporal areas. In a supplementary experiment we determined the amount of orientation difference needed for change detection in an attended paradigm. Results exhibited the classical oblique effect; subjects detected 10° deviations from cardinal directions, while threshold from oblique directions was 17°. These results provide evidence that perception of change could be accomplished at significantly smaller thresholds, than what elicits vMMN. In Experiment 2 we increased orientation change to 90°. Deviant-minus-standard difference was negative in occipito-parietal areas, between 100-200 ms after stimulus onset. VMMNs to changes from cardinal angles were larger and more sustained. Change-related sensory memory processes seems to occur before evaluation of stimulus orientation is completed. Reduced sensitivity of vMMN might be due to utilization of incomplete input from the orientation evaluation processes.

A-0643

WHAT IS AUTOMATICALLY ACTIVATED IN CONFLICT TASK? EVIDENCE FOR RULE-BASED (AND NOT FEATURE-BASED) INCORRECT RESPONSE ACTIVATIONS.

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In spatial compatibility tasks, like Fitts or Simon tasks, it is usually easier to respond on the same side to a stimulus (compatible mapping) than on the opposite side (incompatible mapping). This effect is explained by stating that stimulus position automatically activates the ipsilateral response. Here, subjects performed different versions of "mixed Fitts tasks": they had to respond according to the side of the stimulus, with intermixed compatible and

incompatible mapping trials. Although reaction times showed a compatibility effect, no modulation showed-up on errors, but this is actually due to a strong sequential effect: errors were more frequent when the mapping switched than when it was repeated. Distribution analyses and electromyographic data indicate a large tendency to "automatically" re-activate the mapping of the previous trial. Incorrect response activation seems hence more "rule-based", i.e due to an automatic incorrect rule activation, than "feature-based", i.e due to the automatic activation of the response corresponding to the stimulus position.

A-0644

EXPLORING CONSEQUENCES OF INTERFERENCE RESOLUTION DURING RETRIEVAL: BOUNDARY CONDITIONS ON RETRIEVAL-INDUCED FORGETTING

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Forgetting of memories related to a cue occurs after repeated retrieval of a target memory associated to the same cue. This phenomenon is called retrieval-induced forgetting (RIF). The most influential theory of RIF, the inhibition account, proposes that RIF involves inhibition of memory representations, is interference dependent, leads to cue-independent forgetting, and that the level of forgetting is independent of target memory strengthening. We tested three of these assumptions. In a novel paradigm able to assess interference in an item-by-item design, Experiment 1 tested interference dependence of RIF, and found that RIF was indeed a function, albeit nonlinear, of interference. Based on results of Experiment 1, using an analysis that involved only items inducing a sufficient level of interference to generate RIF, Experiment 2 tested cue-independence of RIF, and found no evidence for cue-independence. Experiment 3 tested strength-independence of RIF, and found that RIF occurs only when target memories are strengthened to a level that reduces their long-term forgetting considerably as compared to manipulations that lead to strengthening only on the short run. We suggest that RIF might be the result of processes that resolve interference during retrieval, yet these processes lead to strength- and cue-dependent forgetting.

A-0645

DO LISTENERS USE VISUALLY-SPECIFIED INFORMATION ABOUT COARTICULATION IN SPEECH PERCEPTION?

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The classic McGurk effect, in speech perception, demonstrates that visual information about vocal gestures of a given phonetic segment, influences listeners' perception of the same segment (McGurk & MacDonald, 1976). The question of whether visual information about a preceding segment influences the perception of a target segment has yielded inconclusive answers with some studies demonstrating visual precursor effects (e.g. Fowler et al., 2000; Mitterer, 2006) and others failing to find such

an effect (e.g., Holt, Stephens, & Lotto, 2005). This question is significant because accounts differ on whether listeners use gestural (e.g., Fowler, Brown, & Mann, 2010) or solely acoustic information (e.g., Lotto & Kluender, 1998) about the preceding segment to alter their perception of a given segment in a phenomenon called compensation for coarticulation (Mann, 1980). We reexamined this question by using stimuli from past studies (Fowler et al., 2000) with controls designed to address specific criticisms of Holt et al. (2003). Through our results, we identify specific conditions that either elicit or fail to elicit visual influences of the precursor on target speech perception. We discuss the implications of our findings on the past debate and, in general, for accounts of compensation for coarticulation.

A-0646

SACCADIC EYE MOVEMENTS AND THE NON-STRATEGIC INFLUENCE OF REWARD.

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Two experiments investigated the potential impact of reward on saccadic selection. In one experiment, participants made a pro-saccade to a single target. In the other, participants completed a modified visual search task. In both experiments, an irrelevant distractor was presented in each trial and target selection was randomly rewarded. The results demonstrated that receipt of reward following selection of a target that is characterized by an irrelevant unique color causes subsequent stimuli characterized by this color to be prioritized. In looking at saccade trajectories, the results showed that saccades curve towards a reward associated distractor when the eyes are rapidly deployed; when deployment was slower, results showed the eyes curved away from a reward-associated distractor. In the visual search task, further analyses demonstrated that reward primed the target representation only when target selection was efficient. In this work, the effect of reward did not appear strategic in nature, as our experimental paradigm provided no opportunity for participants to establish a preference for any specific stimulus type. These results suggest that reward has a low level facilitatory impact on distractor salience that causes a subsequent increase in the need for inhibition.

A-0647

DO MEASURES OF CONSCIOUS AND UNCONSCIOUS PERCEPTION REFLECT QUALITATIVELY DIFFERENT MECHANISMS?

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There is currently no consensus regarding what measures are most valid to dissociate conscious and unconscious perception or whether the reported dissociations reflect qualitative or only quantitative differences between the underlying mechanisms. Vorberg, et.al, (2003) used metacontrast-masking and varied the time interval between the stimulus and mask (or SOA). This manipulation affected conscious perception, indexed by forced-choice discrimination performance (objective measure) and unconscious perception, indexed by action priming (indirect measure), in qualitatively different ways,

suggesting that these measures reflect distinct processes. Here, we challenged this claim by applying the SOA manipulation within the same block of trials and under the same task demands for all measures, while also measuring subjective perception (using a visibility scale ranging from 0 to 3). Our results suggest that: (a) When conscious perception is prevented by meta-contrast masking, direct measures of perception (subjective and objective) reflect the same mechanism, but with different sensitivities. (b) SOA effects on action priming and on conscious processing follow the same pattern when assessed under similar attentional demands but (c) action priming remains significant when visibility is null. Thus, whether the mechanisms underlying unconscious processing, indexed by indirect measures, and conscious perception, are qualitatively different, remains an open question.

A-0648

APRAXIA AND ALZHEIMER'S DISEASE: REVIEW AND PERSPECTIVES

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According to diagnostic criteria from DSM-IV, apraxia is one of the cognitive deficits that characterized Alzheimer's disease (AD). Whereas the study of memory as well as aphasia and dysexecutive syndrome has been well documented, apraxia has received very little attention. In order to give an overview of the impairment caused by the disease, we review the literature on apraxia and AD for transitive, meaningful intransitive and meaningless intransitive gestures.

Concerning the transitive gestures, the performances improve when the patients hold the tool in hand and when the tool can be used with the associated object. Concerning the knowledge about manipulation and function of tools, the results show an impairment of these two kinds of knowledge. In AD as well as in other degenerative diseases, transitive gestures seem to be more impaired than intransitive gestures. Within intransitive gestures, meaningless gestures are very impaired, in particular when a bimanual coordination is required.

Focusing on actual cognitive models of apraxia, these results shall lead us to propose a certain number of interpretations as to the nature of the underlying mechanisms impaired in AD. Finally, we present the main methodological issues preventing firm conclusions from being drawn and we give recommendations for further works.

A-0649

THE RELATIONSHIP BETWEEN LONG-TERM MEMORY AND CHANGE DETECTION

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Although memory for changed items following a change detection task has been widely investigated, the extent of memory distortion made in the change detection process is not clear. In the present study one-shot change

detection paradigm was utilized. In the experiments, participants were asked to recognize which objects had been changed in the performed change detection task. The results pointed out that memory for items in the change detection task were substantially distorted by observers' expectations. When observers expected a particular set of objects to be changed, they tended to report those objects as changed although the objects had not been changed. Moreover, in some circumstances, participants recognized the objects that were not exist in the change detection task as changed item. Additionally, total fixation duration and the number of fixations made to the unchanged objects during the change detection task were not related to the distorted memories for unchanged objects. The results were discussed in the frame of false memory processes.

A-0650

LITERARY ATTITUDE AFFECTS LEXICAL ACCESS

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In a self-paced reading experiment we measured word-by-word reading times (RT). Most sentences taken from literary texts that could contain rhetorical figures (oxymora, synesthesiae, personifications). We compared two groups of participants: one read under the assumption they were reading sentences taken from literary texts, the other assumed these were taken from newspaper articles. The manipulation was implemented by: a) a pre-test reading of literary or newspaper texts, b) specific instruction and c) different filler sentences for the two groups.

We found that behavioral costs for local compositional semantic mismatch are greatly reduced for the literary group with respect to the news group. A random mixed model also showed reduced RT effects of word length and frequency for the literary group. The results are discussed in relation to Zwaan (1994) that used short multi-sentence texts with no foregrounding literary elements, finding an RT advantage for the news group.

We conclude that people find it easier to read a text that contains representative features of genre they expect.

Moreover the effect on lexical and orthographic variables show that this top-down influence has an impact on low-level language processes such as lexical access.

Zwaan (1994) JEP-LMC, 20, 920-933.

A-0651

COSTS OF BINDING AND UNBINDING COLOR AND SHAPE

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Some researchers assume that memory demands in visual working memory are a function of the number of objects not of features because each object can bind multiple

features and binding is for free. In contrast, others suggest that features are memorized independently and therefore with an increasing number of features the demands increase even if the number of objects is constant. We used pupil based measures and EEG in a visual change detection task to estimate storage demands. Changes of pupil size are supposed to be an indicator of mental processing effort. Our pupil based data suggest that processing effort is the same when subjects were instructed to store two features of an object (shape and color) compared to only storing one feature. Furthermore we show that slow wave potentials are not a function of the number of features to be stored but show differences between memorizing colors and shapes. In general our data support the object based position but it seems to make a difference what exactly these objects are.

A-0652

EARLY AUDITORY EMOTION PROCESSING IS SENSITIVE TO DISTINCT SPATIAL FREQUENCY PREDICTIVE INFORMATION – AN ERP STUDY OF FACE-VOICE PERCEPTION

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Emotion identification is an important aspect of social communication that happens across modalities, combining emotional cues such as a speaker's facial and vocal expression. Naturally, facial movements precede auditory information in time, enabling cross-modal predictions. The existing literature on audiovisual emotion integration has mainly focused on static expressions. Using dynamic emotional face-voice stimuli we aimed at exploring the effects of visual-to-auditory predictions on early auditory emotion processing (N1-P2 complex of the event-related potential). To alter the predictive strength of the visual stimulus spatial filtering was applied to the faces. Thus the contribution of high and low spatial frequencies (SF) to cross-modal prediction generation could be investigated. In an auditory condition, subjects listened to a random sequence of angry and neutral interjections and judged the voice conveyed emotion. In an audiovisual condition, interjections were accompanied by face videos of the speaker. ERPs were suppressed to angry as compared to neutral interjections in the auditory condition. Interestingly, we found that the absence of mid to high SF in the visual stimulus (lowpass filter) modulates the auditory emotion effect. This interaction of SF content and auditory emotion processing argues in favor of a predictive account in audiovisual integration of socially relevant dynamic information.

A-0653

THE DIFFICULT TRUTH EFFECT: ARE DECEPTION AND HONESTY SO DIFFERENT?

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Behavioral and neuroimaging studies consistently report that deception is associated with increased cognitive load compared to truth-telling. However, the difficulty associated with honest and deceptive responses might depend on the social context. To study this phenomenon, Speed-Dating Task has been developed. It is a variant of simple question-responding paradigms, which avoids instructed lying and introduces social context to the subject's responses. Social context is provided by varying degree of consistency between subject's and date's attitudes. For approximately half of the questions there is inconsistency between subject's true attitude and date's attitude, which can be resolved either by responding in line with either own or date's attitude. Compared to honest responses in the context of consistency, both honest and deceptive responses in the context of inconsistency were associated with longer RTs. We interpret this difference as a result of inhibitory process necessary to inhibit the response inconsistent with the subject's strategy, regardless of the response's honesty. We call the increase in RT for honest responses in the context of inconsistency the 'difficult truth effect'.

A-0654

TOUCHING CONSCIOUSNESS - USING SOMATOSENSORY STIMULATION IN DETECTING CONSCIOUS RESPONSES

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Available methods to assess the presence of consciousness are far from desired accuracy. Neuroimaging techniques, although promising, are usually too expensive and not always possible to conduct on patients. In our pilot studies, we have tested a novel method based on EEG signal and somatosensory steady-state evoked potentials (SSSEP). We have focused on cortical arousal as a sign of the ability of cortex to uphold conscious processes. Spatiotemporal and quantitative properties of the brain's response to trans-cutaneous electrical stimulation (TES) were chosen as markers for the level of cortical arousal. Following the argumentation proposed by Massimini, during sleep the breakdown of cortical long-range effective connectivity occurs in similar way to damages in patients with impaired consciousness. Therefore deep NREM sleep was used as a model of impaired neural connectivity. Fifteen healthy young volunteers were tested in two experimental conditions: under normal consciousness and in deep sleep. A number of different modulating frequencies were used to investigate the most sensitive to level of arousal. Compared to awake condition, an effect of reduced amplitude was observed in the sleep condition. Overall results encourage extending the study on patients with impaired consciousness.

A-0655

TESTING THE RETURN OF FEAR AFTER A RECONSOLIDATION MANIPULATION OF FEAR MEMORY

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The main problem with the inhibition based techniques in preventing of return of fear memory is the fact that extinguished fear is recovered as a function of variety of processes. To work out, recently it's been demonstrated that it would be possible to manipulate update process of fear memory by performing extinction during the reconsolidation time window. However, there is little known about its behavioral implications. We examined the levels of extinction performed during the reconsolidation process of fear memory by the tests of retardation of acquisition, disinhibition, reinstatement, spontaneous recovery, and re-evaluation (high/low). The participants (N=150) were subjected to a standard discriminated conditioned procedure in which a square shape in two different colors served as CSs. During the acquisition phase, 38% of CSs+ were paired with electrical stimulation. Extinction trials were performed in three groups (extinction without reminder, 10-min after reminder, and 6-hr after reminder). In the next phase a re-extinction took place to assess spontaneous recovery effects. Additionally, aforementioned tests were performed to measure the persistence of extinction of fear reactions. The results indicated that although 10-min group showed significantly least amount of recovery, there was no any other significant reconsolidation update effect measured by the above tests.

A-0657

THE COST OF UPDATING OBJECT-FILE INFORMATION IN SHORT-TERM MEMORY

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The mechanisms that allow us to ignore salient visual information when it is irrelevant to our attentional set have been debated. Folk, Remington and Johnston's (1992) reported that in search for a color-defined target, an irrelevant-color precue does not affect performance (e.g., Folk & Remington, 1998), suggesting that irrelevant information is simply filtered out. Yet, several studies have reported a same-location cost: an irrelevant-color precue delays response when it appears at the same vs. at a different location relative to the target. Here, we investigated the boundary conditions of this cost in order to identify its underlying mechanisms. Our results show that the same-location cost is unrelated to feature-based inhibition, fast attentional disengagement or masking. Instead, they suggest that it reflects the cost of updating the information associated with an object across space and time, in short-term memory. While previous research has underscored the role of object-file formation in perception, how information pertaining to existing object-files is updated has not been addressed. The present findings suggest that such updating incurs a cost that accounts for effects that have traditionally been attributed to goal-directed attention.

A-0658

TRANSLATION AND VALIDATION OF MCQ-30: A PILOT STUDY ON PAKISTANI ADULTS

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The present study aimed, first, to translate the MCQ-30 in National language (i.e., Urdu) of Pakistan and second, to analyze the psychometric properties (reliability and validity) of the Urdu translated version of MCQ-30 in Pakistani adults. The process of translation included forward translation, backward translation and discussion with bilingual experts and professionals of psychology. The final Urdu version of MCQ-30 was tested on 50 adults including males (N=25) and females (N=25), all married and with children. The randomly selected samples were taken from different areas of Bahawalpur City. The reliability of scale was assessed through analysis of Cronbach's Alpha and test re-test reliability. Cross language validity of the MCQ-30 English and Urdu Versions are 0.69 (English-Urdu) and 0.62 (Urdu-English). Reliability of the Urdu translated version of SPS inferred by Cronbach's Alpha ranges from 0.57-0.67 for the five subscales of the MCQ-30; and test re-test reliability coefficient is 0.72.

A-0659

PRODUCT PLAUSIBILITY CHECKING IN TYPICAL ACHIEVERS AND IN CHILDREN WITH MATHEMATICS LEARNING DISABILITY (MLD)

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It has been suggested that in verification tasks, participants use two competing strategies simultaneously: retrieval of the true answer and comparing it with the proposed answer and checking the plausibility of the proposed answer based on its numerical features. To identify the executed strategy, Rousselle and Noel (2008) suggested three indications: the presence of distance effect, a difference in response times between implausible and true answers and a difference in problem-size effect between implausible and true answers. Following their suggestion, we examined the development of using plausibility checking in a product verification task in typically achieving 2nd, 4th, and 6th graders and adults, and in 6th and 8th graders with mathematics learning disability (MLD). False proposed answers differed in their plausibility by their distance from the true answer and their relatedness with the true answer via a shared multiplication row. Results show that typical achievers use plausibility checking from 2nd grade onward. Sixth graders with MLD showed only partial indications of using plausibility checking, leaving the strategy they use in doubt. Eighth graders with MLD showed all indications of using plausibility checking. Nevertheless, their performance pattern deviated from the pattern seen in typically achieving children.

A-0660

EFFECTS OF INTENSE MUSICAL TRAINING AND DEAFNESS ON SPATIAL ATTENTION: EVIDENCE FROM LINE BISECTION

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Individuals tend to show a slight leftward bias („pseudoneglect“) when asked to bisect a line in either the visual or haptic modality, possibly reflecting a right-hemisphere dominance in spatial attention. Interestingly, when asked to bisect visual lines musicians have been found to be more precise than non musicians and also to show a slight rightward bias (Patston et al., 2006). Here we show that deaf individuals are also more accurate than hearing individuals in bisecting visual lines, and that they show a slight tendency to bisect to the right of the true center, resembling the pattern of musicians. Interestingly, we observed the same pattern in the haptic modality: when asked to bisect haptic lines, the musicians we recruited were more accurate than non musicians, and showed a slight tendency to bisect to the right of the true midpoint. Deaf individuals showed a more variable pattern depending on the hand used to bisect the line: with the left hand, a clear rightward bias emerged. Overall, our data show that deafness and intense music training may have similar effects on visuo-spatial attention.

A-0661

JOINT TASK REPRESENTATIONS

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People acting together have a tendency to form representations of each other's tasks. This task co-representation may lead to interference between their own and their co-actor's task. A different way of including a co-actor in one's planning is to form joint task representations that specify the relation between one's own and the other's actions. In this talk, we will provide evidence for joint task representations. In our study, pairs of participants responded to hand movements that were either performed by two individuals who used one hand each or by an individual who used both hands. Apart from the difference in the number of observed agents, the observed hand movements were identical. If co-actors form action plans that specify the actions to be performed jointly, then participants should have a stronger tendency to mimic actions performed by a dyad than individual actions. Confirming this prediction, the results showed larger mimicry effects when participants responded to dyadic actions than when they responded to otherwise identical individual actions. This suggests that representations of joint tasks modulate automatic perception-action links and facilitate mimicry at an inter-group level. Implications for joint action and cultural transmission of joint skills will be discussed.

A-0662

SEPARATING COMPONENTS OF TASK-SET RECONFIGURATION WITH COMBINED EEG AND EYE-TRACKING

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Theoretical accounts of task-set control, including computational models, assume task-set reconfiguration (TSR) is multi-componential. However, the identity, order and timing of components are debated. For example, in ECTVA (Logan & Gordon, 2001) all parameters are transmitted in parallel, while in CARIS (Meiran, Kessler & Adi-Japha, 2008) processing is serial, with the best fit achieved if attentional resetting is in temporal proximity to stimulus onset. We conducted a task-switching experiment while simultaneously recording brain potentials and eye-movements. A known ERP 'signature' of preparation for a switch tasks is a switch-induced positive-polarity deflection in the late part of the preparation (pre-stimulus) interval – from ~400-500 ms following the onset of the task cue. We have also previously documented a switch-induced delay in fixating the task-relevant region, indicative of the need to re-orient attention during a switch. Here we examined the relative timing of the ERP switch-related positivity and attentional re-orienting, indexed by the fixation 'landing' on the relevant region. Analyses of ERPs and landing time distributions showed that re-orienting attention, even when late, preceded the onset of the ERP positivity. This supports a serial, bi-/multistage, model of TSR and suggests that attentional re-orientation occurs before other reconfiguration processes reflected by the positivity.

A-0663

AN INTERACTIVE ACCOUNT OF VISUO-SPATIAL ASYMMETRIES: DEVELOPMENTAL AND CROSS-CULTURAL EVIDENCE

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A growing amount of evidence confirms the influence of the reading/writing scanning habits on visuo-spatial processing (for a review, see Chokron et al., 2010), although this phenomenon has been so far testified mainly as a lateralized shift of the subjective centre in line bisection tasks. The present study contributed to this issue by systematically analyzing the influence of reading habits on a star cancellation task (Wilson et al., 1987). The task was presented on a graphics tablet, allowing recording of both chronometric and spatial (i.e., measured in x/y vector coordinates) parameters of the performance. In a first experiment, we explored the developmental trajectory, and thus the impact of formal education, by comparing the performance in a large sample of preschool- and early school-age children. In a second experiment, the role of reading direction was explored under a cross-cultural

perspective, by involving monolingual Italians (i.e., reading from left-to-right), monolingual and bilingual Israelis (i.e., reading from right-to-left only – Hebrew – or also from left-to-right – English –). Results from both experiments showed that visuo-motor performance was modulated by the reading direction, therefore favoring the view of an interaction between cultural, i.e., the directional scanning, and biological factors, i.e., the hemispheric specialization, in modulating visuo-spatial processing.

A-0664

CONTROL OVER INFORMATIONAL AND TASK CONFLICTS DURING MAINTENANCE AND UPDATING MEMORY TASKS

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Performance of the Stroop task reflects two conflicts—informational (between the incongruent word and ink color) and task (between relevant color naming and irrelevant word reading). The task conflict is usually not visible and is only seen when task control is damaged, relaxed or otherwise occupied. Findings of overlapping brain regions involved in working memory and control processes lead to the assumption that both informational and task conflicts will be more robust under high working memory demand conditions. We combined the Stroop task with a working memory updating task (Experiment 1), a maintenance task (Experiment 2), and a combined updating and maintenance task (Experiment 3). In all 3 experiments we had a low load condition (in which the memory task was easy) vs. a high load condition (in which the memory task was difficult). Results indicated enlarged Stroop interference (indicating increased informational conflict) and reduced Stroop facilitation effects (indicating increased task conflict) when load was high in all experiments. Conflicts were larger in the updating tasks compared to the maintenance tasks. We conclude that when load is high, both informational and task control are reduced. Updating, more than maintenance, overlaps with control processes, causing them more interruption.

A-0665

PREDICTING THE SUBJECTIVE EXPERIENCE AND AGE OF AUTOBIOGRAPHICAL MEMORIES BASED ON CONTENT

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In the present study we investigated whether the phenomenological experience related to a retrieved autobiographical memory could be predicted from its content (i.e., the semantic representation). Previous studies have shown cue modality effects in phenomenological experience of autobiographical memories. Olfactory evoked memories have for example been rated as more emotional and produce a stronger feeling of being brought back to the occurrence of the event, than memories

retrieved with other cue types (e.g., Willander & Larsson, 2006, 2007). Eighty participants ranging in age between 19-40 years were asked to retrieve autobiographical events by means of cued retrieval. Retrieved memories were verbally described, rated on five phenomenological dimensions (i.e., pleasantness, feeling of being brought back, vividness, intensity, importance) and dated according to the age at the event. The retrieved events were transcribed and subjected to latent semantic analyses. The results showed that the semantic representations of cued autobiographical memories reliably predicted the age at event, pleasantness, a feeling of being brought back in time to the occurrence of the event, vividness, emotionality and importance. In conclusion, the content of a retrieved autobiographical memory predict reliably both temporal and phenomenological aspects of autobiographical memories.

A-0666

THE CRUCIAL ROLE OF THE DORSAL PATHWAY IN AGRAMMATIC/NONFLUENT PPA

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The present work explores how a dissociation of dorsal pathways provides a unique tool to predict language deficits within the agrammatic/nonfluent Primary Progressive Aphasia variant (Gorno-Tempini et al. 2011). To do so, the connection between frontal and temporal language areas are taken into account, and linguistic processes implemented by distinct pathways are considered.

Current neurocognitive models of language processing (Hickok and Poeppel 2007) provide a framework for a functional neuroanatomy of linguistic processes. Following neurolinguistic research on neural pathways (Catani et al. 2005), recent DTI studies have shown that PPA patients differ from controls with respect to pathways structure. In non-fluent/agrammatic PPA, the ventral tract is found spared while the dorsal tract is damaged (Galantucci et al. 2011).

This work focuses on non-fluent/agrammatic PPA variant, providing a dissociation of linguistic deficits once the distinct dorsal pathways are considered. Since motor speech deficits and agrammatic production are not necessarily both found in order to classify patients into this variant (Galantucci et al. 2011), the present contribution suggests that a dissociation of agrammatism and apraxia of speech, and a dissociation of two distinct dorsal pathways (Friederici 2011) would be useful for a better understanding of both syndromes and anatomical correlates of PPA.

A-0667

LEXICAL ACCESS IN SENTENCE COMPREHENSION: TIME COURSE OF MORPHOLOGICAL PROCESSING

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We will discuss how sentence initial syntactic expectations influence processing of morphological information during reading. We will report three eye tracking experiment, investigating the time course of processing of morphological information of an upcoming word. First experiment investigated the use of sentence initial information (indicating an upcoming plural noun) would

influence parafoveal processing of that noun (e.g. these/this fascinating toy/toys) in English. The readers were more likely to skip the nouns if its morphological information was predicted. Indicating that the reader process morphological information parafoveally. In the second experiment, by manipulating sentence initial information we created an expectation for a negative verb in Turkish. If readers are more likely to access morphological information from the parafovea when this information is predicted, this should reflect itself in skipping rates and following fixation durations on the parafoveal word. Third experiment manipulated syntactic prediction by using specific case markers at sentence initial nouns, which require certain verbs. We want to see if the readers are more likely to benefit from parafoveal information before reaching the verb, where the verb was either typical or not. We will discuss the implications of these results for lexical access models for sentence comprehension and reading theories.

A-0668

MEASUREMENT RELIABILITY IN MEGASTUDIES.

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Several databases with lexical decision times for a large number of items are now available. How much of the variance observed in these databases is true item variance and how much is error that can (and should) be ignored? This is indexed by the Intraclass Correlation (ICC), a well known measure for inter-rater reliability.

The ICC can be computed as a function of the split-half correlation, via Sums of Squares (ANOVA) or via Variance Components (mixed effects models). On full data these methods will give the same results, but in the presence of missing data (error responses are typically set to missing) biases can be introduced. It has been stated that missing values should be imputed before computing the ICC of megastudies.

We present simulations that show that ICC estimates from a mixed effects analysis are not biased, contrary to the other methods. This method does not require imputation and applies both to nested designs (each participant sees a lot of items) and crossed designs (each participant sees all items). The simple steps required to compute ICCs using mixed effects models are explained and results for the available megastudies (all between 80 and 90%) are provided.

A-0670

BRIDGING THE FORMAL AND INFORMAL LEARNING FOR CSL LEARNERS FROM THE PERSPECTIVE OF COGNITIVE SITUATED LEARNING

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There is a frequently asked question: "what is the most effective way to learn Chinese as a second language (CSL) for adult beginning learners?" Debates between immersive

instruction and traditional instruction have been going on for many years in the community of adult CSL learner. However, in order to develop effective instruction for CSL learning, one should focus not only the linguistic knowledge but also the social interaction. This investigation proposed a blended instruction design with the characteristics of active, meaningful, social interaction, and test-study cycle practices from the perspective of cognitive situated learning. This blended instruction design was developed by leveraging information technology to implement the repetition of linguistic knowledge in communicative context which practices in real world. The social interaction context would facilitate the learner with just-in-time and on-demand information which situated in the sorts of context in which it makes sense and can be used. Therefore, this design aimed to fulfill the individualized learning requirement such as individual learning portfolio, and feedback in practice. Tablet with WiFi internet connection was adopted to illustrate form-focused knowledge in terms of the advantage of the multimedia, and affordance for personalized learning.

A-0671

ERPS REVEAL A DURATIONAL PROCESSING DEFICIT IN DEVELOPMENTAL DYSCALCULIA.

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Most research on Developmental Dyscalculia (DD) has focused on processes related to symbolic and non-symbolic quantity and on arithmetical skills (e.g., Butterworth et al., 2011). It is unknown whether DD implies deficits in the processing of non-numerical quantity such as time, physical size or luminance. Parents of DD children often report difficulties with time processing and this difficulty has been explained as a failure in the numerical manipulation of time (Cappelletti et al., 2011). The present ERP study compared a group of DD children to a matched control group in the association of sounds with different durations to arbitrary shapes. DD and Controls were trained in the association of three sounds with different duration paired with three concurrently presented shapes. In a test phase, EEG was recorded while the children judged if a shape corresponded to a previously presented sound. The amplitude of an N400-like component was modulated by the correctness of duration-shape associations in the control group but not in the DD group. In contrast, both groups showed this N400 modulation in an equivalent control task, which used varying pitch instead of varying duration. The present data strongly suggest a duration processing impairment in Developmental Dyscalculia.

A-0672

A PROCESS OVERLAP THEORY OF THE POSITIVE MANIFOLD: INTELLIGENCE

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One of the most replicated results in psychology is that people who perform better on one kind of mental ability test tend to perform better on other kinds of

tests as well. This result is called the positive manifold, and is usually described with a general factor, *g*. *g*, in turn, is usually identified with a domain-general, within-individual cognitive mechanism, general intelligence. This interpretation, however, does not sit well with a number of phenomena in cognitive psychology and neuroscience: double dissociations, localization data, and patterns of sex differences all contradict the existence of a general cognitive ability. Moreover, *g* was challenged by Thomson already in early 20th century, who demonstrated that the positive manifold can also emerge if every test draws from a large, common pool of independent resources. However, Thomson's 'sampling model' is also contradicted by empirical results from experimental psychology and neuroscience. We propose an alternative explanation, which is similar to sampling, but is based on a cognitive theory of overlapping item response processes.

A-0673

VISUAL AND VERBAL INFORMATION FOR AND IN SPATIAL MODELS.

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The aim of this presentation is to report results of a large project dedicated to the study of how humans construct and use mental models of spatial information relevant to itineraries in large-scale way-finding situations. The construction of spatial models from various visual inputs (real, film, photos or a virtual environment) or a verbal input (spatial description) was considered. Once acquired, spatial information can be reproduced by the learner in different types of responses, verbal or non verbal, which may in turn affect representations. Dual-task methodology was also used in some of the experiments, and overall the results raise the question of the verbal recoding of spatial information even though encoding is purely visual. These results contribute to characterizing spatial models.

A-0674

BENEFITS AND COSTS OF RETRIEVAL: FROM THE LAB TO THE CLASSROOM

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Although it is well established that retrieval practice may improve memory for practiced information (i.e., the testing effect), retrieval practice may also have negative effects for related information that was not practiced. This retrieval-induced forgetting effect has been widely demonstrated in laboratory settings as well as in applied domains, such as eyewitness memory. However, retrieval practice may also have a positive effect on memory for related information, as is demonstrated in a number of studies using expository texts. We will present a number of recent studies from our lab on retrieval-induced forgetting, retrieval-induced facilitation and the testing effect that used text material and were conducted mostly in educational settings. The practical implications for the classroom are discussed. Based on our findings, we will also discuss when retrieval practice induces forgetting and when it induces facilitation.

A-0675

A PROCESS OVERLAP THEORY OF THE POSITIVE MANIFOLD: WORKING MEMORY CAPACITY

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The positive manifold is not confined to covariance matrices of the intelligence literature: it is also commonly observed when a battery of working memory tasks is administered to a large group of subjects. Hence the process overlap theory also aims at explaining the covariance structures obtained in the individual differences literature of working memory. The theory assumes that any item or task requires a number of domain-specific as well as domain-general cognitive processes and their corresponding neural mechanisms. Domain-general processes involved in executive attention, and mainly tapping the dorsolateral prefrontal cortex, are central to working memory task performance. That is, they are activated by a large number of test items, alongside with domain-specific processes tapped by specific types of tests only. Such an overlap of executive processes explains the positive manifold as well as the hierarchical structure of cognitive abilities. The theory also accounts for a number of other, previously unexplained phenomena in differential psychology, such as the central role of fluid inductive reasoning in cognitive abilities or the higher across-domain variance in low ability groups (differentiation).

A-0676

SPENDING TIME ON ART: THE EFFECT OF CONTEXT ON ART APPRECIATION AND VIEWING BEHAVIOR

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Human experience and behavior interact on various levels. Research in the field of psychological aesthetics investigates cognitive and affective processes involved in the experience of art. However, the relation between art experience and specific aspects of viewing behavior such as viewing time is still unclear. We examined the effect of context on the relation between art experience and viewing time. Two groups of participants viewed an art exhibition either in the museum or in the laboratory while viewing time was recorded with mobile eye tracking. After freely viewing the exhibition each artwork was rated according to liking, interest, understanding, and ambiguity. We found significant differences in viewing time and art appreciation between groups. Artworks in the museum were liked more, viewed longer, and were rated as more interesting than in the laboratory. Viewing time and art appreciation was positively correlated - people spent more time in front of artworks that were evaluated as aesthetically pleasing and interesting. Additionally, the relations between specific dimensions of viewing time and art appreciation were differently modulated by context. Our results suggest that context has to be considered as an important factor in art experience and art-related behavior.

A-0677

ELLIPSES TEST - A NEW RESEARCH TOOL TO MEASURE EXTENSIVE VS INTENSIVE ATTENTION.

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Ellipses test is a new computerised attention measurement tool. Existing methods rely on assessing the effectiveness of signal detection, treating it as a result of a choice between speed and correctness (Duncan and Humphreys, 1989). Their disadvantage is a lack of possibility to observe the style of working, a high level of complexity of the stimuli and the structure of the material, which imposes sequential method of processing. Ellipses Test is a tool which, in addition to traditional measures of efficiency, like omission and commission errors and speed of work, provides a measurement of perceptual field search strategy. Two studies were carried out to evaluate its psychometric properties. In the first experiment, we manipulated intensive vs. extensive attention and compared a) the efficiency of signal detection, b) the scanning strategy. The second experiment was conducted in a scheme of repeated measurements to test the reliability of the tool. The results indicate that the test allows to observe a different method of scanning for extensive (wide but shallow) and intensive (deep but narrow) attention. The test was proven reliable and accurate.

A-0678

ECORSI FOR DIGITAL TABLETS: EXPANDING THE POTENTIAL USES OF THE MOST POPULAR VISUO-SPATIAL WORKING MEMORY TASK

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The Corsi block-tapping task is the most used task to assess visuo-spatial working memory. The test is traditionally administered using square blocks attached to a wooden board, but numerous digital versions have been developed. In this study we developed and tested eCorsi, a tablet version of the Corsi task. eCorsi presents a number of advantages with respect to the traditional physical board: it is simple to install, set up and use; it significantly increases the accuracy of item presentation, of span and reaction time measures. It also allows monitoring the task in real time from a computer connected wireless with the tablet. Concerning standardization, we tested 54 participants both in a forward and in a backward span test along with 24 supraspan (one item above their forward span) sequences. Notably, results showed that average span and error rates were not crucially different from normative studies which used the traditional wooden board version of the Corsi task.

A-0679

DIFFERENT MEANS FOR THE SAME END – HOW TASK REPRESENTATIONS AFFECT MOTOR PLANNING

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Assume that someone wants to carry out a manual action, such as rotating a volume control knob. Even though this action is rather simple, the person may select among many different ways how to execute the action. For example, he could grasp the knob in different ways. Here, it is examined how motor-related features and the cognitive representation of the task determine how actions are planned. Participants were asked to rotate an object by various angles. The task representation was manipulated by instructing participants to move a marking on the object either toward or away from a reference position. Moreover, a heavy or a light object was used. As dependent variable, the orientation of the hand when the participants grasped the object was recorded. As expected, participants adjusted the grasp orientation in anticipation of the upcoming object rotation (end-state comfort effect). Additionally, task representations strongly affected grasp orientation. The weight of the object had no effect. The effect of task representation on the planning of lower-level motor features suggests that cognitive processes and motor planning cannot be fully dissociated.

A-0680

SYNCHRONIZATION OF SPEECH AND GESTURE - EVIDENCE FOR INTERACTION IN ACTION

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Gestures and speech production are well synchronization, though it is still under debate that whether the interaction between the two systems is still possible after gesture is initiated. Using virtual reality and motion tracking technology, the present study addressed this issue by examining the effect of disrupting one system upon the other system after gesture was initiated.

In Experiment 1, eighteen participants were asked to point to and name a momentarily illuminated light. In some trials, gesture execution was disrupted by temporarily shifting the visual feedback of participants' own pointing gesture in virtual reality. Participants delayed their speech onset time when their gesture execution was disrupted. In Experiment 2, another eighteen participants were asked to point to and name the color of a momentarily illuminated light. In some trials, speech production was disrupted by changing the target light color after gesture initiation. Gesture execution was prolonged when speech was disrupted.

In sum, our data support an interactive view of the synchronization of speech and gesture, which holds that the two systems can still exchange information after gesture is initiated. The present study furthers our understanding on the interaction between language and motor systems.

A-0681

DOES THE CONTROL OF EMOTION REQUIRE INTACT COGNITIVE CONTROL? EXAMPLES FROM AGING RESEARCH

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The capacity to adaptively respond to negative emotion partly depends upon lateral areas of the prefrontal cortex (PFC), areas that are involved in cognitive control. These areas are subject to age-related atrophy and associated loss in executive function. Yet, the literature indicates no change or even improvements in emotion regulation with advancing age. This would lead one to conclude that, at least in older age, cognitive control is independent from emotional control. I will review recent behavioural and brain imaging findings from our lab suggesting that adaptive emotional function is at least in part correlated with cognitive function in an ageing population. In particular, we recently performed two cross-sectional brain imaging studies focusing on negative emotion but using different tasks. Findings in both studies highlight that while age does not correlate with negative affective responding (and associated amygdalar activity), a different pattern of PFC recruitment is seen with increasing age and decreasing executive function. Thus, while emotional responding may not change as a function of advancing age, the manner in which emotional control is instantiated differs, and partly depends on an (older) individual's cognitive control ability. These findings highlight the need to assess cognitive function when studying emotion and ageing.

A-0682

IS THERE ANYTHING SOUND-SYMBOLIC IN WORDS: BEHAVIOURAL AND ERP STUDY OF SOUND SYMBOLISM IN NATURAL LANGUAGE

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Sound symbolism represents the idea that relation between phonological properties of words and visual properties of referent is not entirely arbitrary. Despite the growing body of research evidence on the artificial material, sound-symbolic relationships in the structure of real words is often lacking and controversial. In order to examine whether sound-symbolic effects can be found in natural language processing, we run a behavioural and ERP study with verbal stimuli presented within different visual context. In both studies participants were solving visual lexical decision task, whereby verbal stimuli (words or non-words) were presented within spiky and curvy frames. If sound-symbolic correspondences influence language processing, it was expected that sharp words presented within spiky frame would be processed faster and would elicit smaller N400 amplitudes compared to when presented within curvy frame (vice versa for soft words). The results of the behavioural study revealed no difference between congruent and incongruent sound-symbolic pairs; moreover ERP study revealed greater N400 for congruent in comparison to incongruent condition. Based on these results, we suggest that for process of accessing exact

meaning of word, as for solving lexical decision task, sound-symbolic correspondences may become constraining and arbitrariness becomes more efficient strategy in adults language processing.

A-0683

INVESTIGATING THE SPATIAL CODING WITH MAGNITUDE CONCEPTS

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Associations between numbers and space, in which small and large numbers are associated with left and right responses, respectively (SNARC effect, Dehaene et al., 1993) have been provided. Recently, Ren et al. (2011) found that this association extended to non-numerical magnitude concepts. Here we extend this idea in a series of experiments. In a first step, the results of Ren et al. (2011) were replicated using object concepts (e.g., compare sizes of 'mountain' and 'airplane'). In a second step, we observed this effect using both abstract magnitude concepts (e.g., 'tiny' and 'large') and numbers, separately. Finally, we wondered if abstract magnitude concepts and numbers are processed along the same architecture. To this end, we used magnitude concepts as inducer-task (e.g. respond incompatible to magnitude concepts) and numbers as diagnostic-task (is the number oriented or not) (e.g., Notebaert et al., 2006), resulting a reversed SNARC effect. Our results strengthen the idea that the congruency between numbers and space results from conceptual coding of magnitude (Gevers et al., 2010). However, they are also in line with the "logical recoding account" (Hedge et Marsh, 1975) showing that response mappings from the inducer-task stimulus can be transferred to the processing of the diagnostic-task stimuli.

A-0684

COGNITIVE SIDE-EFFECTS OF TRAINING TO DIRECT ATTENTION AWAY FROM NEGATIVE STIMULI

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Although much is already known about the therapeutic effects of attentional bias training, only a few studies have examined the mechanism responsible for these effects. In order to investigate how does the typical attentional bias training generalize to various combinations of target and distractors' valence 73 participants who completed the STAI-x2 were randomly assigned to a control (n = 37) or attentional training group (n = 36). The attentional manipulation (measurement or training version of the dot-probe task) was followed by a search task, during which novel neutral or negative faces could be presented within an array of all-neutral, all-negative or all-positive faces. It was found that the expected attentional effect (reduced ability to detect negative stimuli) was accompanied by a potentially maladaptive side-effect, namely reduced ability to detect positive stimuli among neutral distractors. We explain this result in terms of the ambiguity of the attentional rule underlying the dot-probe task performance.

A-0685

ANCHOR-BASED STRATEGIES IN NUMBER LINE ESTIMATION

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The present study explored the extent to which children use strategies when solving a number line estimation task. Sixty-four second graders were asked to estimate positions on a 0 to 200 number line. Participants were assigned to one of three conditions, depending on the type of number line: a number line with (1) an origin and endpoint, (2) an extra midpoint (100), and (3) a midpoint and two additional anchor points (50, 150). In addition to error rates and reaction times, trial-by-trial verbal reports of strategy use were recorded. A main effect of the position of anchor points was found on absolute error indicating that children were more accurate at the origin and endpoint. However, contrary to our expectations, children were less accurate alongside the anchor points (50, 100) in condition 3 compared to condition 1 and 2. The analysis of the reaction times did not yield any significant effects. These results might indicate that grade 2 children had a logarithmic magnitude representation in condition 3 which led them to an incorrect use of anchor-based strategies. A first analysis of the verbal protocol data confirmed these findings. The implications of these results will be discussed at the meeting.

A-0686

FRONTAL THETA POWER AS A PREDICTOR OF STERNBERG TASK PERFORMANCE – MULTILEVEL APPROACH

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The link between theta band power and different aspects of Sternberg task performance is well established in literature. Although much have already been learned about the relationship between EEG recording, individual differences, and task variables, most of the studies ignore nested, multilevel structure of the obtained data. By identifying and differentiating between- and within-subject effects, as well as cross level interactions (involving subject-level characteristics) we aimed at better understanding relationship between frontal theta band power during retention intervals and attentional involvement in Sternberg task. Supporting some of the previous results, analysis revealed that theta power fluctuations during retention intervals significantly predicted the following reaction times. This relationship was further moderated by memory load (with more pronounced effects in difficult conditions), and aggregate participant-level measures.

A-0688

ONLINE INVESTIGATION OF ATTENTIONAL PROCESSES IN THE INTRADIMENSIONAL/ EXTRADIMENSIONAL SHIFTING TASK: AN EYE-TRACKING STUDY.

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Flexible shifting of attention to relevant stimulus-dimensions is an important aspect of executive functions. Such attentional set shifting is measured by the Intradimensional/Extradimensional Shifting (IED) task, which requires participants to choose between two compound stimuli with distinct stimulus-dimensions (e.g. shape and colour) based on feedback provided for their previous decisions. The stimuli and the rule which determines the correct response change during the task: the dimension determining the correct response remains the same during intradimensional shift (IDS), whereas it changes during extradimensional shift (EDS). The aim of our study was the online investigation of attentional processing during the task. We modified the nine-stage IED-task of the Cambridge Neuropsychological Automated Test Battery by creating compound stimuli by which the two stimulus dimensions are separated in space (different geometrical figures with differently shaped holes inside). This design enabled us to determine which stimulus-dimension was attended by the subject. Our results show that dwell time on the relevant stimulus-dimension predicts successful task-performance. Moreover, attention to the irrelevant stimulus dimension in the early stages of the task determines performance later in the EDS-stage (when this dimension becomes relevant). This suggests that vigilance to new stimulus features is a key factor of attentional set shifting.

A-0689

DETECTING THE EMERGENCE OF CONSCIOUS KNOWLEDGE IN SEQUENCE LEARNING

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The Serial Reaction Time (SRT) task is a classic paradigm for studying implicit learning. In this task, participants typically show learning of a sequence of events without awareness. However, although the SRT task is usually considered to be an implicit task, several studies indicate that conscious knowledge can emerge nonetheless. Recently, this transition between implicit and explicit knowledge has become a focus of interest in cognitive research, as it may shed further light on the nature of human learning and whether a single or multiple learning systems exist. By applying the method of post decision wagering during an SRT task instead of only using traditional post hoc awareness tests, we tried to measure the emergence of explicit knowledge and its influence on the learning process. In our experiment, participants performed an SRT task under either incidental or intentional learning instructions. Results indicated that while performance on the task was similar for both groups, qualitative differences in sequence awareness were present during the learning process. Furthermore, these

differences were not detected by traditional post hoc awareness tests. Implications of these results and future research directions will be discussed at the presentation.

A-0690

EARLY ATTENTIONAL ENHANCEMENT FOR POSITIVELY AND NEGATIVELY VALENCE TONES
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Compared to the large body of research investigating links between affect and visual attention, the interplay between affective factors and auditory processing is scarcely reported so far. The present study was designed to answer the question as to how early the specific impact of positive or negative valence of a tone occurs during auditory processing. Additionally, we raised the question of whether the supposed preferential processing of valenced tones is characterized by a general relevance or a negativity bias. Contrary to the typical approach of affective research which uses complex stimuli with strong, 'intrinsic' valences, we stressed strict control over physical stimulus attributes by assigning positive, negative, and neutral valence to simple sinusoidal tones in a learning phase. In a subsequent test phase, event-related potentials were recorded while these tones were presented in a task-irrelevant channel. Results indicate enhanced attention to valenced tones (in comparison to neutral ones) at the level of early stimulus encoding (i.e., in the time window of the N1 event-related potential). This enhancement did not show selectivity for positive or negative valence. This supports the hypothesis of a general relevance principle that governs attentional processes.

A-0691

PRE-STIMULUS EEG OSCILLATIONS AND ERP COMPONENTS IN CPT AND N-BACK PERFORMANCE

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The Electroencephalographic oscillations are rhythmic potential changes the neuronal groups produce in different frequency bands to communicate within the population or to communicate with other neuronal groups. When different cognitive processes require simultaneous activation or integration of neuronal groups, changes are observed in frequency bands of the EEG oscillations. A series of studies have shown that there is a relationship between the power of the pre-stimulus frequency bands and the perceptual performance. These findings demonstrate that the pre-stimulus oscillations can be used to predict the post-stimulus performance. In this study, three sub-fields of cognition were investigated by recording EEG measurements during neuropsychological tests: continuous performance test and the N-back test. The relationship between the pre-stimulus oscillations, the cognitive performance in these cognitive areas and ERP measures were identified; and tested whether the performance of the subject during sustained attention, working memory and decision-making tasks can be predicted by the frequency, power, and topographical features of the EEG oscillations. The aim of this study is to contribute to the prediction of

cognitive performance by determining the weight of the ongoing EEG oscillations. Data artifact elimination and analyzing is in progress.

A-0692

SOCIAL INTELLIGENCE AND THE PREDICTION OF OTHERS' AFFECTIVE REACTIONS

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People differ on how successful they understand others' emotions and mental states. Conclusively, they probably also vary on how efficiently they are able to predict others' affective responses and behaviour. The main focus of the study was to understand how prediction of others' affective responses is influenced by social intelligence, a cognitive ability construct supposed to be laying behind social behaviour. 62 fifth-graders and 72 seventh-graders participated in the study. Prediction of affective responses was measured by a method that came off due to modification of PFT-Children Edition, a test that originally measures reactions appearing in frustrating situations (Rosenzweig, 1948). Tasks of the participants were to state (1) their own and (2) predict two of their classmates' responses in the given situations. Success of prediction was analyzed after the creation of different scoring scales. We used the Four-Factor Test of Social Intelligence (O'Sullivan, Guilford, 1976) to measure social intelligence. Social intelligence influenced one's efficiency on predicting others' reactions, but had a significant effect also on how one's own responses have been predicted by others. Our results may be in line with explanations that understand the predictive behaviour in social context as a kind of distinct, cognitive ability.

A-0693

INTERPLAY BETWEEN REPEATED CHECKING AND INHIBITION SUGGESTS THAT INHIBITORY DEFICIT MAY HAVE A CAUSAL ROLE IN THE DEVELOPMENT OF OCD

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Repeated checking is a common symptom of Obsessive Compulsive Disorder (OCD)—an anxiety disorder characterized by intrusive thoughts that are followed by compulsive acts aimed to reduce anxiety. According to common cognitive-behavioral models, OCD patients misinterpret normal automatic thoughts, causing anxiety and induction of compulsions. OCD patients are also characterized by an inhibitory dysfunction, manifested in various neuropsychological tasks and often demonstrated by the stop-signal task. The etiological role of inhibition in OCD is still unclear—some state that inhibitory deficit has a causal role in the development and maintenance of OCD, while others claim that inhibitory deficit is an epiphenomenon of OCD. A behavioral simulation of

compulsive-like behavior is a repeated-checking task that was found to cause memory distrust while not affecting memory accuracy. This effect was found to be larger in participants with poor inhibitory control. The current experiment tested how repeated checking would influence inhibition. Healthy participants completed either the repeated checking task or a control task, followed by the stop-signal task. Stop signal performance was contrasted with a baseline stop signal measurement. Results indicate that repeated checking caused greater memory distrust but did not affect inhibition. Implications for neuropsychological characteristics and theories of OCD are discussed.

A-0694

DOES THE SONORITY-BASED MARKEDNESS INFLUENCE THE VISUAL PROCESSING OF SYLLABLES IN FRENCH CHILDREN?

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We examined whether the sonority-based markedness of bigrams that straddle the syllable boundaries influences a syllable-based segmentation in visual letter detection task. We tested 48 French school-aged children who were subdivided into 2 groups (beginning and advanced readers). Using the classical illusory conjunction paradigm, the children were instructed to report the color of a target-letter located within the intervocalic cluster of a flashed bicolored pseudoword whose display duration varied with children response patterns. Pseudowords, whose clusters were unattested in word-initial position in French, were distributed along a continuum from phonotactically-unmarked ones (e.g., 'birzale') to phonotactically-marked ones (e.g., 'kotpale') in intervocalic position. Response patterns showed that the children made more preservation illusory conjunctions in the color-syllable mismatch condition in both groups when the bigrams were phonotactically-unmarked (responding that 'r' was the same color as 'Bl' in 'Blrzale'; upper- and lower-case letters represent two different colors). Preservation illusory conjunctions decreased – while violation illusory conjunctions increased in the color-syllable match condition – when sonority-based markedness became phonotactically-marked and were found with 160-ms-flashed pseudowords. We discussed our results to propose that the syllable-based segmentation is early influenced by the sonority-based markedness and does not primarily depend on statistical properties of bigrams and syllables.

A-0695

NEED-THREAT AND AFFECTIVE RESPONSES TO OSTRACISM BY OUTPERFORMING OR OURPERFORMED SOURCES

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Humans have a fundamental need to belong and threatening this need has strong effects on motivational, emotional, cognitive, physiological and behavioral responses. Recent studies on the effects of ostracism have been focused on the moderating factors in responses to ostracism. These studies revealed some moderating factors in responses to ostracism which can be classified as individual difference factors, situational factors, and the characteristics of the source of exclusion. The aim of the present study was to investigate the possible moderating effects of outperforming or being outperformed by the source of ostracism on a performance task on responses to ostracism. Using a cyberball paradigm ostracism conditions were manipulated and by using a dot-estimation task participants were given a false-feedback as either outperforming or being outperformed by the source of the ostracism. The degree of the felt threat on four fundamental needs (belonging, self-esteem, control and meaningful existence) and the affective responses were recorded. Results replicated the main effect of ostracism on need-threat and affective responses but these responses were not moderated by the false-feedback. These results reveal a support to the notion that the effects of ostracism on fundamental needs and affective responses are pervasive and strong among various conditions.

A-0696

BRAIN ACTIVITY IN CONSCIOUS PROCESSING OF EMOTION: EVENT-RELATED POTENTIAL (ERP) STUDY

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Our research explored conscious perception of emotional stimuli and its psychophysiological components with event-related potential (ERP). We used a backward masking task presenting participants with fearful faces (inverted and non-inverted conditions) and probe their awareness with different subjective measures: i.e. confidence ratings (CR), post-decision ratings (PDW) and perceptual awareness scale (PAS). Both N170 and early posterior negativity (EPN) ERP components were employed as an index of visual processing. Behavioral measures including receiver operating characteristics (ROC) indicated that participants expressed their awareness under inverted and non-inverted conditions so that higher awareness ratings were associated with increased accuracy performance. In case of conscious responses, more pronounced amplitudes of N170 and EPN components were observed regardless the type of facial stimuli perceived. The behavioral data in case of PDW indicated enhanced first-order accuracy induced by monetary incentives. However, no such patterns were present in the ERP data. Taken together, our ERP findings suggest that conscious awareness of visual emotion is

determined by the effectiveness of the brain visual system, regardless emotional valence of the stimuli. We also suggest that EPN amplitude is associated with the general increase of activation in the visual cortex.

A-0697

LANGUAGE PROFICIENCY AND THE MAGNITUDE OF STROOP EFFECT- A ROLE OF PROPORTION CONGRUENT.

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If a magnitude of the Stroop effect (SE) is to be interpreted as a function of reading automatization, it should be larger in a more proficient language (L1), compared to a less proficient one (L2). However, findings so far demonstrate a mixed pattern of results. In the reported series of experiments we attempted to disentangle this relation by manipulating a factor that is known to influence the SE magnitude- a proportion of congruent stimuli.

A higher proportion of incongruent stimuli has been linked with higher conflict, which requires more efficient adaptation and leads to the reduction of the Stroop effect. Such a reduction is not observed when incongruent stimuli are sparse.

In the three experiments, more errors and larger SE were observed in L2 compared to L1, but only in high-conflict condition. According to conflict monitoring theory, conflict adaptation mechanisms need certain amount of conflict to get activated, therefore, in less automatized L2 those mechanisms may be activated to the lower extent that in L1, resulting in larger observed interference. These findings point to the role of proportion congruent in explaining Stroop task results.

A-0698

THE TRAMPOLINE OF ATTENTION – REBOUND ANXIETY TOWARDS POSITIVITY

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The purpose of two experiment was to check how affect and trait anxiety modify mechanism of attention towards positivity. To verify our hypothesis we used two experimental procedures: priming task (neutral target evaluation, exp 1) and dot probe task (exp 2).

In experiment 1 we hypothesized that at early stage of processing information (40 ms exposure) evaluation will be consistent with presented stimuli (assimilation) in high and low anxious group. We manipulated exposure time of presented words (self-relevant stimuli, such as advantages and disadvantages). Trait anxiety was measured by State-Trait Anxiety Inventory. Results confirmed our hypothesis and showed specific vigilance in high anxious group for self-threatening information (shorter RT). At later stage of processing information (75 ms exposure) we expected re-evaluation caused by negative affect and high level of trait anxiety. High-anxious individuals disengage attention from negative self-relevant information and rebound their evaluation of threatening material towards positivity. In experiment 2 subjects were exposed to pairs of words presented for 40ms and subsequently masked. We observed attentional bias towards positivity only in low anxious group.

The results are discussed in the context of attentional rebound as a tool to self-regulation, used especially by high anxious individuals to protect their self-esteem.

A-0699

INFLUENCE OF VERBAL LABELS ON OBJECT MEMORY IN INFANCY

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Verbal labels help infants to categorize objects and modulate visual object processing. We investigated whether labels affect how object representations are maintained in memory.

We recorded scalp EEG of 12-month-olds during an occlusion paradigm. The item revealed after the occlusion was manipulated: infants saw either the same object as before the occlusion (No-change), or another exemplar of the same category (Within-category-change), or an exemplar from a different category (Across-category-change). One group of infants saw objects with familiar labels (Label-group); another group saw objects with unfamiliar labels (No-label-group).

The power of oscillatory activity in the gamma band was higher in the label than in the no-label condition during object appearance (over medial areas), whereas during occlusion this pattern reversed (over occipital areas). We interpret the former as a marker of access to categorical/linguistic representations, and the latter as a marker of featural information maintenance.

In Label-group, ERPs to the object reappearance were different only between Across-category-change and No-change conditions, suggesting that infants only remembered category-relevant information. In No-label-group, ERPs to Across-category-change and Within-category-change were different from No-change, suggesting that infants stored only featural information.

These results show that language modulates how the infant brain stores and maintains object representations.

A-0700

IMPACT OF THE FREQUENCY OF LANGUAGE CODE-SWITCHING ON ATTENTIONAL/EXECUTIVE FUNCTIONING IN HIGHLY PROFICIENT BILINGUAL ADULTS

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Bilingual advantages in attentional/executive functioning are well documented, but the specific aspects which underlie these cognitive advantages in bilinguals are unclear. Language code-switching has recently been proposed as a possible mediating factor of this advantage (Rodriguez-Fornells et al., 2012). The aim of the present study was to determine the frequency of language code-switching on the development of executive control of bilinguals. Two groups of highly proficient bilingual adults (mean age: 25;6 years) participated to the study. The groups consisted of respectively 20 low and 24 high frequency language code-switchers, matched on age, second language proficiency and socio-cultural status. A series of attentional/executive tasks

measuring divided attention, response and interference inhibition as well as mental flexibility were administered to the participants. No difference was found between the two groups for divided attention and response and interference inhibition measures. However, a significant advantage in mental flexibility measures (both in terms of quality and latency of responses) was observed for the group switching frequently between their two languages. These results confirm the importance of language code-switching as an underlying factor of the association between bilingualism and improved attentional/executive functioning.

A-0701

RELATION BETWEEN INHIBITORY PROCESSES IN LINGUISTIC AND NONLINGUISTIC TASKS: EVIDENCE FROM POLISH-ENGLISH BILINGUALS.

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Interlingual homographs (IHs, words that share orthography but not meaning across languages) are frequently used to investigate a degree of non-selectivity and inhibition in bilingual comprehension, however, results depend heavily on a particular experimental design. In the present study, Polish-English homographs were used in a semantic relatedness task based on Macizo, Bajo and Martin (2010). A group of unbalanced Polish-English bilinguals completed a set of various linguistic and non-linguistic tasks, including the IHs task. Our aim was to investigate whether efficiency of inhibitory control is comparable across comprehension, production and non-linguistic inhibitory tasks. Significant correlations between inhibition in comprehension (the IHs task), production (language switching task) and non-linguistic conflict resolution (flanker task) were observed. Additionally, the results obtained in the IHs task proved to be related to participants' L1 and L2 proficiency level (based on both self-assessment and verbal fluency tasks) and the nonverbal IQ level. In addition to reporting the relations between inhibitory control in language production and comprehension, we provide a critical analyses of the involvement of other factors than inhibitory control which may influence performance in the IHs task.

A-0702

MULTIPLE PRIMES AND SEMANTIC SATIATION: ATTENUATION OF THE P2 AMPLITUDE FOLLOWING MASSIVE EXPOSURE TO SEMANTIC CO-ORDINATE WORDS

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The phenomenon of Semantic Satiation refers to the temporary loss or attenuation of the meaning of a word when this word is repeatedly perceived. Kounios et al. (2000) showed a modulation of the N400 ERP component elicited by target words (e.g., cat), as a function of the number of presentations (1 or 15) of a prime word (e.g., dog). The present study is aimed at investigating Semantic Satiation within-semantic category. In an electrophysiology study we presented critical words that could be preceded by: a) one semantic within-category coordinate (Low Satiation condition); b) by eleven semantic within-category

coordinates (High Satiation condition); or c) by more than eleven semantically unrelated words (Unrelated condition). Participants performed a word-detection task on filler words. Congruently with previous studies, a modulation of the ERP amplitude was observed in the N400 time window for both the Low and High Satiation conditions with respect to the Unrelated condition. Moreover, with respect to the Low Satiation, the High Satiation condition showed a modulation of the ERPs in an earlier time window (180-250 ms). The results suggest that semantic satiation (a) can be obtained even with massive exposure to semantic coordinates and (b) is affecting early stages of semantic processing.

A-0703

MODELING VISUAL-WORKING MEMORY: AN INTERFERENCE-BASED MODEL

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A neural-network model is created to model the interference in working memory. In the model, memory is assumed as bindings between context cue and item. The encoding process is modeled as creating the binding between context cues and items. While retrieval, the context cue is used to retrieve the information from the network. The interference is modeled through the overlapping between representations. Because the representation of context cue overlaps with other cues, the retrieved information consists of bonded item and the other items in the memory, which reduced the performance of retrieval. Besides the overlapping between context cues, the representation of items also overlaps, which reduces the performance even further. We implemented the model to an experiment testing recall of visual stimuli, the Colorwheel experiment (Zhang & Luck, 2008). Participants are asked to remember colors in spatial locations and recall the color of cued location by selecting the color on a Colorwheel. The model is able to simulate the findings from the Colorwheel experiment, which includes the set-size effect and the types of errors. Because of the overlapping in representations, the model can also simulate the spatial gradient and color gradient effects in Colorwheel. (194 words)

A-0704

SOURCE MEMORY AND SELF-REFERENCE IN AGING: INSIGHTS FROM AN IRMF STUDY OF AUTOBIOGRAPHICAL MEMORY.

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Healthy aging is associated with significant changes in episodic memory. In particular, age-related deficits are pronounced for the objective (i.e. source memory) as well as the subjective (i.e. auto-noetic consciousness) qualitative

aspects of memories. Self-referential processing is known to enhance both general and specific memory, improving the accuracy and richness of remembering. Self-referential processing remains intact with age as it increases the amount of items retrieved and also memory for both specific details and source item. In the present study, we asked 20 young and 17 old subjects to perform a self-referential task while registering brain activity measured by fMRI. At the behavioral level, compared to the younger adults, self-referential processing improved the older adults' auto-noetic consciousness but not their memory for source item. Regarding neuroimaging results, young adults' performance correlated with regions involved in the qualitative aspects of memory for self-referenced material whereas that of old adults did not, suggesting a loss of cerebral specialization in the self-memory system in aging.

A-0705

AN FMRI STUDY ON CHANGING PRICE RELATIONS EFFECTS

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While gain and loss, brand preference, and price premium have effects on decision-making in purchase situations, we were interested in perception of changing price relations in a trioka of products. With respect to prospect theory and compromise effect, we expected differing evaluation of reference articles depending on whether being cheaper, intermediate, more expensive, or much cheaper than the other two articles. An fMRI experiment was conducted applying these conditions. Region of interest analysis revealed a linear progression in parietal lobules activation (esp. horizontal intraparietal sulcus which is considered crucial for numerical cognition) from cheaper reference to intermediate to more expensive. According to the assumption that a very cheap reference will be rendered suspect, activation also increased when becoming too cheap. Analogous to this trend, dorsolateral prefrontal deactivation proceeded, having its peak at the (unsuspiciously) cheap reference. Results suggest that different price relations are perceived quickly and the relation is reflected according to potential benefits. There is a position of the most effortless buying experience in the price continuum. Representations of social status hierarchy and numbers share certain key properties. Apart from mere numbers, effects of social status might also be implicated considering bandwagon snob or Veblen effect.

A-0706

STRESS AND RECOLLECTIONS IN DEESE-ROEDIGER-MCDERMOTT PARADIGM AND AUTOBIOGRAPHICAL MEMORY TEST

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Memory is a powerful instrument of our cognition, as it helps us construct and maintain our life stories. As a source, it uses records of past experiences, believes, as well as already stored information from semantic networks or schemata. Some memories can be recalled easily (e.g.

positive autobiographical events), however, there are conditions which disrupt or prolong the retrieval process, such as depression symptoms, rumination, or stress. The present quasi-experimental study used a natural situation of academic oral examination as a stress-inducing condition for a memory study. Participants were presented with word lists semantically associated with one non-presented word (the Deese-Roediger-McDermott paradigm), each immediately followed by free recall and final recognition task. Next, they underwent the Autobiographical Memory Test (AMT; 5 positive, 5 negative, and 5 neutral cue words). After 24-hours delay, they completed additional free recall and recognition task. Number or true and false recall was examined, as well as the retrieval time and memory specificity in the AMT. Level of stress, anxiety and depression symptoms, and rumination, were measured by questionnaires. Preliminary results supported the predictions and showed greater amount of false recollections and longer retrieval times for autobiographical memories in the stress group compared to control group.

A-0707

THE RELATIONSHIP BETWEEN PERCEIVED EMOTIONAL INTELLIGENCE AND ATTACHMENT-RELATED ANXIETY AND AVOIDANCE IN ITALIAN ADULTS

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Based on Mikulincer & Shaver's (2007) model of adult attachment dynamic, this study tested hypotheses concerning the effect of attachment-related anxiety and avoidance in different relational domains (mother, father, friends, partners) on different dimensions of perceived emotional intelligence (emotional attention, clarity and repair). 92 adults completed the Italian version of the "Trait-Meta-Mood Scale" (Salovey et al., 1995) and the "Experiences in Close Relationships – Relationship Structures" questionnaire (Fraley et al., 2011) in on line administration. As predicted, only avoidance but not anxiety was negatively correlated with emotional attention, while both avoidance and anxiety were negatively correlated with clarity and repair. Whereas correlations concerning avoidance were manifest in all relational domains except that of attachment to mother, the correlations concerning anxiety were manifest only in the domain of attachment to partners. The results illustrate the importance of distinguishing between different attachment dimensions, different relational domains, and different dimensions of perceived emotional intelligence.

A-0708

F0 SLOPE AS A CUE TO WORD SEGMENTATION IN FRENCH

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How listeners are segmenting continuous speech stream is still a matter of controversy and one open-issue concerns the identification of acoustic cues that are relevant for speech categorization at the acoustic/phonemic interface. This study examines the use of intonational cues to word segmentation in French, and specifically the influence of f0 slope. Participants listened to phonemically identical sequences such as /selami/, „c'est la mie/l'amie" (it's the crumb/friend) and had to perform a two-alternative forced choice task. F0 slope and/or mean value on the first vowel /a/ of the natural consonant-initial production „la mie" were manipulated in order to test whether it influences perceived segmentation. The principal results of the study were that f0 slope alone can bias speech segmentation and that its influence is increased with the simultaneous increasing f0 mean value. Implications of these results for online speech segmentation are discussed.

A-0709

EXPLORING THE INFLUENCE OF RESPONSE DEMANDS ON AUDITORY ATTENTION SWITCHING

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Using a task-switching variant of selective listening, we examined the ability to intentionally switch auditory attention between two speakers. In each trial, two number words, one spoken by a male and one by a female, were presented dichotically via headphones. The gender of the task-relevant speaker was indicated by a cue prior to auditory stimulus onset. In two experiments, we manipulated the response demands and preparation time. In Experiment 1, participants performed a shadowing task (repeating the relevant number word) and a categorization task (judging the relevant number word as smaller or larger than 5) with vocal responses ("smaller" or "larger"). Performance was better in the shadowing task than in the categorization task, and the costs when the gender of the relevant speaker switched (i.e., switch costs) were smaller. In Experiment 2, participants performed the categorization with different response demands. Either the vocal responses were direct (i.e., "smaller" or "larger") or abstract (i.e., "left" or "right"). Performance was better for direct responses, but abstract responses benefited more from preparation time. We discuss results on the basis of response selection processes.

A-0710

CONTEXT-DEPENDENT PERCEPTION OF SPEECH IN NOISY BACKGROUNDS

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In most ecological environments, understanding a given talker is restrained by the presence of competing speakers that are masking the signal. Whereas the interference between the target speech and maskers at the cochlear level (i.e., energetic masking, EM) seems to be responsible for a significant part of this difficulty, central mechanisms are also involved (i.e., informational masking, IM). Nevertheless, this “cocktail-party problem” is partially solved with perceptual and/or cognitive mechanisms. Among those, the ability to sharpen the representation of repeating auditory elements presented in quiet is thought to relate to speech intelligibility in noise. Therefore, the aim of this study was to directly assess this prediction by determining whether listeners benefited from context effects in noisy backgrounds. We presented 20 listeners with a detection task in which a target syllable was embedded in a repetitive or variable syllable stream. Maskers were presented in two conditions: they either induced IM and EM, or only IM. Results show that listeners performed better in the repetitive context. Moreover, reaction times suggest that the listeners mainly benefited from the repetitive context when the maskers induced both IM and EM. Therefore, these results are discussed in terms of cognitive loads induced by each masker.

A-0711

ABNORMALITIES IN THE ESTABLISHMENT OF SELF-AGENCY EXPERIENCES IN SCHIZOPHRENIA

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People usually feel they cause their own actions and the consequences of those actions, i.e., they attribute behavior to the proper agent. Research suggests two routes to the experience of self-agency: 1) an explicit route, where one has the intention to obtain a goal (if it occurs, I must have done it) and 2) an implicit route, where information about the goal is unconsciously available (e.g., via priming) and increases the feeling of self-agency. Schizophrenia patients typically exhibit difficulties in distinguishing one’s own actions from those of others. The present study investigates differences in both routes to self-agency experiences between patients and controls. Twenty-three patients and 23 controls performed a task where they performed an action (button press) and subsequently indicated whether or not they were the agent of the consequence of this action (the outcome) on a 9-point scale. In the explicit condition both groups experienced enhanced self-agency. In the implicit condition healthy controls showed increased self-agency over the outcome, while patients did not. Potential differences in task motivation and attention did not explain these findings. These findings provide new evidence for the idea that implicit processes leading to feelings of self-agency may be disturbed in schizophrenia.

A-0712

THE EFFECT OF COGNITIVE LOAD ON VISUAL SELECTIVE ATTENTION.

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The ability to overcome distractions and selectively attend to relevant information is known to decrease with cognitive load (Lavie, Hirst, De Fockert, & Viding, 2004). Recent findings suggest that, in tasks such as the Flanker, where targets are central and distractors peripheral to the focus of attention, this decline in selective attention is due to a dispersion in the attentional window with cognitive load (e.g. Ahmed & De Fockert, 2012). In this talk, findings from two distinct paradigms (the Navon and a face processing task), conducted to assess the generalisability of this interpretation will be presented. The modulation of performance in both tasks, during low compared to high working memory load, corresponded with a more dispersed attentional setting as a function of cognitive load. These findings further corroborate our understating of how visual information processing is affected by cognitive load and moreover demonstrate the impact of this effect in social cognition, such as accurate perception of facial emotion.

A-0713

FLUENT FACES: INFLUENCE OF PROCESSING DYNAMICS ON SOCIAL JUDGMENTS OF EMOTIONAL DISPLAYS.

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This work examines the relation between cognition, emotion and social judgments within the context of understanding human facial expression. Our studies test whether the effort with which facial displays are perceived and categorized influence social judgments, such as liking, intention, or trustworthiness. More precisely we assume that facial displays of basic emotion have high perceptual fluency that causes easy categorization and attribution of social traits (e.g. anger - aggressive, happy – nice). However, unclear/ambiguous facial display cause perceptual disfluency (difficulty of categorization), and by this cause negative reaction and negative judgments. During experiments participants were shown pictures of emotional display, changing within 14 steps/frames into different emotional category (e.g. angry to happy or sad to happy). They were asked to quickly categorize each picture either according to presented emotion (increased disfluency condition) or displayer gender (control condition) and then judge some displayer traits (e.g. intentions, trustworthiness). Results support our hypothesis - pictures with ambiguous emotional display were rated lower than expressions of basic emotions, even when they are negative. Additionally we found that increased disfluency (evoked by facial display categorization task) magnified the effect. We discuss possible consequences of categorization conflict on various socio-cognitive processes.

A-0714

SITUATION RELATED OR LONG-TERM EXPECTATIONS – PROSODIC PROCESSING IN INFANCY

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Prosody is one of the most important cues in infancy during segmenting fluent speech into meaningful elements. Although the nature of prosodic features differs among languages – so do the cues used by infants – the phenomenon of accustoming to its pattern is common. Our aim was to examine the nature of early stress representation in a language with fixed stress pattern, as we already know that adults show specific asymmetric mismatch negativity processing legal/illegal stress patterns. We conducted an electrophysiological experiment (passive oddball paradigm, 400 items, $p=25\%$) with Hungarian infants ($n=48$), listening to bi-syllabic pseudo-words with different stress patterns: legal (stress on the first syllable) and illegal (stress on the second syllable against the Hungarian rules). We examined two age groups (10 and 6 month-olds) in two conditions (random presentation order), in which the position of the stimulus varied (standard or deviant). Our ERP results revealed that infants processed stimuli differently depending on their position and legality. However the mismatch responses differed in polarity depending on the presentation order of the conditions. Results suggest that the representations of stress patterns are sensitive to the actual situations and not necessarily guided by long-term representations at the age of 10 month.

A-0715

ANALYTIC INFERENCE: CAN PEOPLE PREDICT THE EFFECT OF INTERFERENCE ON THEIR MEMORY?

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People are generally unable to predict the influence of interference on memory when making metamemory judgments (Eakin, 2005), but not always (Maki, 1999; Diaz & Benjamin, 2011). Hence, this issue needs further attention. We investigated participants sensitivity to the effect of interference (interference vs. no interference condition) when making metamemory judgments (i.e., ease of learning [EOL] judgments, delayed judgments of learning [JOL] and retrospective confidence judgments), in three different groups (limited time to judge/unlimited time to judge/study word pairs aloud). The interference effect was strong and static in all the groups, but predictive validity was significantly higher in the groups where participants had unlimited time for making the judgments and where word pairs were learned with vocalizing. Our findings demonstrate that (i) fast metamemory judgments are based on familiarity, which enhances the “illusion of knowing” (see Eakin, 2005); (ii) inferences and/or (iii) verbalizing during study can diminish the effect of the “illusion of knowing” phenomenon. In addition, analytic inference leads to more accurate metamemory performance, thus, with certain conditions people can partially predict the effect of interference on their memory.

A-0716

THE INFLUENCE OF CHOICE BLINDNESS ON FALSE MEMORY GENERATION

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It was shown that subjects explained the reasons for making the choices they in fact never made. (choice blindness effect (CB), Johansson, Hall, 2006). But do these explanations affect subjects’ memories for their choices? To test it we conducted an experiment using modified CB paradigm.

In first stage subjects were presented with sixteen pairs of photos of horses one after the other and chose those which seemed to win the race. In the second stage subjects were offered to explain some of their choices. In fact, half of chosen photos were replaced with those not chosen from the pair (misinformation condition). In the third stage they were asked to retrieve their previously made choices. The photos presented in the first and in the third stages but which subjects didn’t explain were in control condition. Subjects explained 98% of cases in misinformation condition. That is CB effect was obtained in our experiment. They changed 65% of their choices after presenting misinformation. It’s significantly higher than 29% in control condition (χ^2 , $p<0,001$). Thus, CB influenced subjects’ memories of their choices. This aftereffect of CB means that subjects’ explanation of misinformation influences storage and processing of memories about their choices.

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A-0717

CORTICAL PULSE-INHIBITION HINDERS IDENTIFICATION OF BRIEFLY PRESENTED STIMULI AT LOW CONTRAST

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Cortical and thalamo-cortical oscillations have been proposed to provide a neuronal basis for discretization of perception. [VanRullen & Koch, 2003]. When the amplitude of occipital oscillations in the alpha range is higher than some threshold cortical excitability, pulse inhibition might result in discrete perception [Mathewson et al. 2011]. Here, we studied the role of pulse inhibition on visual information acquisition with stimuli presented at supra- and near threshold contrasts. The task was to report back the orientation of a Landolt ring briefly presented in high and low contrast. Variable fixation period helped avoid task-induced phase locking of alpha. The instantaneous phases of the alpha oscillation at stimulus onset were derived with Hilbert transformation after band-pass filtering the raw EEG. Behavioral data was fitted with a Poisson Counter model of identification. A grand average counter-phase stimulus-locked alpha oscillation between correct and wrong responses was present in the low but not the high contrast condition. Similarly, only in the low contrast condition did we see significant effect of alpha phase on visual processing speed. When stimuli contrast is high, the oscillatory activity preceding target onset plays no role, possibly because the stimulus evoked cortical excitability is sufficient for pulse inhibition not to occur.

A-0718

HOW DIFFERENT READING HABITS INFLUENCE WORD BISECTION: EVIDENCE FROM ITALIAN AND HEBREW

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When unimpaired adults bisect a line they misbisect it by positing the subjective midpoint to the left of the objective one, a phenomenon called pseudoneglect. This phenomenon also affects orthographic material (words, pseudowords, consonant strings), and recently it has been shown, at least for Italian (Arduino et al., 2010), that stimulus length differently affects the bisection of lines and orthographic material: while lines are always bisected leftward, orthographic material is sensitive to length (an opposite rightward bisection bias only with short stimuli). The pseudoneglect phenomenon depends mainly on two factors: cerebral asymmetries and reading habits. To investigate this issue and disentangle between the two mechanisms we asked 120 adults with different directional reading habits (half Italian and half Hebrew readers) to bisect lines, words and nonwords (short and long) of both languages. Stimuli were presented on a tablet and the participants marked the target midpoint with their forefinger. The results confirmed the previous findings for Italian and showed that reading habits have an important effect on the magnitude and direction of the bias in bisecting verbal and nonverbal material: Hebrew readers, who read right-to-left, bisected both lines and words and nonwords to the right of the objective center.

A-0719

DOES THE PERRUCHET EFFECT INDICATE A DISSOCIATION BETWEEN LEARNING AND AWARENESS?

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According to associationist, „strength“ theories, learning occurs by automatic reinforcement between co-occurring events in the environment. According to opposite cognitive, or propositional accounts, learning depends on conscious hypothesis testing in such a way that performance to an event will improve when participants' conscious expectancies for that event increase. Perruchet et al. (2006) and Destrebecqz et al. (2010) used a simple reaction time task in which a warning tone was followed by a visual target in 50% of the trials. RT to the visual targets were recorded as well as participants' expectancies before each trial. Results indicated that while expectancy ratings decreased with the number of preceding tone-target trials (a phenomenon known as the gambler's fallacy), RTs became faster with runs of tone-target trials and slower with runs of target-alone ones —providing evidence for associationist accounts of unaware learning. In a reanalysis of these previous studies, and in two follow-up experiments, we show that these results may not reflect a true dissociation between learning and awareness as decreasing RTs were only observed in participants who did not show the gambler's fallacy. Participants who did show the gambler's fallacy did not show the Perruchet effect.

A-0720

SOURCE MONITORING AND EASE OF IMAGERY. CONFUSION OF REAL AND IMAGINED COMPLETIONS OF NATURAL SYMMETRIC SHAPES

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The source monitoring framework (SMF) claims that confusions of memories of mental imagery and visual perception become more likely when the imagery process was easy (Johnson, Hashtroudi, & Lindsay, 1993). Finke and colleagues (Finke, Johnson, & Shyi, 1988) proved this hypothesis by examining confusions of real and mentally completed symmetric patterns. Following their experiments the present study tested source monitoring performance between real and imagined completions of natural symmetric stimuli. Stimuli were grouped in four groups by combinations of their memorability (high vs. low) and ease of imagery (high vs. low), derived from a pretest.

The data was modeled using an adaptation of the 2-HTSM model proposed by Riefer and Batchelder (1988), thereby item and source memory and response biases for the different groups of stimuli could be compared separately. Source memory was worse if ease of imagery was high, whereas item memory parameters were not affected by the ease of imagery but only differed between the groups with different memorability values.

The study strongly supports the assumptions of SMF and shows that item memory and source memory contribute differently to source monitoring and are affected by different stimulus features and encoding processes.

A-0721

THE COGNATE STATUS IN THE CHINESE-ENGLISH AND ENGLISH-CHINESE BILINGUAL LEXICON

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Adopting the masked priming paradigm, we aim to examine whether the representation and processing of cross-script cognates is different from non-cognates in Chinese-English (Chinese as L1, English as L2) and English-Chinese (English as L1, and Chinese as L2) bilinguals. We employed two tasks to investigate the cross-language priming effect in both cognates and non-cognates with these two groups of bilinguals: lexical decision and naming. The relationships of prime and target were manipulated such that the prime was either translation equivalent of the target, phonologically similar to the target, or unrelated to the target. We observed robust translation priming in both lexical decision and naming; but phonological priming effects only in naming, not in lexical decision. Cognates showed slightly more priming effects, but not significantly bigger than non-cognates. Additionally, we found that English-Chinese bilinguals showed more sensitivity to cognates compared to Chinese-English bilinguals, which suggests that English primes were more prone to phonological activation than Chinese primes. These results show that cross-script cognates were different from within-script cognates as reported in the cross-language priming literature, and that the role of phonology is different in reading different scripts. We will discuss the results in the current bilingual lexical models.

A-0722

MIRROR-TOUCH SYNAESTHESIA AS A WINDOW INTO SOCIAL COGNITION

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There is a general tendency when we see someone being touched to activate - in the perceivers' brain - the neural circuitry relating to touch in addition to that involved in vision. That is, there is a sense in which these visual stimuli are 'embodied'. For most people, this process is implicit: i.e. they do not report tactile experiences on their own body. However, for individuals with mirror-touch synaesthesia, observing touch is accompanied by feelings of touch on their own body. This is linked to differences in brain activity in sensory and motor regions of the brain, but is also linked to differences within regions that comprise the so-called 'social brain'. Moreover, these individuals tend to perform higher on some measures of social cognition (e.g. expression recognition). It is argued that this type of synaesthesia is linked to a lack of self-other differentiation that accounts for both the sensory phenomenology and the social cognitive profile.

A-0723

THE ROLE OF SEMANTICS IN SPANISH WORD RECOGNITION: AN INSIGHT FROM LEXICAL DECISION AND CATEGORIZATION TASKS

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This study is a detailed examination of the factors affecting word recognition in a language with a consistent system to map letters into sounds; Spanish. The influence of semantics on the recognition of words in languages with inconsistent mappings, such as English, is well documented. Not much is known for other languages. Here, we have selected five lexical and three semantic factors to investigate their influence on word recognition times and accuracy. Three different word recognition tasks were used: a lexical decision task and two category verification tasks with varying levels of semantic complexity. Interestingly and in contrast to English, none of the semantic variables entered into the analyses had a significant impact on decision latencies or errors. Imageability showed an influence on responses to both category verification tasks while the effect of connectivity was marginally significant in the category verification task with greatest semantic complexity. Results indicate that word recognition decisions in Spanish can be made without the involvement of central components of the semantic system. The role of semantics in the recognition of words in languages with consistent spelling systems will be discussed.

A-0724

HOW TO TRIGGER INSIGHT - GUIDING TO AND THROUGH AN IMPASSE

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Insight does not only occur spontaneously, but can also be triggered with the help of solution cues, as well. To explore the roles of cues in problem solving, in the present study 33 problems were solved by 26 participants, with an overall solution rate of 46.4%. They had to find out the secret method behind magic tricks and report their feelings of progress during the problem solving process. Although possibilities were taken away by showing implausible solutions, subjects could still reach a sudden solution using cues. From the pictorial, verbal and baseline (no cue) conditions, pictorial cues were the most efficient aids (resulting in 37%, 32.7% and 25.6% overall solution rates, respectively). Participants gave higher feeling of warmth ratings when they could discover how the trick works, as compared to when they provided a wrong idea or none. Testing the feasibility of cues revealed a significant benefit using pictorial cues in contrast to the baseline condition.

A-0725

THE PERSONALITY TRAITS PREDICT VIOLATIONS: WEB SURVEY AND EXPERIMENTS SIMULATING SITUATIONS

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Violations in workplace yield temporary gain for individuals but produce losses for the organizations to which such individuals belong. People who consider the conditions around them are thus expected to have a lower tendency to violate. In this study we used two methods, web surveys that ask about violation and experiments simulating situations where violation is likely to occur, to study whether personality traits (empathy, perspective-taking, sensation seeking) decrease violations and whether experiments are more effective than subjective questionnaire in violation study. Our web survey results indicated that the more a person tends to take on and consider the viewpoints of others, the higher the probability of not committing violation (concealment). Violations in the experiments are not predicted by perspective-taking. In generally, experiments where participants cannot understand what is being measured are generally less affected by social desirability than surveys with a direct question-answer format, but in this study we were able to measure the tendency for socially undesirable violation in workplace by using web surveys and the experiments showed other aspects.

A-0726

TIME-TO-COLLISION IN PEOPLE WITH CEREBRAL PALSY: DOES THE NATURE OF THE OBSTACLE MATTER?

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In everyday life situations we are required to interact with objects, and to predict where they will be and when, even when continuous visual information lacks. Motion Extrapolation is commonly measured using the time-to-contact paradigm (TTC): a moving target is suddenly occluded and participants are asked to estimate the moment at which the vanished object would contact/collide with an obstacle if it had kept moving. These estimations have been suggested to involve motor imagery (MI), the subliminal activation of the motor system, leading to the representation of an action without motor output. Studying TTC with people with cerebral palsy (PCP) would be of interest, as they are affected by motor impairment and have shown a slowdown of MI. Compared to typically developing individuals, one might thus expect significant differences in performance, potentially contributing to highlight the mechanisms underlying TTC tasks. We tested 48 PCP and 48 age-matched controls in a TTC task with two obstacles: a human silhouette and a rectangle of similar area and contrast. In both groups, collision anticipation was significantly larger for the silhouette and more anticipation for silhouette was found in PCP than in controls. Globally, results suggest the involvement of "embodiment" mechanisms in this task.

A-0727

TESTING THEORIES OF DEVELOPMENTAL DYSCALCULIA

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Developmental dyscalculia (DD) is a learning difficulty thought to be specific to mathematics. Currently dominant cognitive neuroscience theories of DD suggest that DD originates from the impairment of the magnitude representation (MR) of the human brain, residing in the interparietal sulcus (IPS), or from impaired connections between number symbols and the MR. However, behavioural research offers several alternative theories for DD and neuroimaging also suggests that impairments in DD may be linked to disruptions of other functions of the IPS than the MR. That is, besides the MR, impairment of working memory, attention, inhibition and spatial processing were also proposed to underlie DD. Strikingly, the MR theory has never been explicitly contrasted with the range of alternatives in a systematic fashion. Here we have filled this gap by recording an extremely detailed profile of DD and directly contrasting five alternative theories of DD in 9-10 year-old primary school children. Participants were filtered from a pool of 1004 children and took part in 15 standardized tests and 9 experiments. Results did not support the MR theory of DD. Various domain general functions emerged as strong markers of impaired function in DD. The theoretical and practical significance of findings will be discussed.

A-0728

IMPACT OF A STIMULATION PROGRAM OF WORKING MEMORY ON PRECALCULUS SKILLS IN PREKINDERGARTEN CHILDREN OF VULNERABLE RURAL AND URBAN AREAS

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Background: Working memory (WM) has been shown to be essential for the emergence of early precalculus skills (PC) in both preschoolers (Welsh et al., 2010) and school-age children (Andersson, 2006). There is a correlation between WM development and future academic performance (Blair, 2006). Objective: To promote the development of WM in prekindergarten children through a computer program, in vulnerable urban and rural areas, to improve learning specifically precalculus skills. Methodology: N=275 children (138 rural/137 urban), average age: 4.4 years. A comparison group (CG) and an intervention group (IG) were used. The program was applied during 16 sessions. Before and after the intervention, a WM test (AWMA) and a PC test were applied. Results: The IG reach further WM development than CG, both in the visual-spatial (VS) ($p < .001$) and in the phonological (P) ($p < .05$) areas. Rural children display clear progress in the precalculus skills. An association between WM and PC is revealed. In CG and IG, the VS area of WM has further predictive weight in PC (15.8%/ 17.8%). Discussion: The study confirms the importance of stimulating WM early in children's development. Discussed the importance of this result for the precalculus performance of children from vulnerable areas.

A-0729

ARE YOU SURE WHAT ARE YOU TOUCHING? METAMEMORY STUDY IN HAPTIC IDENTIFICATION PERFORMANCE.

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Previous haptic identification research has focused much on why this task is so difficult. People rarely exceed 50% accurate identification (Klatzky & Lederman, 1992). The present research focused on participants' metacognitive ability, that is, their ability to judge whether an object is correctly identified or not via touch perception alone. The results showed a mean identification accuracy of .46 (SD =.10), with underconfidence for the more difficult items and overconfidence for the easier items. Further, feeling of knowing (FOK) judgments were made followed by one of two different recognition tests (2-AFC or 4-AFC). No significant difference was found in predictive validity of FOK judgments between the two recognition task groups. The most interesting finding was allocation of confidence judgments about recognition for overconfidence\ underconfidence values in upper confidence categories, whereas Group 1 (2-AFC) was underconfident in their ability to recognize haptic stimuli, in contrast, Group 2 (4-AFC) was more overconfident. Future research will have to

show in what cues people rely more in their metamemory monitoring. For sum, it can be assumed that people are modestly underconfident in their ability to identify the material properties of haptic pattern.

A-0730

THE EFFECT OF TASK SET ON FIXATIONAL SACCADIC EYE MOVEMENTS

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The role of fixational saccadic eye movements is still controversial. This study investigated whether fixational saccades can adapt to task and stimulus properties to optimise the gathering of relevant spatial details. Eye movements were recorded in a 2-interval forced choice paradigm. Participants had to detect a vertical oriented grating characterised by one of 3 spatial frequencies and one of 4 contrast levels. In each trial, in one display the grating appeared superimposed with pink or white noise (which had high or low contrast), while in the other display only the noise was presented. All the factors, except for the grating contrast and the display order, were manipulated in a blocked design. Results showed that amplitude and number of saccades varied between frequency blocks. However, within each block, they were similar between the two types of displays (grating with noise and noise-only), especially when the noise had high contrast. The number of saccades was reduced in noise-only displays compared to grating displays when the noise had low contrast. Overall, these findings suggest that fixational saccades were largely guided by the task set that participants adopted in a given block, instead of being primarily adapted to the properties of the on-line information.

A-0732

THE EFFECT OF DISTRACTOR EMOTIONALITY, WORD FREQUENCY AND SEMANTIC INTERRELATEDNESS ON WORD RECOGNITION

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Emotional distractors have been shown to impair the processing of subsequently presented targets in a variety of tasks. It remains unclear, however, to what extent these effects are due to differences in semantic coherence or interrelatedness and word frequency between sets of emotional and neutral distractors. Here we manipulated the emotional status of distractors while controlling for semantic interrelatedness and word frequency. Moreover, we independently manipulated semantic interrelatedness and word frequency of distractors. The results showed that semantic interrelatedness and word frequency of the distractors had little effect on target processing. The distractor's emotional status however, systematically impaired target processing in a variety of paradigms. Our results confirm that emotional stimuli automatically attract attention at the cost of stimuli presented in close temporal proximity.

A-0733

THE MUTUAL ROLES OF ACTION REPRESENTATIONS AND SPATIAL DEICTICS IN FRENCH LANGUAGE

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Many aspects of language associated with an object's noun inform about the location of the object in relation to the action system. In the present study, we tested whether the determiners *la* (the) and *cette* (that) in French language carry embodied spatial information. In Experiment 1, participants performed a reachability judgment task after having evaluated the correct spelling of a determiner (*la* or *cette*) and an object-noun (*balle*-ball, *tasse*-cup, or *pomme*-apple). Response time for judging reachability was shorter when the determiner *la* rather than *cette* was previously presented. The opposite result was obtained with unreachable objects. In Experiment 2, we tested whether watching a reachable or unreachable object influenced the subsequent spelling judgment task of a determiner (*la* or *cette*) and a noun (*balle*, *tasse* or *pomme*). Result showed that spelling judgments were faster when the stimulus was the determiner *la* rather than *cette*, whatever the reachability of the object presented before. Considered together, these data stress the close connection between the spatial content of determiners and the representation of action possibilities, giving some evidence for embodied language processing. By contrast, presenting an object at a reachable or an unreachable location seems not sufficient to activate the related linguistic descriptors.

A-0734

THE ROLE OF MOTOR AFFORDANCES IN VISUAL WORKING MEMORY

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Motor affordances are important for object knowledge. Semantic tasks on visual objects often show interactions with motor actions. Prior neuro-imaging studies suggested that motor affordances also play a role in visual working memory. When participants remembered manipulable objects (e.g., hammer) greater premotor cortex activation was observed than when they remembered non-manipulable objects (e.g., polar bear). In the present study participants held object pictures in working memory while performing concurrent tasks such as articulation of nonsense syllables and performing hand movements. Although concurrent tasks did interfere with working memory performance, in none of the experiments did I find any evidence that concurrent motor tasks affected memory differently for manipulable and non-manipulable objects. I conclude that motor affordances are not used for visual working memory.

A-0735

BRAIN COMPUTER INTERFACE AND AMYOTROPHIC LATERAL SCLEROSIS: ATTENTION AND P300-BASED BCI PERFORMANCE.

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Brain Computer Interface (BCI) is a technology that utilizes neurophysiological signals to control external devices. Many BCI systems utilize neurophysiological signals recorded by EEG and the P300 evoked potential is usually exploited. BCI systems are intended for people suffering from motor diseases, as patients with Amyotrophic Lateral Sclerosis (ALS). Many studies showed a large performance variability across subjects, but the reasons of such variability are still unclear. In this study we investigated the influence of the attentive system on P300-based BCI performances with a group of ALS patients. We hypothesized that the attention capacity could be linked to the P300 elicited during a P300-based BCI task and consequently the performances in controlling such BCI. We tested nine participants with ALS with both a P300-speller task and a rapid serial presentation task (RSVP). The results showed a significant correlation between performance reached in the attention task and the amplitude of the P300 elicited in the BCI task. It lead us speculate that attentive processes at the basis of target identification in the RSVP are similar to that requested to control a P300-based BCI. This result opens thus a new path of research on the performance predictors of the P300-based BCIs.

A-0736

ENHANCING FACIAL IDENTITY PERCEPTION USING TRANSCRANIAL RANDOM NOISE STIMULATION

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Our ability to perceive faces is a fundamental aspect of our daily lives. A number of studies have linked the posterior Superior Temporal Sulcus (pSTS) to facial identity perception. In the current project we investigated the role of the pSTS in facial identity perception by using High Frequency Transcranial Random Noise Stimulation (tRNS). tRNS is a non-invasive brain stimulation technique that enables cortical excitability to be increased bilaterally. Thirty six participants took part. Half received active tRNS targeted at bilateral pSTS, while the other received sham tRNS. Following stimulation, participants completed the Cambridge Face Perception Test (CFPT). The CFPT examines face perception abilities for upright and inverted faces. Participants also completed a modified version of the CFPT that measures trustworthiness perception. Following active tRNS of pSTS participants significantly outperformed

the sham group in their ability to perceive facial identity for upright faces. No significant differences were found between the groups for inverted identity perception or trustworthiness perception. These findings imply that pSTS plays an important role in facial identity perception abilities and highlight a potential means by which tRNS may act to facilitate facial identity perception in healthy adults.

A-0737

SYNTACTIC PROCESSING IN THE ACQUISITION OF COMPLEX STRUCTURES

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Two lines of research on bilingual sentence processing carried out by the Psycholinguistic Research Group (PRG) at the URV are addressed in this paper, both involving subordinate structures with complementizer. The first concerns attachment ambiguity resolution in relative clauses with two attachment sites. The novelty of this research is the use of code-switched sentences where the host clause is presented in one language (English or Spanish) and the RC is given in the other. This allows to test the influence of various sorts of factors on attachment preferences, such as bilinguals' language dominance, the role of each language in the sentence (host vs embedded), and idiosyncratic cross-linguistic biases. In the second part of our presentation, we will report results from a joint research project of the PRG with Kobe University of Foreign Studies concerning the acquisition and production of subordinate (i.e. relative and complement) clauses by Spanish (L1) learners of Japanese (L2). We focused on a number of research questions, such as the role of semantic variables (animacy) in L2-sentence production, and the relative weight of L1-transfer, as a function of L2 proficiency. Results of both studies are evaluated against the background of current bilingual sentence processing models.

A-0738

TIMING AND COGNITIVE PROCESSING IN A DYADIC FRAMEWORK: WHAT GAPS IN CONVERSATION CAN TEACH US.

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A recent neuroscience perspective on the motor theory of speech perception suggests that the reason the motor cortex has been linked for so long with speech production/perception is because it is being recruited to manage the timing of turn-taking in conversation (Scott, McGettigan, & Eisner, 2009). This suggests the fundamental framework for social actions (turn-taking), is intimately connected with timing mechanisms of neurobiology.

For this study, the turn-taking structure was exploited and the effect of timing information was isolated by manipulating inter-turn silences in constructed dialogues where responses to requests were identical and affirmative such that study participants' (n = 380) ratings about "willingness" would be colored by lag time, not by the semantics of the response. All 100 ms intervals between 200 and 1200 were tested in a between groups design.

Results indicate a notable drop-off in ratings at 600 ms with statistically significant differences in ratings between 700 and 800 ms. After 900 ms, ratings level off.

Findings are discussed in terms of word production research, entrainment, and neurobiology, suggesting that time is a key form of information to which listeners attend and that this social cue is rooted in neural processing.

A-0739

NEURAL CORRELATES OF MACHIAVELLIANS IN A FAIR AND NON-FAIR SITUATION

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Although Machiavellian individuals appear to have deficits in various areas of social cognition, especially in attributing mental states and emotions to others, they can successfully adapt to the requirements of a given situation, and change tactics when necessary. Recent studies found that this flexibility may be due to elevated activities in certain brain areas such as anterior cingulate cortex, and dorsal anterior insula/inferior frontal gyrus. The present lecture reports an event-related fMRI study that analyzes brain activities responding to fair and non-fair offers from the partners during Trust Game. Interestingly, the partner's fair contributions elicited higher neural activations in high-Machs than low-Machs (inferior and superior frontal gyrus, insula), whereas non-fair offers were more likely to elevate brain activities in low-Mach people (inferior parietal lobule, medial temporal gyrus). We suggest that a social environment involving correct and equitable social relationships may be more demanding for Machiavellians than non-Machiavellians, due to their cynic and malevolent world view. When the others cooperate, they may feel an intense conflict between their long-term interest to obey the social expectations and wish to desert the partners in order to increase their profit.

A-0740

AGE-RELATED DIFFERENCES IN EXECUTIVE CONTROL DURING STRATEGY EXECUTION: A STUDY IN ARITHMETIC PROBLEM SOLVING.

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Young and older adults use several strategies to accomplish most cognitive tasks, and aging effects on human cognition is associated with strategic variations. In this study, three new strategy phenomena, and aging effects on these phenomena, document how young and older adults use executive control mechanisms during strategy execution. Participants accomplished a computational estimation task (i.e., provide approximate products to two-digit multiplication problems like 38x74) and were cued which one of two rounding strategies they had to execute on each problem. Their performance revealed strategy congruency effects (i.e., better performance when problem and strategy were congruent than when they were incongruent), conflict adaptation effects (i.e., smaller congruency effects after incongruent items than after congruent items), and posterror slowing effects (i.e., better performance on current problems following errors). Congruency and conflict adaptation effects increased with age, but not posterror slowing effects, especially in older adults with

poorer executive control processes. Our findings have important implications regarding mechanisms underlying strategy execution and aging effects on strategic variations.

A-0743

THE EFFECTS OF TESTING AND ENACTMENT ON MEMORY FOR ACTION PHRASES

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Both enactment at encoding and retrieval from memory (i.e., testing) during learning facilitate memory performance and have been explained in terms of item-specific processing. We examined the individual and combined effects of enactment and testing on the retention of action phrases. Can the testing effect be extended to the memory paradigm of action phrases? Do enactment and testing lead to similar mnemonic benefits and this for different retention intervals (5min vs. 1 week) as well as for different retrieval formats (free recall, cued recall, recognition)? In the present talk I will report the results of this ongoing research program and will discuss them in the frame of an item-specific/relational processing account.

A-0744

SHORT-TERM MEMORY TASKS COUPLED WITH ONLINE CHUNKING: A STRAIGHT MEASURE OF WORKING MEMORY.

Fabien Mathy

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It has been argued that if the capacity of working memory is the capacity to simultaneously process and store information, then measures of both processing and storage should be examined together. We further argue that processing and storage should be examined together in association when both processes are dedicated to the to-be-recalled items. Our hypothesis is that online chunking adequately measures the processing component of working memory. We investigated how chunks form in short-term memory and affect the span. A series of immediate-serial-recall-task experiments in which the compressibility of stimulus sequences was manipulated by introducing sequential patterns are outlined. All our results showed that online chunking depended on the compressibility of information likely to allow the formation of chunks. As a result, the span varied depending on the sum of information compressed within each chunk. To better understand this chunking-memory span paradigm 1) we present a method based on a sequence-alignment algorithm that both reliably scores performance and analyzes retention-error patterns and 2) we show how our tasks correlate with those of the working memory test battery (Lewandowsky et al., 2010).

A-0745

JOINT COMMITMENT MANAGEMENT IN A DYADIC SITUATION: A NON-VERBAL BODILY EXPRESSIONS ANALYSIS

Francesca Morganti ⁽¹⁾, Paride Braibanti ⁽¹⁾, Antonella Carassa ⁽²⁾, Marco Colombetti ⁽²⁾, Elisa Borsa ⁽¹⁾

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In a dyadic situation non-verbal bodily expressions are mutually exchanged and determine the intersubjective negotiation of a joint commitment (Morganti et al., 2013). The creation and maintenance of a joint commitment involves not only a verbal agreement, but there are aspects ongoing in the face-to-face interaction that can be considered complementary to verbal exchanges. The research is focusing on how joint commitment could be managed between parts through non-verbal bodily expressions during its negotiation and its violation phases by means of the Ethological Coding System for Interviews (Troisi, 1999). The research involved 35 female participants, between 19 and 27 years old ($M=21.11$; $ds=1.9$). Participants' personality profile and empathic disposition were assessed by means of Eysenck Personality Inventory (Eysenck, 1985) and Interpersonal Reactivity Index (Davis, 1980, 1983). Results show how a joint commitment seems to be independent from the participants' personality and empathic disposition but it is continually negotiated by non-verbal bodily expressions played in an intersubjective game between parts during a conversation. Experimenter bodily expressions, in fact, appear to influence participants' bodily reactions both in the creation and in the maintenance of a joint commitment. Moreover, participants' bodily expressions change according to different joint commitment life-cycles phases.

A-0746

SEMANTIC COMBINATORIAL PROCESSING OF LOW-TYPICAL AEXPRESSIONS

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BCBL, Basque center on Cognition, Brain and Language, Spain

People introduce new concepts into discourse by combining existing words. However, the combination of word-related concepts is not 'unconstrained' and must respect rules of predication (Murphy, 1990), so that a specific message can be plausible (or not). In the present fMRI study we examined the neural correlates related to semantic processing of low-typical noun-adjective Spanish phrases in context (i.e., embedded in sentences) that either plausibly combined opposite concepts (contrasting condition: 'monstruo hermoso', lovely monster) or make no sense (anomalous condition: geographic monster); and compared them to control high-typical plausible noun-adjective phrases (redundant condition: horrible monster). The available findings indicate that sentence-level combinatorial semantics relies on a left-lateralized long-range brain circuitry, whose network dynamic is modulated by the type of stimuli. Specifically, our data suggest that combining contrasting concepts (that still convey a plausible message) is supported by the strengthening of the coupling between

regions along the dorsal pathway. These results underscore the role of more dorsal regions within the reading network for creatively constructing novel meanings.

A-0747

COGNITIVE CAPACITY LIMITS IN ANXIETY AND DEPRESSION: CAN THEY BE INCREASED?

Nazanin Derakhshan

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Accumulating evidence suggests that deficits in attention control processes play a key role in emotional vulnerability to disorders such as anxiety and depression, but the underlying cognitive and neural mechanisms of such deficits are less well understood. Crucially, it is unclear how such deficits are reflected in behavioural performance. For example, according to the most cited Attentional Control Theory (Eysenck, Derakhshan et al., 2007; Derakhshan & Eysenck, 2009) anxious individuals are expected to engage in compensatory cognitive effort to overcome processing inefficiency but research is yet to determine under what circumstances should compensatory effort emerge and how it should affect task performance. I will discuss recent developments that have enhanced our understanding of the neural mechanisms behind attention control deficits in emotional disorders and their effect on task performance. I will present findings from a recent intervention that showed how engaging working memory functions through an adaptive cognitive training regime can result in enhanced working memory capacity and attention control in depression, with training effects transferable to other untrained cognitive tasks. The contributing role of these findings towards developing interventions that target the engagement of top down mechanisms to improve attentional control and subsequent cognitive task performance is discussed.

A-0748

FROM MATE CHOICE PREFERENCES TO STEREOTYPES – THE COGNITIVE MODEL OF FACE PROCESSING AS AN INTEGRATIVE FRAMEWORK

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Cognitive models of face recognition suggest that the structural information of the observed face is delivered on two pathways; one leading to the brain regions of person identification, and a second leading to the area of affective responses. Detecting familiar faces may involve both of these mechanisms. This model implies that positive emotions coming from a favoring family environment mediate cognitive processes of face preferences. Former studies found that adults with good childhood experiences prefer faces resembling their opposite-sex parent more than those with more problematic relationship. Our recent fMRI study revealed activations in brain areas of affective responses which can be evoked both with familial faces and with faces resembling these persons. From the data we can conclude that emotional proximity to a familiar individual influences preference for unknown others who resemble this person. This bias may affect social decisions not only in mate choice context, but in any kind of interpersonal interactions. These results provide initial support for a proposed model explaining the neural background of the preference for familiar faces, and the formation of stereotypes.

A-0749

BILINGUALISM ALONG THE ROMAN VIA AUGUSTA

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One of the legacies of the Roman Empire was the appearance of several languages, the so-called Romance languages, among them Catalan and Spanish. More than two thousand years after the Romans built the Via Augusta, inhabitants of Barcelona and Tarragona have taken advantage of their legacy and have investigated the consequences of learning and using Spanish and Catalan. In this talk we will introduce evidence in two major research domains we have investigated Spanish-Catalan bilinguals. First, we will present recent data on the specificities of early exposure two languages. One striking result in early bilingual acquisition is the lack of significant differences in the learning processes as a function of similarity (or difference) between the two languages of exposure. Here we will present additional data extending this surprising effect. Second, we will present new evidence regarding the language control mechanisms that are involved in bilingual language production.

A-0750

THE ROLE OF HANDWRITING AND OF SPELLING ALOUD PRACTICES ON ORTHOGRAPHIC ACQUISITION

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Some studies suggested that the specific movements memorized when learning how to write a new letter participate in the visual recognition of this letter (e.g., Longcamp, Boucard, Gilhodes, Anton, Roth, Nazarian, & Velay, 2008). However, the role of handwriting on lexical orthographic memorization hasn't been clearly established yet. Two recent studies have shown that a copying practice improves orthographic learning in comparison with a reading practice only (Ouellette, 2010; Shahar-Yames & Share, 2008). However, the copying task is a very complex task and the paradigms of these studies didn't permit to know exactly which component of copying was fundamental. The aim of the present study was to assess whether the handwriting practice is determinant independently of the short term memory component. In the learning phase, fifth graders were asked to read pseudo-words, and immediately after to remember their orthographic form by handwriting or by orally spelling. The memorisation of target orthographic forms was assessed 1 week after by handwriting or by orally spelling. Results showed that orthographic acquisition was better when items had been handwritten during the learning phase. They confirm the role of handwriting on lexical orthographic acquisition.

A-0751

BELIEVING VERSUS INTERACTING: BEHAVIOURAL AND NEURAL MECHANISMS UNDERLYING INTERPERSONAL COORDINATION

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When two people engage in a bidirectional interaction with each other, they use bottom-up sensorimotor mechanisms such as monitoring and adapting to the behaviour of the other, as well as top-down cognitive processes, modulating their beliefs and allowing them to make decisions. Most research in joint action has investigated only one of these mechanisms at a time – low-level processes underlying joint coordination, or high-level cognitive mechanisms that give insight into how people think about another. In real interactions, interplay between these two mechanisms modulates how we interact with others. In order to tease these apart in a mutual interaction, we conducted a synchronization-tapping experiment using a 2x2 factorial design, where one factor was the auditory feedback (hearing other or computer), and the other was the belief of what they were hearing (other or computer). MEG was measured from one co-actor, with the other co-actor seated outside the scanner. Our findings show frontal alpha suppression during anticipation of the task with a person vs. a computer, and frontal-sensorimotor suppression during task execution with the person vs. computer. This provides insight into neural mechanisms underlying belief of interacting with another person as well as engaging in interaction with the responsive other.

A-0752

PORTRAYING EMOTION REGULATION PROCESSES BY DYNAMIC NETWORK MODULATION

Talma Hendler, Yehonatan Wentraim, Yael Yaakov, Lavie Shpigelman, Neomi Singer, Gal Raz

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Dynamic functional modulation of distinct neural systems plays a pivotal role in the formation and regulation of human emotional experience. To depict the underlying mental dynamism of the emotional experience we use film clips and music excerpts known to induce emotions such as sadness and empathy/ anger and hostility. By using fMRI we will show how network dynamics changes with emotional context (different films and music pieces) or with the experience measure (e.g. behavioral or physiological). For that we developed a new tool to probe changing interactions within and between emotional and cognitive related networks of activation. The approach is based on continuous computation of network cohesion index (NCI), which is sensitive to both strength and variability of signal correlations between pre-defined or data-driven clusters of regions. Individual variations in network dynamics during

the various emotional experiences will be evaluated by correlating the time course of neural indices with viewer's rated emotion intensity and autonomic responses. The clinical relevance of such approach for marking psychiatric disturbances and guiding personal treatments will be discussed.

A-0753

PERSPECTIVE TAKING IS CENTRAL TO IRONY COMPREHENSION

Ira Noveck

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While theoretical discussions of irony have debated how perspective is integrated into irony understanding, the psychological literature has largely ignored this concern and has, instead, focused on the role of literal interpretations in irony processing. This talk will show how a speaker's perspective is central to irony processing and further demonstrate how through behavioral and neuroimaging experiments.

A-0754

BIRDS DON'T SPEAK: AN EYE-MOVEMENT STUDY OF THE MORPHOSYNTAX-PRAGMATICS INTERFACE IN AGREEMENT PROCESSING

Simona Mancini, Manuel Carreiras, Nicola Molinaro

BCBL, Basque Center on Cognition, Brain and Language, Spain

A critical question in the study of subject-verb agreement comprehension concerns the possibility to disentangle morphosyntactic checking from morphosyntax-pragmatics mapping. We manipulated the [\pm human] feature of the subject and compared sentences with a person agreement mismatch (Unagreement) between subject and verb that was however grammatically correct and pragmatically plausible (1b), to sentences that had the same grammatical agreement mismatch but were pragmatically implausible (2b).

HUMAN

- 1.a.Los obreros protestaron en la calle Agreement
The workers[3.pl] protested[3.pl] in the street
- 1.b.Los obreros protestamos en la calle Unagreement
We workers[3.pl] manifested[1.pl] in the street

ANIMAL

- 2.a.Los pajaros volaron por el cielo Agreement
The birds[3.pl] flew[3.pl] in the sky
- 2.b.Los pajaros volamos por el cielo Unagreement
We birds[3.pl] flew[1.pl] in the sky

Twenty-four participants participated in an eye-tracking experiment. ANOVA was run with Agreement (agreement, unagreement) and Being (human, animal) as factors. At verb position, an Agreement effect was found in first-pass and go-past time. In second-pass duration, only non-human unagreement yielded a sizeable effect, resulting in an Agreement*Being interaction. The data show that the [\pm human] nature of the subject modulates the effects of the mismatch only at later stages, arguably as a consequence of implausible morphosyntax-pragmatics mapping.

A-0755

EFFECTS OF BODY MOVEMENTS ON MOOD REGULATION

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There is increasing evidence that a dysfunction in the regulation of negative mood states plays a significant role in the onset and maintenance of depression. Research has found that levels of depression are associated with the intensity of mood regulation deficit. The present study aimed to explore the role which the body plays in mood regulation processes. More specifically, we studied whether head movements could have an influence on mood regulation in dysphoric states. Participants were induced into a sad mood and then performed a mood regulation task in which they were presented with a set of positive pictures immediately after performing either vertical (i.e., nodding) or lateral (i.e., shaking) head movements. We considered changes in mood before and after the experimental task as an index of the effectiveness of mood regulation. As expected, the results showed that higher levels of dysphoria were associated with greater difficulty in regulating the participants' mood. More importantly, this association was present in participants who shook their heads, but not in those who nodded. The implications these results have for the study of mood regulation processes and for the understanding and treatment of psychological disorders are discussed.

A-0757

ADAPTATION TO FACIAL TRUSTWORTHINESS

Beatrix Lábadí, Mónika Juhász, Franciska Fauszt, Rita Négele, Judit Szentiványi

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Face provides important information about the characteristics of individuals, such as identification of their age, gender, emotional expression. Previous studies have found aftereffects adaptation to some physical characteristics of faces (age, gender, ethnicity). In this study we investigated how the perception of personality traits from facial appearance is influenced by the set of faces. In this experiment participants adapted to either trustworthy or untrustworthy faces, while evaluating test faces on trustworthiness before and after the exposure of adaptor faces. Following adaptation to trustworthy adaptors, test faces were classified as more untrustworthy-looking comparing to classification of the same faces following adaptation to untrustworthy faces. Furthermore, the aftereffect of facial untrustworthiness showed sex differences. Present study the first to demonstrate a contrastive bias in the perception of personality traits like trustworthiness in test faces as a function of adaptor faces.

A-0758

OBJECT USE AND PLAY ACTIVITIES IN AUTISM SPECTRUM DISORDER

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It is crucial for children to explore and learn both the culturally preferred and flexible use of objects. Autism spectrum disorder (ASD) is known for deficits in social-, cognitive- and communication skills, however, little attention has been paid to difficulties in object use potentially present in ASD. We observed 6 ASD and 6 typically developing (TD) children between 2-7 years of age in semi-structured dyadic play situations, involving object manipulation. Videos were analysed by the Noldus Observer XT 8.0 software program. Our results show that: (1) In the case of conventional but unknown objects exploration dominated in children with ASD, while their parents tended heavily to demonstrate the proper use of objects, (2) In the case of replica toys children with ASD showed less creative play than TD children, while their parents used more direct teaching strategies and supported their children's fantasy play verbally, (3) In the case of familiar objects put in unusual context children with ASD demonstrated proper use of objects, but were less creative than TD children. Specifics of object use in ASD need to be further explored as they may present developmental risk factors. Further research can open the door to new diagnostic and therapeutic methods.

A-0760

TODDLERS UNDERSTANDING OF THE SOCIALLY MEDIATED REPRESENTATIONAL FUNCTION OF SYMBOLS

Gerda Margit Szalai, Katalin Egyed

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Children start to use visual representations as guides for actions between 2 and 3 years of age (DeLoache, 2002). We suppose that children understand better visual representations if they can interpret them as results of intentional actions. In Study-1 20 26-month-olds participated in either Social Condition (SC) or Non-Social Condition (N-SC). Both conditions included a Pair-matching-game and a picture-based Retrieval task. In SC the Experimenter markedly observed different objects and drew one of them. Then the children matched the drawing with the object. In CC we applied ready-made drawings without social context. Finally, the children in both conditions had to search for a ball in a landscape. The analysis revealed condition main effect [$F(1; 19) = 7.895, p = .013$]. In study-2 32 30-month-olds participated in a similar procedure, however, we applied the small replicas of the objects as visual representations. We found marginally main effect of condition [$F(1; 19) = 3.183, p = .086$]. As we predicted, children understood better the socially mediated symbolic function of pictures. However, the facilitative effect on the understanding of replicas was not unambiguous. Therefore, in an on-going study we aim to test the prediction in older infants and a simpler version in 30-month-olds.

A-0761

PREDICTIVE CODING AT DIFFERENT HIERARCHICAL LEVELS OF OBJECT REPRESENTATION

Gabor Stefanics

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The visual mismatch negativity ERP component represents a prediction error signal evoked by a stimulus which violates an implicitly learned statistical regularity. It is hypothesized that top-down influences originating in higher-level areas attenuate mismatch responses in lower areas. However, little is known about how predictions pertaining to different features of the same object are represented. Thus, we recorded EEG in a visual roving paradigm to study mismatch responses evoked by faces which violated expectations either about the color or the emotional expression (or both) of the faces. We found that physically identical deviant stimuli violating different regularities evoked early mismatch responses with remarkably different topographies at ~200ms, whereas a later mismatch response with a frontal distribution at ~400ms showed a rather similar topography for different deviants. The results are interpreted in terms of hierarchical object representations.

A-0763

ON THE CHAINS OF HABIT - A NEUROPSYCHOLOGICAL PERSPECTIVE

Sanne de Wit

Department of Clinical Psychology, University of Amsterdam, Amsterdam, the Netherlands

According to dual-system theories, the balance between a goal-directed and habitual system determines whether behaviour is sensitive to the current desirability of its consequences. This presentation will focus on the corticostriatal basis of the dual-system balance in humans, drawing from neuroimaging research with an instrumental learning paradigm that assesses the ability to adapt behaviour to changes in outcome value.

A-0764

THE NEURAL BASIS OF MACHIAVELLIANS' „COOL SYNDROME“

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Machiavellians are successful in manipulating others, identifying other's weaknesses or uncertainties in a situation in order to take the advantages for their own interest. The „cool syndrome“ refers to Machiavellian people's behavior in social situations. They keep emotional distance from others. They avoid warm and emotional interpersonal connections. Previous studies showed a negative correlation between empathy and machiavellianism, and deficits in detecting and using emotional information.

In this presentation we examined whether Machiavellians have strong inhibition (control) over their affective states or they do not have emotional responses at all? We used an experimental design that required flexibility in

order to interpret emotionally evocative/neutral situations. High-Machs showed neural activation in the posterior cingulate cortex, the insula, the medial frontal gyrus, the middle and superior temporal gyrus. These brain areas could be responsible for Machiavellians' context-dependent behavior, inhibition of non-relevant information and the support of their goal-directedness. Moreover, we concluded that they do have intense emotional reactions (e.g. insula activation can refer to negative emotional states). However, they are able to disconnect themselves from these affective states and use „cold cognitions“ in a social context.

A-0765

EMOTION REGULATION BY VARIATIONS IN ATTENTION

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Deviated attentional processes have been suggested to be implicated in the consolidation of anxiety disorders. To understand origin and function of these biases in attention, it is essential to investigate their link with other conventional measures of fear. We will first show that self-determined variations in visual attention on phobogenic stimulus material are associated with specific variations in neural activity [amygdala, orbitofrontal cortex, anterior cingulate cortex, precuneus], autonomic responding, and distressing expectancies. Degree and/or direction of the covariation between these measures are substantially different for non-phobogenic material in phobic individuals and in non-phobic individuals, in general. Our data suggest that phobic individuals engage in visual avoidance because they cannot adequately apply alternative strategies to down-regulate disadvantageous threatening cognitions and autonomic arousal. Recent research has further demonstrated that attention bias modification procedures can successfully down-regulate fear. Along these lines, we will present specific neural correlates of experimentally triggered variations in focus of attention and their modulation by task instructions in phobic and non-phobic individuals.

A-0766

INDIVIDUAL DIFFERENCES IN NUMERACY: ACCESSING MAGNITUDES IN A COMPARISON SWITCH TASK

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*Departament de Psicologia Bàsica, Universitat de Barcelona;
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Individual differences in numeracy influence performance in a variety of reasoning and decision making tasks. Nevertheless, an understanding of more basic processes underpinning this influence is lacking. It has been suggested that poor numeracy may result from either reduced attentional control or less precise numerical representation (or some combination of these). To address this issue, individuals high and low in numeracy performed a speeded numerical comparison task (small vs. large numbers; all distances = 1) involving a task-switching component (select

small vs. large number), which allows the probing of both numerical representation and cognitive control. Measures of cognitive control (switch costs) were independent of numeracy, and all subjects showed expected effects of numerical processing (task instructions and numerical size). These numerical effects, however, differed between groups. In addition to faster response times, individuals higher in numeracy showed a reduced semantic congruency effect, and additive effects of size and task. For lower numerate individuals, in contrast, these latter effects interacted. Results suggest that 'numeracy' can indeed be tied to lower level numerical processing. What distinguishes higher numerate individuals appears to be more fluid access to numerical magnitude information, generally irrespective of task instructions.

A-0767

THE BILATERAL FIELD ADVANTAGE IN VSTM IS A SIGNATURE OF ATTENTIONAL SELECTION

Jean-Francois Delvenne, Jessica Holt

University of Leeds, UK

Recent studies have demonstrated superior visual processing when the information is distributed between the left and right visual fields as compared to within the same single hemifield, a phenomenon known as the "bilateral field advantage" (BFA). Our lab has recently investigated whether a BFA also occurs in visual short-term memory (VSTM). Here, we present two major findings. Firstly, we provide evidence that the separation of the items between the two hemifields per se does not affect the number of items that can be stored in VSTM at any one time. Secondly, we show that a BFA may actually be found in VSTM, but only when the to-be-remembered items are presented among distracters. This suggests that the BFA is a general feature of selective attention and can be found in VSTM when attentional selective processes at encoding are particularly engaged in the task.

A-0768

A DUAL-TASK APPROACH TO STUDY TEMPORAL PREPARATION INDUCED BY AUDITORY AND VISUAL RHYTHMS

Diana Cutanda, Ángel Correa, Daniel Sanabria

Departamento de Psicología Experimental, Universidad de Granada, Spain

The present study investigated whether participants can develop temporal preparation driven by auditory or visual isochronous rhythms when concurrently performing a working memory task within the same modality. Participants responded either to an auditory (Experiment 1) or to a visual target (Experiment 2) presented after a regular or an irregular sequence of auditory or visual stimuli, respectively. This task was performed concurrently with a working memory task. Results of Experiment 1 showed that participants responded faster after auditory regular compared to irregular rhythms and that this effect was not affected by performance of the secondary working memory task. In contrast, Experiment 2 showed that visual rhythms produced small effects of temporal preparation, which vanished when the secondary task involved high memory demands. These results suggest an auditory advantage for temporal preparation driven by rhythms.

A-0769**HOW ARE ORTHOGRAPHIC REPRESENTATIONS LEARNED?****Colin J. Davis***University of Bristol, UK*

There has been considerable interest in orthographic processing over the past decade, and in particular on the orthographic representations and mechanisms underlying. Most of this research has focussed on skilled readers, and very little attention has been paid to the mechanisms that enable orthographic representations to be learned. The SOLAR model (Davis, 1999) proposed an account of these learning mechanisms. In this talk I describe this account and discuss how it can explain a range of empirical findings, including recent developmental studies that have used similar masked priming methodologies to those frequently used in experiments with adult readers. I will argue that this theoretical account may also have implications for understanding individual differences in reading ability.

A-0773**PROCESSING FACIAL EXPRESSIONS OF COOPERATION AND DECEPTION ACTIVATES DIFFERENT CORTICAL REGIONS: AN FMRI STUDY****Zsófia Kovács-Bálint⁽¹⁾, Anita Deák⁽²⁾, Péter Papp⁽²⁾, Gábor Perlaki⁽³⁾, Gergely Orsi⁽³⁾, István Hernádi⁽¹⁾, Tamás Bereczkei⁽²⁾***(1) Department of Experimental Neurobiology,**(2) Institute of Psychology,**(3) MTA-PTE Clinical Neuroscience MR Research Group, University of Pécs, Hungary*

In the present study, our aim was to investigate whether specialized cortical brain regions are activated when participants evaluate complex social facial expressions of co-operation or deception. Twenty-nine healthy volunteers (16 females) participated in an event-related fMRI experiment. Standardized grayscale co-operator and defector facial images (taken previously in socioeconomic game) were briefly presented in two consecutive blocks. In each block, the subjects' task was to decide whether each presented face belonged to either a co-operator or to a defector person, respectively. Neutral faces (presented before each block) served as baseline. Data were collected on a 3T Siemens Magnetom TrioTim MRI scanner, and the hemodynamic (BOLD) responses were analyzed. The occipital face area (OFA) showed higher bilateral activation and the fusiform face area (FFA) showed higher activation with left-sided dominance to co-operator faces (compared to neutral ones), indicating that cooperator faces were processed as a preferred, natural perceptual category. In contrast, defector faces induced higher activation in the left cuneus (BA17), and in the left prefrontal cortex (BA9), which may reflect the greater covert attention allocated to them as a non-salient perceptual category. Results, for the first time, suggest the existence of distinct cooperator and cheater-detector modules in the human neocortex.

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European Research Council (ERC) Symposium: Pre-conference event	August 29 Thursday	10:00	0.83	ERC
Keynote Session 1 - Broadbent Lecture	August 29 Thursday	18:30	Harmonia	K1
Keynote Session 2	August 30 Friday	18:30	Harmonia	K2
Keynote Session 3 - Bertelson lecture	August 31 Saturday	18:00	Harmonia	K3
Keynote Session 4	September 1 Sunday	11:30	Harmonia	K4
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Poster session B	August 30 Friday	11:00	Aula	PB
Poster session C	August 31 Saturday	11:00	Aula	PC
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Working Memory and Visuo-Spatial Processes	August 30 Friday	9:00	0.87	T12
Decision Making	August 30 Friday	9:00	0.100b	T13
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Numerical Cognition: Acquisition and Disorders	August 30 Friday	9:00	0.100a	T15
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Attention, expectation and prediction and their effects on early auditory processing: SYMPOSIUM	August 30 Friday	9:00	0.83	T1S1
Implicit cognition: Current theories and methods: SYMPOSIUM	August 30 Friday	9:00	0.81	T1S2
Working memory updating: discovering its nature from the study of different materials and task procedures as well as individual differences: SYMPOSIUM	August 30 Friday	9:00	0.89	T1S3
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Attention: Individual Aspects	August 30 Friday	13:30	0.100b	T25

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Neurocognitive correlates of cognitive control: SYMPOSIUM	August 30 Friday	13:30	Harmonia	T2S1
Perspective taking in communicative acts: SYMPOSIUM	August 30 Friday	13:30	0.81	T2S2
Predictive processes in perception: SYMPOSIUM	August 30 Friday	13:30	0.83	T2S3
Control processes in bilinguals	August 30 Friday	16:00	0.89	T31
Acoustics in Language Processing	August 30 Friday	16:00	0.87	T32
Perception, Action, Motor Control	August 30 Friday	16:00	0.100a	T33
Learning 1	August 30 Friday	16:00	1.79	T34
Cognition and Emotion 1	August 30 Friday	16:00	0.99	T35
Attention: Selective Attention	August 30 Friday	16:00	0.100b	T36
Consciousness and metacognition: SYMPOSIUM	August 30 Friday	16:00	0.83	T3S1
Positive and negative consequences of retrieval: SYMPOSIUM	August 30 Friday	16:00	0.79	T3S2
Synaesthesia: how unusual perception can inform normal cognition: SYMPOSIUM	August 30 Friday	16:00	0.81	T3S3
Semantic effects in language comprehension	August 31 Saturday	9:00	0.100a	T41
Perception	August 31 Saturday	9:00	1.79	T42
Working Memory: Interference and Maintenance	August 31 Saturday	9:00	0.89	T43
Development 1	August 31 Saturday	9:00	0.100b	T44
Executive Control: Multitasking	August 31 Saturday	9:00	0.87	T45
Continuous issues in numerical cognition: SYMPOSIUM	August 31 Saturday	9:00	0.79	T4S1
Sense of agency: How do we know what we are doing?: SYMPOSIUM	August 31 Saturday	9:00	0.83	T4S2
Revisiting visual-word recognition: SYMPOSIUM	August 31 Saturday	9:00	0.81	T4S3
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Timing and Prediction	August 31 Saturday	13:30	0.100b	T52
Factors Affecting Working Memory processes	August 31 Saturday	13:30	0.79	T53

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Bringing bilinguals to the heart of psycholinguistics: A tribute to the memory of Rosa Sanchez-Casas: SYMPOSIUM	August 31 Saturday	13:30	0.81	T5S1
Beyond reward: Characterizing the diverse functions of the neural 'reward' system in human cognition: SYMPOSIUM	August 31 Saturday	13:30	0.87	T5S2
A current view on joint action: SYMPOSIUM	August 31 Saturday	13:30	0.83	T5S3
Costs of storage and binding in visual working memory: SYMPOSIUM	August 31 Saturday	13:30	Harmonia	T5S4
Semantic aspects of language processing	August 31 Saturday	16:00	0.100a	T61
Linguistic aspects of bilingualism	August 31 Saturday	16:00	0.100b	T62
Learning 2	August 31 Saturday	16:00	1.79	T63
Cognition and Emotion 2	August 31 Saturday	16:00	0.99	T64
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Neuro-cognitive mechanisms of conscious and unconscious visual perception: SYMPOSIUM	August 31 Saturday	16:00	0.81	T6S2
How we make false memories: Several explicative factors: SYMPOSIUM	August 31 Saturday	16:00	0.79	T6S3
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Thinking	September 1 Sunday	9:00	0.100a	T72
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Attention: Visual Attention	September 1 Sunday	9:00	0.87	T74
Memory: Working Memory	September 1 Sunday	9:00	0.89	T75
Attentional blink like effects: A tale of the salient and the unexpected: SYMPOSIUM	September 1 Sunday	9:00	0.81	T7S1
Control of emotional reactions: SYMPOSIUM	September 1 Sunday	9:00	0.83	T7S2
Time as information: Temporal event prediction in humans, animals and machines: SYMPOSIUM	September 1 Sunday	9:00	0.79	T7S3

AUTHOR INDEX

Name	Role	AbsNo	Date	Time	Room	Sect
Aalders, Ellen	Co-author	A-0379	Sunday, 1 September	9:00	1.79	T71
Aarts, Henk	Co-author	A-0620	Friday, 30 August	13:30	0.99	T24
Aarts, Henk	Co-author	A-0711	Friday, 30 August	13:30	0.99	T24
Aarts, Henk	Co-author	A-0409	Saturday, 31 August	9:00	0.83	T4S2
Abrahamse, Elger L.	Co-author	A-0464	Saturday, 31 August	13:30	0.89	T55
Abutalebi, Jubin	Co-author	A-0443	Friday, 30 August	13:30	0.87	T22
Abutalebi, Jubin	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Acheson, Daniel J.	Co-author	A-0492	Friday, 30 August	11:00	Aula	PB
Adam, Jos J.	1st author	A-0290	Saturday, 31 August	11:00	Aula	PC
Adamou, Christina	1st author	A-0221	Friday, 30 August	11:00	Aula	PB
Agrillo, Christian	1st author	A-0068	Saturday, 31 August	9:00	0.79	T4S1
Aguirre, Carmen	1st author	A-0631	Friday, 30 August	11:00	Aula	PB
Ahissar, Merav	Co-author	A-0187	Friday, 30 August	13:30	1.79	T21
Ahmed, Lubna	1st author	A-0712	Friday, 30 August	16:00	0.100b	T36
Aisenberg, Daniela	1st author	A-0134	Saturday, 31 August	13:30	0.89	T55
Aisenberg, Daniela	Co-author	A-0038	Thursday, 29 August	16:00	Aula	PA
Aizenberg, Olga	1st author	A-0187	Friday, 30 August	13:30	1.79	T21
Akiu, Naohiro	Co-author	A-0725	Saturday, 31 August	11:00	Aula	PC
Akman, Emine	1st author	A-0537	Friday, 30 August	11:00	Aula	PB
Alario, F.-Xavier	Co-author	A-0422	Thursday, 29 August	16:00	Aula	PA
Alario, F.-Xavier	Co-author	A-0332	Friday, 30 August	16:00	0.87	T32
Albonico, Andrea	Co-author	A-0333	Friday, 30 August	13:30	0.100b	T25
Albu, Mónika	1st author	A-0271	Thursday, 29 August	16:00	Aula	PA
Alda, Jose Angel	Co-author	A-0244	Friday, 30 August	11:00	Aula	PB
Alessandro, Laudanna	Co-author	A-0522	Saturday, 31 August	11:00	Aula	PC
Algom, Daniel	Co-author	A-0155	Thursday, 29 August	16:00	Aula	PA
Algom, Daniel	Co-author	A-0156	Thursday, 29 August	16:00	Aula	PA
Allen, Richard	1st author	A-0266	Saturday, 31 August	13:30	Harmonia	T5S4
Allen, Richard	Co-author	A-0118	Thursday, 29 August	16:00	Aula	PA
Allen, Richard	Co-author	A-0175	Friday, 30 August	11:00	Aula	PB
Allen, Richard	Co-author	A-0454	Friday, 30 August	9:00	0.87	T12
Allen, Richard	Co-author	A-0317	Saturday, 31 August	9:00	0.100b	T44
Allen, Richard	Co-author	A-0115	Saturday, 31 August	13:30	Harmonia	T5S4
Álvarez, Carlos J.	1st author	A-0090	Saturday, 31 August	13:30	0.81	T5S1
Alves, Mara	Co-author	A-0219	Friday, 30 August	11:00	Aula	PB
Amado, I.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Amado, Isabelle	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Amado, Sonia	Co-author	A-0497	Thursday, 29 August	16:00	Aula	PA
Amado, Sonia	Co-author	A-0649	Thursday, 29 August	16:00	Aula	PA
Amado, Sonia	Co-author	A-0578	Saturday, 31 August	11:00	Aula	PC
Amsel, Ben D.	Co-author	A-0017	Saturday, 31 August	16:00	0.100a	T61
Anderson, Michael C.	Co-author	A-0533	Friday, 30 August	11:00	Aula	PB
André, Carine	Co-author	A-0177	Saturday, 31 August	11:00	Aula	PC
Andrearczyk, Krzysztof	Co-author	A-0435	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Andres, Michael	Co-author	A-0363	Thursday, 29 August	16:00	Aula	PA
Andrés, Pilar	Co-author	A-0075	Sunday, 1 September	9:00	0.81	T7S1
Andrews, Bridget	1st author	A-0038	Thursday, 29 August	16:00	Aula	PA
Andrews, Sally	Co-author	A-0545	Friday, 30 August	11:00	Aula	PB
Angel, Lucie	Co-author	A-0267	Saturday, 31 August	11:00	Aula	PC
Anholt, Gideon	Co-author	A-0693	Thursday, 29 August	16:00	Aula	PA
Anholt, Gideon E.	Co-author	A-0304	Thursday, 29 August	16:00	Aula	PA
Anholt, Gideon E.	Co-author	A-0260	Saturday, 31 August	11:00	Aula	PC
Anseeuw, Bart	1st author	A-0302	Saturday, 31 August	11:00	Aula	PC
Ansermet, François	Co-author	A-0475	Friday, 30 August	11:00	Aula	PB
Ansonge, Ulrich	1st author	A-0316	Saturday, 31 August	16:00	0.81	T6S2
Ansonge, Ulrich	Co-author	A-0452	Saturday, 31 August	11:00	Aula	PC
Anssens, A.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Antonietti, Jean-Philippe	Co-author	A-0128	Friday, 30 August	16:00	0.99	T35
Aparici, Melina	Co-author	A-0466	Friday, 30 August	9:00	0.100b	T13
Apestequia, Jose	Co-author	A-0466	Friday, 30 August	9:00	0.100b	T13
Arduino, Lisa S.	1st author	A-0718	Friday, 30 August	11:00	Aula	PB
Arduino, Lisa S.	1st author	A-0333	Friday, 30 August	13:30	0.100b	T25
Arduino, Lisa S.	Co-author	A-0447	Saturday, 31 August	11:00	Aula	PC
Ariga, Atsunori	1st author	A-0035	Saturday, 31 August	11:00	Aula	PC
Arıkan, Elvan	1st author	A-0497	Thursday, 29 August	16:00	Aula	PA
Armengol, J.	Co-author	A-0469	Saturday, 31 August	11:00	Aula	PC
Arminjon, Mathieu	1st author	A-0510	Friday, 30 August	11:00	Aula	PB
Arminjon, Mathieu	Co-author	A-0475	Friday, 30 August	11:00	Aula	PB
Arnon, Inbal	Co-author	A-0466	Friday, 30 August	9:00	0.100b	T13
Artuso, Caterina	1st author	A-0467	Friday, 30 August	9:00	0.89	T1S3
Ashida, Hiroshi	Co-author	A-0278	Saturday, 31 August	11:00	Aula	PC
Ashida, Hiroshi	Co-author	A-0279	Saturday, 31 August	11:00	Aula	PC
Ashkenazi, Sarit	1st author	A-0608	Friday, 30 August	9:00	0.100a	T15
Astle, Duncan E.	Co-author	A-0056	Saturday, 31 August	9:00	0.100a	T41
Asueta-Lorente, Juan-Francisco	1st author	A-0037	Thursday, 29 August	16:00	Aula	PA
Atalay, Nart Bedin	1st author	A-0557	Saturday, 31 August	11:00	Aula	PC
Atalay, Nart Bedin	Co-author	A-0546	Friday, 30 August	11:00	Aula	PB
Atas, Anne	Co-author	A-0468	Thursday, 29 August	16:00	Aula	PA
Attout, Lucie	1st author	A-0535	Friday, 30 August	11:00	Aula	PB
Attout, Lucie	Co-author	A-0170	Friday, 30 August	9:00	0.87	T12
Aue, Tatjana	1st author	A-0765	Sunday, 1 September	9:00	0.83	T7S2
Aurélia, Bugaïska	Co-author	A-0183	Thursday, 29 August	16:00	Aula	PA
Aurélie, Biervoye	1st author	A-0366	Thursday, 29 August	16:00	Aula	PA
Avcu, Enes	1st author	A-0083	Saturday, 31 August	11:00	Aula	PC
Avidan, Galia	Co-author	A-0528	Friday, 30 August	11:00	Aula	PB
Avishai, Henik	Co-author	A-0513	Saturday, 31 August	13:30	0.100a	T54
Avnit, Amir	Co-author	A-0664	Saturday, 31 August	13:30	0.89	T55
Avraamides, Marios N.	Co-author	A-0242	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Avraamides, Marios N.	Co-author	A-0474	Thursday, 29 August	16:00	Aula	PA
Avraamides, Marios N.	Co-author	A-0221	Friday, 30 August	11:00	Aula	PB
Avraamides, Marios N.	Co-author	A-0145	Friday, 30 August	13:30	0.81	T2S2
Axel, Cleeremans	Co-author	A-0165	Saturday, 31 August	11:00	Aula	PC
Aydinlik, Aysegul	1st author	A-0604	Saturday, 31 August	16:00	0.99	T64
Ayneto, Alba	1st author	A-0127	Saturday, 31 August	11:00	Aula	PC
Ayneto, Alba	Co-author	A-0078	Saturday, 31 August	13:30	1.79	T51
Aytürk, Ezgi	1st author	A-0588	Friday, 30 August	11:00	Aula	PB
Baayen, R. Harald	Co-author	A-0462	Friday, 30 August	13:30	1.79	T21
Baccino, Thierry	Co-author	A-0171	Friday, 30 August	11:00	Aula	PB
Bacon, E. L.	Co-author	A-0084	Saturday, 31 August	11:00	Aula	PC
Bacon, Elisabeth	Co-author	A-0124	Thursday, 29 August	16:00	Aula	PA
Baddeley, Alan	Co-author	A-0266	Saturday, 31 August	13:30	Harmonia	T5S4
Bahnmueller, Julia	1st author	A-0352	Thursday, 29 August	16:00	Aula	PA
Bajo, M^a Teresa	Co-author	A-0631	Friday, 30 August	11:00	Aula	PB
Bajo, Teresa	1st author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Bajo, Teresa	Co-author	A-0299	Thursday, 29 August	16:00	Aula	PA
Bajo, Teresa	Co-author	A-0533	Friday, 30 August	11:00	Aula	PB
Bajo, Teresa	Co-author	A-0367	Saturday, 31 August	11:00	Aula	PC
Bajo, Teresa	Co-author	A-0388	Saturday, 31 August	11:00	Aula	PC
Baker, A. G.	Co-author	A-0258	Sunday, 1 September	9:00	0.100a	T72
Balas, Robert	1st author	A-0393	Saturday, 31 August	16:00	1.79	T63
Balas, Robert	Co-author	A-0482	Sunday, 1 September	9:00	0.89	T75
Balázs, László	Co-author	A-0567	Saturday, 31 August	11:00	Aula	PC
Balázs, László	Co-author	A-0642	Saturday, 31 August	11:00	Aula	PC
Balci, Fuat	1st author	A-0498	Sunday, 1 September	9:00	0.79	T7S3
Ballester, Jordi	Co-author	A-0108	Saturday, 31 August	11:00	Aula	PC
Bandecchi, V.	1st author	A-0286	Saturday, 31 August	9:00	0.100a	T41
Banissy, M. J.	Co-author	A-0736	Saturday, 31 August	11:00	Aula	PC
Bankieris, Kaitlyn	Co-author	A-0139	Friday, 30 August	16:00	0.81	T3S3
Bar-Anan, Yoav	Co-author	A-0276	Friday, 30 August	11:00	Aula	PB
Barbara, Pelgrims	Co-author	A-0603	Friday, 30 August	13:30	0.87	T22
Barber, Horacio	Co-author	A-0090	Saturday, 31 August	13:30	0.81	T5S1
Barbería, I.	Co-author	A-0258	Sunday, 1 September	9:00	0.100a	T72
Barbu, Cristina	1st author	A-0700	Friday, 30 August	16:00	0.89	T31
Barca, Laura	1st author	A-0102	Thursday, 29 August	16:00	Aula	PA
Bardi, Lara	1st author	A-0311	Friday, 30 August	11:00	Aula	PB
Bardolph, Megan D.	Co-author	A-0017	Saturday, 31 August	16:00	0.100a	T61
Barkaszi, Irén	1st author	A-0567	Saturday, 31 August	11:00	Aula	PC
Barkaszi, Irén	Co-author	A-0642	Saturday, 31 August	11:00	Aula	PC
Barraclough, Nick E.	Co-author	A-0430	Friday, 30 August	11:00	Aula	PB
Barrouillet, P.	Co-author	A-0151	Friday, 30 August	11:00	Aula	PB
Barrouillet, Pierre	1st author	A-0217	Saturday, 31 August	13:30	0.79	T53
Barrouillet, Pierre	Co-author	A-0249	Friday, 30 August	13:30	0.100a	T26

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Barrouillet, Pierre	Co-author	A-0377	Saturday, 31 August	13:30	0.79	T53
Barrouillet, P.	Co-author	A-0205	Friday, 30 August	11:00	Aula	PB
Bar-Tal, Tamar Gur Arye	1st author	A-0155	Thursday, 29 August	16:00	Aula	PA
Bartlett, K. E.	1st author	A-0141	Thursday, 29 August	16:00	Aula	PA
Bartlett, K. E.	1st author	A-0538	Friday, 30 August	11:00	Aula	PB
Baruchin, Liad	Co-author	A-0401	Friday, 30 August	9:00	0.79	T11
Basford, Yael	1st author	A-0007	Saturday, 31 August	11:00	Aula	PC
Basso, Demis	1st author	A-0325	Friday, 30 August	11:00	Aula	PB
Basso, Demis	1st author	A-0323	Friday, 30 August	9:00	0.89	T1S3
Batel, Ben-Zur	Co-author	A-0273	Thursday, 29 August	16:00	Aula	PA
Bauer, Markus	Co-author	A-0751	Thursday, 29 August	16:00	Aula	PA
Baumard	Co-author	A-0648	Friday, 30 August	16:00	0.100a	T33
Baus, Cristina	1st author	A-0349	Friday, 30 August	13:30	0.81	T2S2
Beaman, C. Philip	Co-author	A-0438	Thursday, 29 August	16:00	Aula	PA
Beaufort, Aline	1st author	A-0014	Saturday, 31 August	11:00	Aula	PC
Beckers, Tom	Co-author	A-0489	Saturday, 31 August	11:00	Aula	PC
Beckwé, Mieke	1st author	A-0387	Friday, 30 August	13:30	0.100b	T25
Bednarek, Hanna	1st author	A-0397	Thursday, 29 August	16:00	Aula	PA
Beffara, Brice	1st author	A-0566	Friday, 30 August	11:00	Aula	PB
Belardinelli, M. Olivetti	Co-author	A-0707	Thursday, 29 August	16:00	Aula	PA
Belardinelli, Marta Olivetti	Co-author	A-0574	Friday, 30 August	11:00	Aula	PB
Bellocchi, Stéphanie	1st author	A-0177	Saturday, 31 August	11:00	Aula	PC
Ben Shalom, Dorit	Co-author	A-0195	Thursday, 29 August	16:00	Aula	PA
Bendixen, Alexandra	1st author	A-0375	Friday, 30 August	13:30	0.83	T2S3
Bendixen, Alexandra	Co-author	A-0104	Thursday, 29 August	16:00	Aula	PA
Bendixen, Alexandra	Co-author	A-0117	Thursday, 29 August	16:00	Aula	PA
Bendixen, Alexandra	Co-author	A-0477	Friday, 30 August	9:00	0.83	T1S1
Bendler, Sara A.	Co-author	A-0204	Thursday, 29 August	16:00	Aula	PA
Benedetti, Filippo	Co-author	A-0102	Thursday, 29 August	16:00	Aula	PA
Benraiss, Abdel	Co-author	A-0125	Saturday, 31 August	9:00	0.100a	T41
Ben-Shalom, Tamar	Co-author	A-0049	Thursday, 29 August	16:00	Aula	PA
Beran, Eszter	1st author	A-0580	Thursday, 29 August	16:00	Aula	PA
Bereby-Meyer, Yoella	Co-author	A-0025	Friday, 30 August	11:00	Aula	PB
Bereczkei, Tamas	Co-author	A-0764	Thursday, 29 August	16:00	Aula	PA
Bereczkei, Tamás	Co-author	A-0773	Saturday, 31 August	11:00	Aula	PC
Bereczkei, Tamás	Co-author	A-0739	Friday, 30 August	9:00	0.99	T14
Bereczkei, Tamás	Co-author	A-0748	Friday, 30 August	9:00	0.99	T14
Berger, Andrea	Co-author	A-0049	Thursday, 29 August	16:00	Aula	PA
Berggren, Nick	1st author	A-0448	Saturday, 31 August	11:00	Aula	PC
Berkovich-Ohana, Aviva	Co-author	A-0022	Saturday, 31 August	13:30	0.100b	T52
Bernolet, Sarah	1st author	A-0334	Thursday, 29 August	16:00	Aula	PA
Bertels, Julie	1st author	A-0543	Saturday, 31 August	11:00	Aula	PC
Bertels, Julie	Co-author	A-0365	Friday, 30 August	11:00	Aula	PB
Berthié, Gaelle	Co-author	A-0172	Saturday, 31 August	11:00	Aula	PC

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Name	Role	AbsNo	Date	Time	Room	Sect
Berti, Stefan	1st author	A-0224	Sunday, 1 September	9:00	0.81	T7S1
Besner, Derek	Co-author	A-0519	Friday, 30 August	16:00	0.87	T32
Best, Maisy	1st author	A-0313	Thursday, 29 August	16:00	Aula	PA
Beurms, Sarah	1st author	A-0489	Saturday, 31 August	11:00	Aula	PC
Beyersmann, Elisabeth	1st author	A-0516	Friday, 30 August	11:00	Aula	PB
Beyersmann, Elisabeth	Co-author	A-0563	Saturday, 31 August	11:00	Aula	PC
Biau, Emmanuel	1st author	A-0381	Saturday, 31 August	11:00	Aula	PC
Biedermann, Britta	1st author	A-0563	Saturday, 31 August	11:00	Aula	PC
Bielecki, Max	Co-author	A-0483	Saturday, 31 August	11:00	Aula	PC
Bielecki, Max	Co-author	A-0686	Saturday, 31 August	16:00	0.87	T65
Bilalic, Merim	1st author	A-0095	Saturday, 31 August	16:00	0.87	T65
Binder	Co-author	A-0654	Friday, 30 August	11:00	Aula	PB
Binkofski, Ferdinand	Co-author	A-0504	Thursday, 29 August	16:00	Aula	PA
Bisazza, Angelo	Co-author	A-0068	Saturday, 31 August	9:00	0.79	T4S1
Blaser, Erik	Co-author	A-0093	Saturday, 31 August	9:00	0.100b	T44
Blaut, Agata	Co-author	A-0684	Friday, 30 August	16:00	0.99	T35
Blokpoel, Mark	Co-author	A-0463	Friday, 30 August	13:30	0.81	T2S2
Blotenberg, Iris	Co-author	A-0261	Friday, 30 August	9:00	1.79	T16
Blotenberg, Iris	Co-author	A-0415	Saturday, 31 August	9:00	0.83	T4S2
Boada, Roger	1st author	A-0318	Friday, 30 August	11:00	Aula	PB
Boada, Roger	Co-author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
Bocanegra, Bruno	Co-author	A-0732	Sunday, 1 September	9:00	0.81	T7S1
Bodrogi, Barbara	Co-author	A-0764	Thursday, 29 August	16:00	Aula	PA
Boehler, C. Nico	1st author	A-0331	Saturday, 31 August	13:30	0.87	T5S2
Boehler, Carsten	Co-author	A-0293	Thursday, 29 August	16:00	Aula	PA
Boehler, Nico	Symposium Chair	-	Saturday, 31 August	13:30	0.87	T5S2
Boehler, Nico	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Boekel, Wouter	Co-author	A-0371	Friday, 30 August	13:30	Harmonia	T2S1
Bogler, Carsten	Co-author	A-0209	Friday, 30 August	13:30	0.81	T2S2
Bogon, Johanna	1st author	A-0281	Friday, 30 August	11:00	Aula	PB
Bombeke, Klaas	1st author	A-0077	Thursday, 29 August	16:00	Aula	PA
Bonin, Patrick	Co-author	A-0186	Friday, 30 August	11:00	Aula	PB
Bonin, Patrick	Co-author	A-0298	Saturday, 31 August	16:00	0.100a	T61
Bonnefond, A.	1st author	A-0150	Thursday, 29 August	16:00	Aula	PA
Bonnefond, Anne	Co-author	A-0124	Thursday, 29 August	16:00	Aula	PA
Bonnefond, Anne	Co-author	A-0149	Sunday, 1 September	9:00	0.100b	T73
Bonnotte, Isabelle	Co-author	A-0733	Friday, 30 August	11:00	Aula	PB
Bonomi, Mattia	Co-author	A-0359	Friday, 30 August	9:00	0.100b	T13
Boon, P.	Co-author	A-0334	Thursday, 29 August	16:00	Aula	PA
Borella, Erika	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Borella, Erika	Co-author	A-0268	Saturday, 31 August	11:00	Aula	PC
Borghini, Anna M.	Co-author	A-0602	Saturday, 31 August	11:00	Aula	PC
Borsa, Elisa	Co-author	A-0745	Saturday, 31 August	11:00	Aula	PC
Bosch, Louis ten	1st author	A-0345	Sunday, 1 September	9:00	1.79	T71

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Name	Role	AbsNo	Date	Time	Room	Sect
Bosse, Marie-Line	1st author	A-0750	Friday, 30 August	11:00	Aula	PB
Bottiroli, Sara	1st author	A-0180	Friday, 30 August	11:00	Aula	PB
Botto, Marta	Co-author	A-0323	Friday, 30 August	9:00	0.89	T1S3
Bouazzaoui, Badiaa	Co-author	A-0267	Saturday, 31 August	11:00	Aula	PC
Bouhsira-Sabag, Anat	Co-author	A-0401	Friday, 30 August	9:00	0.79	T11
Boursain, Emeline	1st author	A-0365	Friday, 30 August	11:00	Aula	PB
Boursain, Emeline	Co-author	A-0543	Saturday, 31 August	11:00	Aula	PC
Boutonnet, B.	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31
Bovend'Eerd, Tamar J. H.	Co-author	A-0290	Saturday, 31 August	11:00	Aula	PC
Boves, Lou	Co-author	A-0345	Sunday, 1 September	9:00	1.79	T71
Bóhm, Tamás M.	Co-author	A-0315	Friday, 30 August	13:30	0.83	T2S3
Bölte, Jens	Co-author	A-0326	Friday, 30 August	11:00	Aula	PB
Braem, Senne	1st author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Braem, Senne	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Braibanti, Paride	Co-author	A-0745	Saturday, 31 August	11:00	Aula	PC
Brand, Sophie	1st author	A-0364	Saturday, 31 August	11:00	Aula	PC
Brandimonte, Maria A.	Co-author	A-0526	Sunday, 1 September	9:00	0.89	T75
Branzi, Francesca M.	1st author	A-0443	Friday, 30 August	13:30	0.87	T22
Branzi, Francesca Martina	Co-author	A-0349	Friday, 30 August	13:30	0.81	T2S2
Brass, Marcel	Co-author	A-0451	Friday, 30 August	11:00	Aula	PB
Brass, Marcel	Co-author	A-0455	Friday, 30 August	11:00	Aula	PB
Brass, Marcel	Co-author	A-0306	Saturday, 31 August	11:00	Aula	PC
Brass, Marcel	Co-author	A-0041	Saturday, 31 August	9:00	0.83	T4S2
Brass, Marcel	Co-author	A-0193	Saturday, 31 August	9:00	0.83	T4S2
Brass, Marcel	Co-author	A-0415	Saturday, 31 August	9:00	0.83	T4S2
Braver, Todd S.	Co-author	A-0573	Saturday, 31 August	13:30	0.89	T55
Brédart, Serge	Co-author	A-0014	Saturday, 31 August	11:00	Aula	PC
Brenner, Eli	Co-author	A-0632	Thursday, 29 August	16:00	Aula	PA
Bret, Amélie	Co-author	A-0566	Friday, 30 August	11:00	Aula	PB
Brochard, Renaud	1st author	A-0280	Saturday, 31 August	13:30	0.100b	T52
Brochard, Renaud	Co-author	A-0339	Saturday, 31 August	11:00	Aula	PC
Brouillet, Denis	Co-author	A-0440	Thursday, 29 August	16:00	Aula	PA
Brouillet, Denis	Co-author	A-0499	Friday, 30 August	11:00	Aula	PB
Brouillet, Thibaut	Co-author	A-0499	Friday, 30 August	11:00	Aula	PB
Brown, Charity	Co-author	A-0118	Thursday, 29 August	16:00	Aula	PA
Brown, Charity	Co-author	A-0245	Saturday, 31 August	11:00	Aula	PC
Brown, Charity	Co-author	A-0317	Saturday, 31 August	9:00	0.100b	T44
Brown, Louise	Co-author	A-0143	Thursday, 29 August	16:00	Aula	PA
Brown, Louise	Co-author	A-0120	Saturday, 31 August	9:00	1.79	T42
Brown, Louise	Co-author	A-0115	Saturday, 31 August	13:30	Harmonia	T5S4
Brown, Scott D.	Co-author	A-0540	Friday, 30 August	13:30	0.79	T27
Brunel, Lionel	1st author	A-0532	Saturday, 31 August	9:00	1.79	T42
Brunel, Lionel	1st author	A-0534	Saturday, 31 August	9:00	1.79	T42
Brunel, Lionel	Co-author	A-0440	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Brunel, Lionel	Co-author	A-0499	Friday, 30 August	11:00	Aula	PB
Brunetti, Riccardo	1st author	A-0678	Saturday, 31 August	16:00	0.89	T66
Brunetti, Riccardo	Co-author	A-0635	Thursday, 29 August	16:00	Aula	PA
Bryce, Donna	Co-author	A-0536	Friday, 30 August	11:00	Aula	PB
Brysbaert, Marc	1st author	A-0137	Saturday, 31 August	9:00	0.81	T4S3
Brysbaert, Marc	Co-author	A-0668	Friday, 30 August	11:00	Aula	PB
Brysbaert, Marc	Co-author	A-0285	Sunday, 1 September	9:00	0.100b	T73
Brzezicka, A.	1st author	A-0686	Saturday, 31 August	16:00	0.87	T65
Bucchioni, Giulia	Co-author	A-0208	Saturday, 31 August	11:00	Aula	PC
Bugaiska, Aurélia	1st author	A-0186	Friday, 30 August	11:00	Aula	PB
Bull, Rebecca	Co-author	A-0439	Saturday, 31 August	13:30	0.100a	T54
Bundesen, Claus	Co-author	A-0233	Saturday, 31 August	16:00	0.87	T65
Bundesen, Claus	Co-author	A-0427	Sunday, 1 September	9:00	0.87	T74
Bundesen, Claus	Co-author	A-0615	Sunday, 1 September	9:00	0.87	T74
Bunzeck, Nico	1st author	A-0336	Saturday, 31 August	13:30	0.87	T5S2
Burle, Boris	Symposium Chair	-	Saturday, 31 August	16:00	0.83	T6S1
Burle, Boris	Co-author	A-0374	Thursday, 29 August	16:00	Aula	PA
Burle, Boris	Co-author	A-0164	Friday, 30 August	13:30	0.79	T27
Burle, Boris	Co-author	A-0410	Friday, 30 August	16:00	0.100a	T33
Burle, Boris	Co-author	A-0643	Friday, 30 August	16:00	0.100a	T33
Burle, Boris	Co-author	A-0382	Saturday, 31 August	9:00	0.87	T45
Burle, Boris	Co-author	A-0305	Saturday, 31 August	16:00	0.83	T6S1
Burnett, Hollie G.	Co-author	A-0395	Thursday, 29 August	16:00	Aula	PA
Butz, Martin V.	Co-author	A-0679	Friday, 30 August	16:00	0.100a	T33
Bürki, Audrey	1st author	A-0332	Friday, 30 August	16:00	0.87	T32
Byrne, Ruth M. J.	1st author	A-0341	Sunday, 1 September	9:00	0.100a	T72
Byrne, Ruth M. J.	Co-author	A-0160	Saturday, 31 August	11:00	Aula	PC
Byrne, Ruth M. J.	Co-author	A-0308	Sunday, 1 September	9:00	0.100a	T72
Cacciari, Cristina	Co-author	A-0542	Thursday, 29 August	16:00	Aula	PA
Cacciari, Cristina	Co-author	A-0292	Friday, 30 August	13:30	1.79	T21
Caffarra, Sedy	1st author	A-0292	Friday, 30 August	13:30	1.79	T21
Cain, Kate	Co-author	A-0367	Saturday, 31 August	11:00	Aula	PC
Calabria, Marco	1st author	A-0423	Friday, 30 August	16:00	0.89	T31
Calabria, Marco	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31
Calcus, Axelle	1st author	A-0710	Friday, 30 August	11:00	Aula	PB
Calleja, Marina	Co-author	A-0484	Saturday, 31 August	13:30	0.100a	T54
Callens, Maaïke	1st author	A-0285	Sunday, 1 September	9:00	0.100b	T73
Camblats, Anna-Malika	1st author	A-0211	Saturday, 31 August	11:00	Aula	PC
Camos, Valerie	Co-author	A-0151	Friday, 30 August	11:00	Aula	PB
Camos, Valerie	Co-author	A-0205	Friday, 30 August	11:00	Aula	PB
Camos, Valerie	Co-author	A-0215	Friday, 30 August	16:00	0.89	T31
Camos, Valerie	Co-author	A-0488	Saturday, 31 August	9:00	0.89	T43
Camos, Valérie	Co-author	A-0214	Saturday, 31 August	9:00	0.100b	T44
Camos, Valérie	Co-author	A-0217	Saturday, 31 August	13:30	0.79	T53

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Name	Role	AbsNo	Date	Time	Room	Sect
Camp, Gino	1st author	A-0674	Friday, 30 August	16:00	0.79	T3S2
Camus	Co-author	A-0532	Saturday, 31 August	9:00	1.79	T42
Cañal-Bruland, Rouwen	1st author	A-0019	Friday, 30 August	13:30	0.87	T22
Çankaya, Banu	Co-author	A-0588	Friday, 30 August	11:00	Aula	PB
Capotosto, Emanuela	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Cappe, C.	Co-author	A-0417	Thursday, 29 August	16:00	Aula	PA
Cappelletti, Marinella	1st author	A-0394	Saturday, 31 August	9:00	0.79	T4S1
Caprile, Claudia	1st author	A-0244	Friday, 30 August	11:00	Aula	PB
Carassa, Antonella	Co-author	A-0745	Saturday, 31 August	11:00	Aula	PC
Carbè, Katia	1st author	A-0683	Friday, 30 August	11:00	Aula	PB
Carbon, Claus-Christian	Co-author	A-0453	Thursday, 29 August	16:00	Aula	PA
Carbon, Claus-Christian	Co-author	A-0325	Friday, 30 August	11:00	Aula	PB
Carbon, Claus-Christian	Co-author	A-0226	Saturday, 31 August	11:00	Aula	PC
Carmel, Tomer	1st author	A-0657	Friday, 30 August	9:00	0.79	T11
Carr, Thomas H.	Co-author	A-0575	Friday, 30 August	11:00	Aula	PB
Carratalá, Patricia	Co-author	A-0485	Friday, 30 August	11:00	Aula	PB
Carreiras, Manuel	Co-author	A-0173	Thursday, 29 August	16:00	Aula	PA
Carreiras, Manuel	Co-author	A-0746	Thursday, 29 August	16:00	Aula	PA
Carreiras, Manuel	Co-author	A-0754	Thursday, 29 August	16:00	Aula	PA
Carreiras, Manuel	Co-author	A-0671	Friday, 30 August	9:00	0.100a	T15
Carreiras, Manuel	Co-author	A-0154	Saturday, 31 August	9:00	0.81	T4S3
Carreiras, Manuel	Co-author	A-0436	Saturday, 31 August	16:00	0.100b	T62
Carvalho, C.	Co-author	A-0148	Friday, 30 August	11:00	Aula	PB
Casalis, Severine	1st author	A-0640	Sunday, 1 September	9:00	1.79	T71
Casalis, Severine	Co-author	A-0228	Thursday, 29 August	16:00	Aula	PA
Casini, Laurence	1st author	A-0384	Thursday, 29 August	16:00	Aula	PA
Casini, Laurence	Co-author	A-0164	Friday, 30 August	13:30	0.79	T27
Casini, Laurence	Co-author	A-0382	Saturday, 31 August	9:00	0.87	T45
Castiello, Umberto	Co-author	A-0208	Saturday, 31 August	11:00	Aula	PC
Castles, Anne	Co-author	A-0071	Saturday, 31 August	11:00	Aula	PC
Cattaneo, Gabriele	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Cattaneo, Zaira	1st author	A-0660	Friday, 30 August	11:00	Aula	PB
Cavallini, Elena	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Ceccherini, Lisa	1st author	A-0063	Saturday, 31 August	11:00	Aula	PC
Cecchetto, Carlo	Co-author	A-0660	Friday, 30 August	11:00	Aula	PB
Celestin-Westreich, Smadar	Co-author	A-0057	Friday, 30 August	11:00	Aula	PB
Cerles, Mélanie	1st author	A-0213	Friday, 30 August	11:00	Aula	PB
Cestari, Vincenzo	Co-author	A-0169	Saturday, 31 August	11:00	Aula	PC
Cetinkaya, Hakan	1st author	A-0655	Thursday, 29 August	16:00	Aula	PA
Cetinkaya, Hakan	1st author	A-0613	Saturday, 31 August	16:00	1.79	T63
Cetinkaya, Hakan	Co-author	A-0570	Friday, 30 August	16:00	0.99	T35
Ceuleers, Evy	Co-author	A-0006	Thursday, 29 August	16:00	Aula	PA
Ceylan, Suzan	Co-author	A-0546	Friday, 30 August	11:00	Aula	PB
Chainay, Hanna	Co-author	A-0632	Thursday, 29 August	16:00	Aula	PA

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Chajut, Eran	Co-author	A-0571	Friday, 30 August	11:00	Aula	PB
Chambers, C. D.	Co-author	A-0243	Friday, 30 August	9:00	0.100b	T13
Chambers, Christopher D.	Co-author	A-0313	Thursday, 29 August	16:00	Aula	PA
Chamseddine, Amer	Co-author	A-0510	Friday, 30 August	11:00	Aula	PB
Chang, Kuo-en	Co-author	A-0670	Thursday, 29 August	16:00	Aula	PA
Chang, Luke J.	1st author	A-0079	Sunday, 1 September	9:00	0.83	T7S2
Chanquoy, Lucile	Co-author	A-0411	Friday, 30 August	13:30	0.100a	T26
Charles, Lucie	1st author	A-0357	Friday, 30 August	16:00	0.83	T3S1
Charlesworth, Lara	1st author	A-0175	Friday, 30 August	11:00	Aula	PB
Chaves, Nathalie	Co-author	A-0750	Friday, 30 August	11:00	Aula	PB
Chen, Ching-Yi	Co-author	A-0670	Thursday, 29 August	16:00	Aula	PA
Chen, Hsiang-Chun	1st author	A-0135	Thursday, 29 August	16:00	Aula	PA
Chequer, Susan	1st author	A-0106	Friday, 30 August	11:00	Aula	PB
Chermahini, Soghra Akbari	Co-author	A-0086	Friday, 30 August	13:30	Harmonia	T2S1
Cherubini, Paolo	Co-author	A-0359	Friday, 30 August	9:00	0.100b	T13
Chetail, Fabienne	1st author	A-0481	Saturday, 31 August	11:00	Aula	PC
Chetail, Fabienne	Co-author	A-0275	Thursday, 29 August	16:00	Aula	PA
Chetail, Fabienne	Co-author	A-0480	Sunday, 1 September	9:00	1.79	T71
Chetverikov, A.	1st author	A-0638	Friday, 30 August	11:00	Aula	PB
Chiang, Hsueh-Sheng	1st author	A-0576	Friday, 30 August	11:00	Aula	PB
Chiesi, Francesca	Co-author	A-0081	Saturday, 31 August	11:00	Aula	PC
Chmetz, Florian	1st author	A-0475	Friday, 30 August	11:00	Aula	PB
Chrisley, Ron	Co-author	A-0252	Friday, 30 August	16:00	0.83	T3S1
Christensen, Jeppe Høy	1st author	A-0717	Friday, 30 August	11:00	Aula	PB
Christiner, Markus	1st author	A-0011	Saturday, 31 August	11:00	Aula	PC
Chu, Mingyuan	1st author	A-0680	Saturday, 31 August	11:00	Aula	PC
Chuderski, Adam	Co-author	A-0435	Thursday, 29 August	16:00	Aula	PA
Cincotti, Febo	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Clapp, Amanda	Co-author	A-0618	Friday, 30 August	9:00	1.79	T16
Cleeremans, Axel	1st author	A-0530	Friday, 30 August	9:00	0.81	T1S2
Cleeremans, Axel	Co-author	A-0468	Thursday, 29 August	16:00	Aula	PA
Cleeremans, Axel	Co-author	A-0420	Friday, 30 August	9:00	0.81	T1S2
Cleland, Alexandra A	Co-author	A-0439	Saturday, 31 August	13:30	0.100a	T54
Coello, Yann	1st author	A-0733	Friday, 30 August	11:00	Aula	PB
Cohen, Asher	Co-author	A-0264	Friday, 30 August	13:30	Harmonia	T2S1
Cohen, Asher	Co-author	A-0239	Friday, 30 August	16:00	1.79	T34
Cohen, Jonathan E.	Co-author	A-0512	Friday, 30 August	11:00	Aula	PB
Cohen, Noga	1st author	A-0107	Friday, 30 August	16:00	0.99	T35
Cohen, Noga	Symposium Chair	-	Sunday, 1 September	9:00	0.83	T7S2
Cohen, Noga	Co-author	A-0304	Thursday, 29 August	16:00	Aula	PA
Cohen, Noga	Co-author	A-0372	Saturday, 31 August	11:00	Aula	PC
Cohen, Noga	Co-author	A-0134	Saturday, 31 August	13:30	0.89	T55
Cohen, Zahira Z.	1st author	A-0360	Friday, 30 August	11:00	Aula	PB
Cole, Michael W.	Co-author	A-0573	Saturday, 31 August	13:30	0.89	T55

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Name	Role	AbsNo	Date	Time	Room	Sect
Colin	Co-author	A-0710	Friday, 30 August	11:00	Aula	PB
Collina, Simona	Co-author	A-0353	Thursday, 29 August	16:00	Aula	PA
Colombel, Fabienne	1st author	A-0407	Saturday, 31 August	16:00	0.79	T6S3
Colombetti, Marco	Co-author	A-0745	Saturday, 31 August	11:00	Aula	PC
Coltheart, Max	Co-author	A-0063	Saturday, 31 August	11:00	Aula	PC
Coltheart, Max	Co-author	A-0071	Saturday, 31 August	11:00	Aula	PC
Colzato, Lorenza S.	1st author	A-0092	Friday, 30 August	13:30	Harmonia	T2S1
Colzato, Lorenza S.	Symposium Chair	-	Friday, 30 August	13:30	Harmonia	T2S1
Colzato, Lorenza S.	Co-author	A-0299	Thursday, 29 August	16:00	Aula	PA
Colzato, Lorenza S.	Co-author	A-0086	Friday, 30 August	13:30	Harmonia	T2S1
Colzato, Lorenza S.	Co-author	A-0042	Saturday, 31 August	13:30	0.83	T5S3
Colzato, Lorenza S.	Co-author	A-0314	Saturday, 31 August	13:30	0.83	T5S3
Colzato, Lorenza S.	Co-author	A-0383	Saturday, 31 August	13:30	0.83	T5S3
Comesaña, M.	Co-author	A-0009	Thursday, 29 August	16:00	Aula	PA
Comesaña, Montserrat	1st author	A-0129	Saturday, 31 August	13:30	0.81	T5S1
Committeri, Giorgia	Co-author	A-0429	Saturday, 31 August	11:00	Aula	PC
Conrad, Markus	Co-author	A-0441	Thursday, 29 August	16:00	Aula	PA
Content, Alain	1st author	A-0480	Sunday, 1 September	9:00	1.79	T71
Content, Alain	Co-author	A-0037	Thursday, 29 August	16:00	Aula	PA
Content, Alain	Co-author	A-0275	Thursday, 29 August	16:00	Aula	PA
Content, Alain	Co-author	A-0481	Saturday, 31 August	11:00	Aula	PC
Content, Alain	Co-author	A-0184	Friday, 30 August	9:00	0.100a	T15
Conway, Andrew R.A.	1st author	A-0675	Friday, 30 August	9:00	0.79	T11
Conway, Andrew R.A.	Co-author	A-0672	Friday, 30 August	9:00	0.79	T11
Conzelmann, Annette	Co-author	A-0094	Saturday, 31 August	16:00	0.81	T6S2
Coomans, Daphné	1st author	A-0053	Saturday, 31 August	11:00	Aula	PC
Coomans, Daphné	Co-author	A-0689	Friday, 30 August	16:00	1.79	T34
Coomans, Daphné	Co-author	A-0054	Saturday, 31 August	13:30	0.89	T55
Cop, Uschi	1st author	A-0257	Saturday, 31 August	16:00	0.100b	T62
Coppo, M.	Co-author	A-0597	Friday, 30 August	11:00	Aula	PB
Corbin, L.	Co-author	A-0205	Friday, 30 August	11:00	Aula	PB
Coricelli, Giorgio	Co-author	A-0259	Saturday, 31 August	11:00	Aula	PC
Cornoldi, Cesare	1st author	A-0045	Friday, 30 August	9:00	0.89	T1S3
Cornoldi, Cesare	Co-author	A-0255	Saturday, 31 August	9:00	0.100b	T44
Cornoldi, Cesare	Co-author	A-0594	Sunday, 1 September	9:00	0.89	T75
Correa, Ángel	Co-author	A-0768	Friday, 30 August	9:00	0.83	T1S1
Corson, Yves	Co-author	A-0100	Friday, 30 August	11:00	Aula	PB
Corson, Yves	Co-author	A-0294	Saturday, 31 August	16:00	0.79	T6S3
Corson, Yves	Co-author	A-0407	Saturday, 31 August	16:00	0.79	T6S3
Costa, Albert	1st author	A-0466	Friday, 30 August	9:00	0.100b	T13
Costa, Albert	Co-author	A-0009	Thursday, 29 August	16:00	Aula	PA
Costa, Albert	Co-author	A-0443	Friday, 30 August	13:30	0.87	T22
Costa, Albert	Co-author	A-0349	Friday, 30 August	13:30	0.81	T2S2
Costa, Albert	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31

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Name	Role	AbsNo	Date	Time	Room	Sect
Costa, Albert	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Costa, Albert	Co-author	A-0191	Friday, 30 August	16:00	0.87	T32
Costa, Albert	Co-author	A-0749	Saturday, 31 August	13:30	0.81	T5S1
Cottini, Milvia	Co-author	A-0325	Friday, 30 August	11:00	Aula	PB
Coull, Jennifer	Co-author	A-0374	Thursday, 29 August	16:00	Aula	PA
Cox, Emma	Co-author	A-0712	Friday, 30 August	16:00	0.100b	T36
Crespo-Bojorque, Paola	1st author	A-0234	Friday, 30 August	11:00	Aula	PB
Croisile	Co-author	A-0648	Friday, 30 August	16:00	0.100a	T33
Cuadrado, Sara Rodríguez	1st author	A-0444	Friday, 30 August	11:00	Aula	PB
Cubelli, Roberto	1st author	A-0548	Saturday, 31 August	11:00	Aula	PC
Cucchi, Silvia	Co-author	A-0660	Friday, 30 August	11:00	Aula	PB
Cutanda, Diana	1st author	A-0768	Friday, 30 August	9:00	0.83	T1S1
Czigler, Istvan	Symposium Chair	-	Friday, 30 August	13:30	0.83	T2S3
Czigler, István	1st author	A-0162	Friday, 30 August	13:30	0.83	T2S3
Czigler, István	Co-author	A-0291	Thursday, 29 August	16:00	Aula	PA
Czigler, István	Co-author	A-0301	Thursday, 29 August	16:00	Aula	PA
Czigler, István	Co-author	A-0567	Saturday, 31 August	11:00	Aula	PC
Czigler, István	Co-author	A-0642	Saturday, 31 August	11:00	Aula	PC
Cseh, G. M.	1st author	A-0428	Friday, 30 August	11:00	Aula	PB
Csépe, Valéria	Co-author	A-0536	Friday, 30 August	11:00	Aula	PB
Csépe, Valéria	Co-author	A-0593	Friday, 30 August	11:00	Aula	PB
Csépe, Valéria	Co-author	A-0714	Friday, 30 August	11:00	Aula	PB
Csépe, Valéria	Co-author	A-0550	Saturday, 31 August	11:00	Aula	PC
Csibra, Gergely	Co-author	A-0399	Thursday, 29 August	16:00	Aula	PA
Csibra, Gergely	Co-author	A-0329	Friday, 30 August	9:00	0.99	T14
Csibra, Gergely	Co-author	A-0176	Sunday, 1 September	9:00	0.100b	T73
Csibra, Gergely	Co-author	A-0554	Sunday, 1 September	9:00	0.100b	T73
D'Argembeau, Arnaud	Co-author	A-0402	Friday, 30 August	11:00	Aula	PB
da Fonseca, David	Co-author	A-0012	Saturday, 31 August	11:00	Aula	PC
da Silveira, Amanda Post	1st author	A-0307	Saturday, 31 August	11:00	Aula	PC
Dael, Nele	1st author	A-0128	Friday, 30 August	16:00	0.99	T35
Dagry, I.	1st author	A-0205	Friday, 30 August	11:00	Aula	PB
Daini, Roberta	Co-author	A-0333	Friday, 30 August	13:30	0.100b	T25
Dalton, Polly	Co-author	A-0322	Friday, 30 August	16:00	0.100b	T36
Damen, TGE	1st author	A-0041	Saturday, 31 August	9:00	0.83	T4S2
Dampur�, Julien	1st author	A-0125	Saturday, 31 August	9:00	0.100a	T41
Dana, Ganor-Stern	Co-author	A-0036	Friday, 30 August	13:30	0.100a	T26
Dana, Samson	Co-author	A-0366	Thursday, 29 August	16:00	Aula	PA
Danek, Amory H.	Co-author	A-0724	Thursday, 29 August	16:00	Aula	PA
Darling, Steve	Co-author	A-0454	Friday, 30 August	9:00	0.87	T12
Daum, Moritz M.	Co-author	A-0611	Friday, 30 August	13:30	0.99	T24
Davis, Colin J.	1st author	A-0769	Saturday, 31 August	9:00	0.81	T4S3
d'Avossa, G.	Co-author	A-0038	Thursday, 29 August	16:00	Aula	PA
d'Avossa, G.	Co-author	A-0141	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
de Baene, Wouter	Co-author	A-0376	Saturday, 31 August	11:00	Aula	PC
De Beni, Rossana	1st author	A-0268	Saturday, 31 August	11:00	Aula	PC
De Beni, Rossana	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
de Bruijn, Ellen	Co-author	A-0042	Saturday, 31 August	13:30	0.83	T5S3
De Coster, Lize	1st author	A-0455	Friday, 30 August	11:00	Aula	PB
de Diego Balaguer, Ruth	Co-author	A-0381	Saturday, 31 August	11:00	Aula	PC
de Fockert, Jan	Co-author	A-0712	Friday, 30 August	16:00	0.100b	T36
de Gelder, B.	Co-author	A-0148	Friday, 30 August	11:00	Aula	PB
de Hevia, Lola	1st author	A-0218	Saturday, 31 August	9:00	0.79	T4S1
De Houwer, Jan	Co-author	A-0489	Saturday, 31 August	11:00	Aula	PC
De Houwer, Jan	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
De Houwer, Jan	Co-author	A-0089	Sunday, 1 September	9:00	0.81	T7S1
de la Fuente, Vania	Co-author	A-0349	Friday, 30 August	13:30	0.81	T2S2
De Letter, M.	Co-author	A-0334	Thursday, 29 August	16:00	Aula	PA
De Luca, Maria	Co-author	A-0333	Friday, 30 August	13:30	0.100b	T25
de Oliveira, Armando Mónica	Co-author	A-0113	Friday, 30 August	13:30	0.87	T22
de Oliveira, Armando Mónica	Co-author	A-0726	Saturday, 31 August	13:30	0.100b	T52
De Oliveira, Pierre	Co-author	A-0339	Saturday, 31 August	11:00	Aula	PC
de Ribaupierre, Anik	Co-author	A-0616	Saturday, 31 August	11:00	Aula	PC
De Simone, Flavia	1st author	A-0353	Thursday, 29 August	16:00	Aula	PA
De Smedt, Bert	Co-author	A-0091	Thursday, 29 August	16:00	Aula	PA
De Smedt, Bert	Co-author	A-0446	Friday, 30 August	11:00	Aula	PB
de Wit, Sanne	1st author	A-0763	Friday, 30 August	13:30	Harmonia	T2S1
Deak, Anita	1st author	A-0764	Thursday, 29 August	16:00	Aula	PA
Deak, Anita	Co-author	A-0739	Friday, 30 August	9:00	0.99	T14
Deák, Anita	Co-author	A-0773	Saturday, 31 August	11:00	Aula	PC
Deary, Ian	Co-author	A-0143	Thursday, 29 August	16:00	Aula	PA
Debarnot, Ursula	1st author	A-0501	Saturday, 31 August	11:00	Aula	PC
Declerck, Mathieu	1st author	A-0223	Saturday, 31 August	11:00	Aula	PC
Decoster, Lize	Co-author	A-0193	Saturday, 31 August	9:00	0.83	T4S2
Defever, Emmy	1st author	A-0446	Friday, 30 August	11:00	Aula	PB
Defever, Emmy	Co-author	A-0020	Friday, 30 August	11:00	Aula	PB
Defever, Emmy	Co-author	A-0126	Saturday, 31 August	9:00	0.79	T4S1
Degani, Tamar	1st author	A-0565	Saturday, 31 August	16:00	0.100b	T62
Degani, Tamar	Co-author	A-0544	Saturday, 31 August	16:00	0.100b	T62
Degrande, T.	Co-author	A-0685	Friday, 30 August	11:00	Aula	PB
Dehaene, Stanislas	Co-author	A-0357	Friday, 30 August	16:00	0.83	T3S1
Dehon, Hedwige	1st author	A-0263	Saturday, 31 August	16:00	0.79	T6S3
Dehon, Hedwige	Co-author	A-0014	Saturday, 31 August	11:00	Aula	PC
del Chiaro, I Suarez	1st author	A-0382	Saturday, 31 August	9:00	0.87	T45
Del Gatto, C.	1st author	A-0635	Thursday, 29 August	16:00	Aula	PA
Delfi, Tzvetelina Shentova	Co-author	A-0199	Saturday, 31 August	11:00	Aula	PC
Delhommeau, M.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Dell'Acqua, Roberto	Co-author	A-0702	Saturday, 31 August	11:00	Aula	PC

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Name	Role	AbsNo	Date	Time	Room	Sect
Delogu, Franco	Co-author	A-0678	Saturday, 31 August	16:00	0.89	T66
DeLong, Katherine A.	Co-author	A-0017	Saturday, 31 August	16:00	0.100a	T61
Delvenne, Jean-Francois	1st author	A-0767	Saturday, 31 August	13:30	Harmonia	T5S4
Demanet, Jelle	1st author	A-0415	Saturday, 31 August	9:00	0.83	T4S2
Demanet, Jelle	Symposium Chair	-	Saturday, 31 August	9:00	0.83	T4S2
Demanet, Jelle	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Demanet, Jelle	Co-author	A-0193	Saturday, 31 August	9:00	0.83	T4S2
Demestre, Josep	Co-author	A-0432	Friday, 30 August	11:00	Aula	PB
Demestre, Josep	Co-author	A-0303	Saturday, 31 August	11:00	Aula	PC
Demestre, Josep	Co-author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
Demestre, Josep	Co-author	A-0737	Saturday, 31 August	13:30	0.81	T5S1
Demeter, Gyula	1st author	A-0493	Saturday, 31 August	9:00	0.89	T43
Demeter, Gyula	Co-author	A-0633	Saturday, 31 August	9:00	0.89	T43
Demiralp, Tamer	Co-author	A-0691	Thursday, 29 August	16:00	Aula	PA
Demoulin, Catherine	1st author	A-0072	Saturday, 31 August	11:00	Aula	PC
Denham, Susan L.	1st author	A-0315	Friday, 30 August	13:30	0.83	T2S3
Derakhshan, Nazanin	1st author	A-0747	Sunday, 1 September	9:00	0.83	T7S2
Derakshan, Nazanin	Co-author	A-0448	Saturday, 31 August	11:00	Aula	PC
Deroost, Natacha	Co-author	A-0053	Saturday, 31 August	11:00	Aula	PC
Deroost, Natacha	Co-author	A-0387	Friday, 30 August	13:30	0.100b	T25
Deroost, Natacha	Co-author	A-0689	Friday, 30 August	16:00	1.79	T34
Deroost, Natacha	Co-author	A-0054	Saturday, 31 August	13:30	0.89	T55
Deruelle, Christine	Co-author	A-0012	Saturday, 31 August	11:00	Aula	PC
Desantis, Andrea	Co-author	A-0297	Saturday, 31 August	13:30	0.100b	T52
Deschrijver, Eliane	Co-author	A-0306	Saturday, 31 August	11:00	Aula	PC
Desender, Kobe	1st author	A-0262	Friday, 30 August	16:00	0.83	T3S1
Desender, Kobe	Symposium Chair	-	Friday, 30 August	16:00	0.83	T3S1
Desender, Kobe	Co-author	A-0167	Saturday, 31 August	16:00	0.81	T6S2
Desmet, Charlotte	1st author	A-0306	Saturday, 31 August	11:00	Aula	PC
Destrebecqz, Arnaud	Co-author	A-0365	Friday, 30 August	11:00	Aula	PB
Destrebecqz, Arnaud	Co-author	A-0420	Friday, 30 August	9:00	0.81	T1S2
Destrebecqz, Bertels	1st author	A-0719	Thursday, 29 August	16:00	Aula	PA
Devine, Amy	Co-author	A-0507	Saturday, 31 August	11:00	Aula	PC
Devine, Amy	Co-author	A-0727	Friday, 30 August	9:00	0.100a	T15
Dewey, John A.	1st author	A-0575	Friday, 30 August	11:00	Aula	PB
DeWit, Bianca	Co-author	A-0202	Friday, 30 August	16:00	0.83	T3S1
Dganit, Avioz	Co-author	A-0273	Thursday, 29 August	16:00	Aula	PA
Dhooge, Elisah	Co-author	A-0517	Saturday, 31 August	13:30	1.79	T51
Diavastou, Anthi	1st author	A-0474	Thursday, 29 August	16:00	Aula	PA
Didi-Barnea, Chen	1st author	A-0408	Friday, 30 August	9:00	0.79	T11
Dienes, Zoltan	Co-author	A-0252	Friday, 30 August	16:00	0.83	T3S1
Dijksterhuis, A	Co-author	A-0041	Saturday, 31 August	9:00	0.83	T4S2
Dijksterhuis, Ap	Co-author	A-0451	Friday, 30 August	11:00	Aula	PB
Dioux, Vivien	1st author	A-0339	Saturday, 31 August	11:00	Aula	PC

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Name	Role	AbsNo	Date	Time	Room	Sect
Dittmer, Marie	Co-author	A-0047	Saturday, 31 August	16:00	0.81	T6S2
Dmitrieva, E. S.	1st author	A-0405	Saturday, 31 August	16:00	0.99	T64
Doherty, Jason M	1st author	A-0445	Friday, 30 August	11:00	Aula	PB
Doi, Shun'ichi	Co-author	A-0508	Saturday, 31 August	11:00	Aula	PC
Doignon-Camus, N.	Co-author	A-0150	Thursday, 29 August	16:00	Aula	PA
Doignon-Camus, Nadège	Co-author	A-0124	Thursday, 29 August	16:00	Aula	PA
Doignon-Camus, Nadège	Co-author	A-0149	Sunday, 1 September	9:00	0.100b	T73
Dolk, Thomas	1st author	A-0055	Saturday, 31 August	13:30	0.83	T5S3
Dolk, Thomas	Co-author	A-0314	Saturday, 31 August	13:30	0.83	T5S3
Dolk, Thomas	Co-author	A-0383	Saturday, 31 August	13:30	0.83	T5S3
Domaradzka, Ewa	1st author	A-0483	Saturday, 31 August	11:00	Aula	PC
Dombi, Edina	1st author	A-0518	Thursday, 29 August	16:00	Aula	PA
Domínguez, Alberto	Co-author	A-0090	Saturday, 31 August	13:30	0.81	T5S1
Dormal, Valerie	1st author	A-0363	Thursday, 29 August	16:00	Aula	PA
Dor-Ziderman, Yair	Co-author	A-0022	Saturday, 31 August	13:30	0.100b	T52
Dovhaliuk, T. A.	1st author	A-0729	Thursday, 29 August	16:00	Aula	PA
Drabik, Marta	Co-author	A-0594	Sunday, 1 September	9:00	0.89	T75
Drabs, Virginie	1st author	A-0275	Thursday, 29 August	16:00	Aula	PA
Dreisbach, Gesine	1st author	A-0146	Friday, 30 August	11:00	Aula	PB
Dreisbach, Gesine	Co-author	A-0158	Thursday, 29 August	16:00	Aula	PA
Dreisbach, Gesine	Co-author	A-0281	Friday, 30 August	11:00	Aula	PB
Dreisbach, Gesine	Co-author	A-0103	Sunday, 1 September	9:00	0.79	T7S3
Drieghe, Denis	Co-author	A-0257	Saturday, 31 August	16:00	0.100b	T62
Drusi, Silvia	Co-author	A-0045	Friday, 30 August	9:00	0.89	T1S3
Duchaine, B.	Co-author	A-0736	Saturday, 31 August	11:00	Aula	PC
Ducrot, Stéphanie	Co-author	A-0177	Saturday, 31 August	11:00	Aula	PC
Dufau, Stéphane	Co-author	A-0296	Saturday, 31 August	11:00	Aula	PC
Duhamel, Sophie	Co-author	A-0186	Friday, 30 August	11:00	Aula	PB
Dumercy, Laurent	Co-author	A-0411	Friday, 30 August	13:30	0.100a	T26
Duñabeitia, Jon Andoni	1st author	A-0154	Saturday, 31 August	9:00	0.81	T4S3
Duñabeitia, Jon Andoni	Co-author	A-0746	Thursday, 29 August	16:00	Aula	PA
Duncan, L.	Co-author	A-0640	Sunday, 1 September	9:00	1.79	T71
Dunlosky, John	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Duque, G.	Co-author	A-0174	Saturday, 31 August	16:00	0.89	T66
Duraku, Andrea	Co-author	A-0475	Friday, 30 August	11:00	Aula	PB
Dural, Seda	1st author	A-0587	Saturday, 31 August	16:00	1.79	T63
Dural, Seda	Co-author	A-0655	Thursday, 29 August	16:00	Aula	PA
Dural, Seda	Co-author	A-0537	Friday, 30 August	11:00	Aula	PB
Dural, Seda	Co-author	A-0592	Saturday, 31 August	16:00	1.79	T63
Dural, Seda	Co-author	A-0613	Saturday, 31 August	16:00	1.79	T63
Dural, Seda	Co-author	A-0604	Saturday, 31 August	16:00	0.99	T64
Durlik, Joanna	1st author	A-0701	Thursday, 29 August	16:00	Aula	PA
Dussias, Paola E.	Co-author	A-0052	Saturday, 31 August	13:30	0.81	T5S1
Duthoo, Wout	1st author	A-0464	Saturday, 31 August	13:30	0.89	T55

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Name	Role	AbsNo	Date	Time	Room	Sect
Duthoo, Wout	Co-author	A-0077	Thursday, 29 August	16:00	Aula	PA
Dutilh, Gilles	Co-author	A-0080	Saturday, 31 August	16:00	0.83	T6S1
Duyck, Wouter	Co-author	A-0006	Thursday, 29 August	16:00	Aula	PA
Duyck, Wouter	Co-author	A-0257	Saturday, 31 August	16:00	0.100b	T62
Dyrholm, Mads	Co-author	A-0717	Friday, 30 August	11:00	Aula	PB
East, Antonia	Co-author	A-0618	Friday, 30 August	9:00	1.79	T16
Écalle, Jean	Co-author	A-0008	Friday, 30 August	11:00	Aula	PB
Écalle, Jean	Co-author	A-0694	Saturday, 31 August	11:00	Aula	PC
Ecker, Ullrich	1st author	A-0152	Friday, 30 August	9:00	0.89	T1S3
Egidi, Giovanna	Co-author	A-0650	Saturday, 31 August	13:30	1.79	T51
Egner, Tobias	Co-author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Egyed, Katalin	Co-author	A-0760	Friday, 30 August	11:00	Aula	PB
Elchlepp, Heike	1st author	A-0618	Friday, 30 August	9:00	1.79	T16
Elchlepp, Heike	Co-author	A-0662	Friday, 30 August	13:30	0.79	T27
Elen, Jan	Co-author	A-0091	Thursday, 29 August	16:00	Aula	PA
Elosúa, M. R.	Co-author	A-0174	Saturday, 31 August	16:00	0.89	T66
Emeterio, San	Co-author	A-0534	Saturday, 31 August	9:00	1.79	T42
Emilie, Caspar	1st author	A-0165	Saturday, 31 August	11:00	Aula	PC
Engbert, Ralf	Co-author	A-0556	Friday, 30 August	9:00	0.87	T12
Enneson, Peter	Co-author	A-0607	Friday, 30 August	11:00	Aula	PB
Entel, Olga	1st author	A-0025	Friday, 30 August	11:00	Aula	PB
Ernestus, Mirjam	1st author	A-0379	Sunday, 1 September	9:00	1.79	T71
Ernestus, Mirjam	Co-author	A-0398	Friday, 30 August	11:00	Aula	PB
Ernestus, Mirjam	Co-author	A-0364	Saturday, 31 August	11:00	Aula	PC
Ernestus, Mirjam	Co-author	A-0337	Friday, 30 August	13:30	1.79	T21
Ernestus, Mirjam	Co-author	A-0345	Sunday, 1 September	9:00	1.79	T71
Espino, Orlando	1st author	A-0308	Sunday, 1 September	9:00	0.100a	T72
Esteves, Francisco	Co-author	A-0012	Saturday, 31 August	11:00	Aula	PC
Estévez, Adelina	1st author	A-0385	Saturday, 31 August	11:00	Aula	PC
Estudillo, Alejandro	Co-author	A-0484	Saturday, 31 August	13:30	0.100a	T54
Etienne, Olivier	Co-author	A-0603	Friday, 30 August	13:30	0.87	T22
Etienne, Yann	1st author	A-0296	Saturday, 31 August	11:00	Aula	PC
Evans, Sally	Co-author	A-0454	Friday, 30 August	9:00	0.87	T12
Fagot, Delphine	Co-author	A-0616	Saturday, 31 August	11:00	Aula	PC
Fagot, Joel	Co-author	A-0197	Thursday, 29 August	16:00	Aula	PA
Fahd, Samar	Co-author	A-0658	Friday, 30 August	11:00	Aula	PB
Falcon, Thomas	Co-author	A-0454	Friday, 30 August	9:00	0.87	T12
Falkiewicz, M.	1st author	A-0653	Friday, 30 August	9:00	0.99	T14
Faran, Yifat	Co-author	A-0195	Thursday, 29 August	16:00	Aula	PA
Farkas, Dávid	Co-author	A-0117	Thursday, 29 August	16:00	Aula	PA
Fatfouta, Ramzi	1st author	A-0130	Thursday, 29 August	16:00	Aula	PA
Fauszt, Franciska	Co-author	A-0757	Friday, 30 August	9:00	0.99	T14
Favez, Nicolas	Co-author	A-0060	Saturday, 31 August	11:00	Aula	PC
Fay, Séverine	Co-author	A-0267	Saturday, 31 August	11:00	Aula	PC

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Name	Role	AbsNo	Date	Time	Room	Sect
Federmeier, Kara D.	Co-author	A-0515	Saturday, 31 August	11:00	Aula	PC
Fehér, Balázs	1st author	A-0564	Thursday, 29 August	16:00	Aula	PA
Fehse, Kai	Co-author	A-0705	Thursday, 29 August	16:00	Aula	PA
Feldman, Laurie Beth	1st author	A-0462	Friday, 30 August	13:30	1.79	T21
Fellows, Lesley K.	Co-author	A-0109	Friday, 30 August	16:00	0.100a	T33
Fels, Janina	Co-author	A-0709	Friday, 30 August	9:00	1.79	T16
Fernández, S. Ruiz	1st author	A-0755	Thursday, 29 August	16:00	Aula	PA
Fernández-Prieto, Irune	Co-author	A-0562	Friday, 30 August	11:00	Aula	PB
Ferrari, Marcella	Co-author	A-0323	Friday, 30 August	9:00	0.89	T1S3
Ferré, Pilar	1st author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
Ferré, Pilar	Co-author	A-0318	Friday, 30 August	11:00	Aula	PB
Ferré, Pilar	Co-author	A-0432	Friday, 30 August	11:00	Aula	PB
Ferré, Pilar	Co-author	A-0129	Saturday, 31 August	13:30	0.81	T5S1
Ferreira, Estrella	Co-author	A-0244	Friday, 30 August	11:00	Aula	PB
Fias, Wim	Co-author	A-0302	Saturday, 31 August	11:00	Aula	PC
Fias, Wim	Co-author	A-0201	Friday, 30 August	9:00	0.100b	T13
Fiez, Julie A.	Co-author	A-0185	Friday, 30 August	9:00	0.100a	T15
Filippova, M.	Co-author	A-0638	Friday, 30 August	11:00	Aula	PB
Fini, Chiara	1st author	A-0429	Saturday, 31 August	11:00	Aula	PC
Finke, Kathrin	Co-author	A-0555	Saturday, 31 August	9:00	0.100b	T44
Finke, Kathrin	Co-author	A-0471	Sunday, 1 September	9:00	0.87	T74
Fischer, Martin	Co-author	A-0553	Saturday, 31 August	13:30	0.100a	T54
Fischer, Martin H.	Co-author	A-0413	Thursday, 29 August	16:00	Aula	PA
Fischer, Rico	1st author	A-0158	Thursday, 29 August	16:00	Aula	PA
Fischer, Rico	Co-author	A-0256	Thursday, 29 August	16:00	Aula	PA
Fischer, Rico	Co-author	A-0146	Friday, 30 August	11:00	Aula	PB
Fischer, Rico	Co-author	A-0511	Friday, 30 August	13:30	Harmonia	T2S1
Folyi, Tímea	1st author	A-0690	Friday, 30 August	11:00	Aula	PB
Forgács, Bálint	1st author	A-0017	Saturday, 31 August	16:00	0.100a	T61
Forrest, Charlotte	1st author	A-0581	Friday, 30 August	9:00	1.79	T16
Forster, Michael	1st author	A-0295	Friday, 30 August	13:30	0.99	T24
Forster, Michael	Co-author	A-0316	Saturday, 31 August	16:00	0.81	T6S2
Forstmann, Birte U	Co-author	A-0207	Saturday, 31 August	16:00	0.83	T6S1
Forstmann, Birte U.	Co-author	A-0371	Friday, 30 August	13:30	Harmonia	T2S1
Foster, M. I.	1st author	A-0194	Sunday, 1 September	9:00	0.100a	T72
Fotiadis, Fotis A.	1st author	A-0248	Saturday, 31 August	16:00	0.89	T66
Foucart, A.	1st author	A-0461	Friday, 30 August	16:00	0.89	T31
Foucart, Alice	Co-author	A-0466	Friday, 30 August	9:00	0.100b	T13
Foucart, Alice	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Förster M., Carla E.	Co-author	A-0728	Saturday, 31 August	16:00	0.89	T66
Frade, Sofia	1st author	A-0219	Friday, 30 August	11:00	Aula	PB
Frade, Sofia	Co-author	A-0129	Saturday, 31 August	13:30	0.81	T5S1
Fraenkel, Nick	Co-author	A-0322	Friday, 30 August	16:00	0.100b	T36
Fraga, Isabel	Co-author	A-0129	Saturday, 31 August	13:30	0.81	T5S1

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Francesca, Postiglione	Co-author	A-0522	Saturday, 31 August	11:00	Aula	PC
Francesco, Simona Arianna Di	1st author	A-0116	Saturday, 31 August	11:00	Aula	PC
Francesco, Simona Arianna Di	Co-author	A-0111	Friday, 30 August	13:30	0.89	T23
Franco, A.	1st author	A-0148	Friday, 30 August	11:00	Aula	PB
Freiherr, Jessica	Co-author	A-0261	Friday, 30 August	9:00	1.79	T16
Friedman, Alon	Co-author	A-0512	Friday, 30 August	11:00	Aula	PB
Friedmann, Naama	Co-author	A-0571	Friday, 30 August	11:00	Aula	PB
Friedmann, Naama	Co-author	A-0718	Friday, 30 August	11:00	Aula	PB
Frings, Christian	Co-author	A-0274	Saturday, 31 August	16:00	0.87	T65
Frith, Chris	Co-author	A-0751	Thursday, 29 August	16:00	Aula	PA
Fritz, Julia	Co-author	A-0146	Friday, 30 August	11:00	Aula	PB
Frost, Ram	Co-author	A-0018	Thursday, 29 August	16:00	Aula	PA
Fruchtman, Tom	1st author	A-0372	Saturday, 31 August	11:00	Aula	PC
Fryt, Joanna	1st author	A-0473	Friday, 30 August	11:00	Aula	PB
Fukunaga, Tsubasa	Co-author	A-0508	Saturday, 31 August	11:00	Aula	PC
Fukuyama, Hidenao	Co-author	A-0460	Thursday, 29 August	16:00	Aula	PA
Furumi, Fumikazu	1st author	A-0131	Friday, 30 August	11:00	Aula	PB
Gabriel, Florence	1st author	A-0184	Friday, 30 August	9:00	0.100a	T15
Gabriel, Florence	Co-author	A-0507	Saturday, 31 August	11:00	Aula	PC
Gabriel, Florence	Co-author	A-0727	Friday, 30 August	9:00	0.100a	T15
Gade, Miriam	1st author	A-0390	Friday, 30 August	11:00	Aula	PB
Gaillard, Vinciane	1st author	A-0420	Friday, 30 August	9:00	0.81	T1S2
Gaillard, Vinciane	Co-author	A-0365	Friday, 30 August	11:00	Aula	PB
Galati, Alexia	1st author	A-0145	Friday, 30 August	13:30	0.81	T2S2
Galati, Alexia	Co-author	A-0474	Thursday, 29 August	16:00	Aula	PA
Gall, Le	Co-author	A-0648	Friday, 30 August	16:00	0.100a	T33
Gallarda, T.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Gallarda, Thierry	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Gallés, Núria Sebastián	1st author	A-0749	Saturday, 31 August	13:30	0.81	T5S1
Gamboz, Nadia	1st author	A-0526	Sunday, 1 September	9:00	0.89	T75
Ganczarek, Joanna	1st author	A-0574	Friday, 30 August	11:00	Aula	PB
Ganczarek, Joanna	Co-author	A-0254	Thursday, 29 August	16:00	Aula	PA
Ganor-Stern, Dana	1st author	A-0016	Saturday, 31 August	13:30	0.100a	T54
Ganz, Thomas	Co-author	A-0094	Saturday, 31 August	16:00	0.81	T6S2
Garami, Linda	1st author	A-0714	Friday, 30 August	11:00	Aula	PB
García, Hernando Santamaría	1st author	A-0078	Saturday, 31 August	13:30	1.79	T51
García, Hernando Santamaría	Co-author	A-0127	Saturday, 31 August	11:00	Aula	PC
García-Albea, Jose	Symposium Chair	-	Saturday, 31 August	13:30	0.81	T5S1
García-Albea, José E.	Co-author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
García-Albea, José E.	Co-author	A-0737	Saturday, 31 August	13:30	0.81	T5S1
García-Chico, Teófilo G.	Co-author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
García-Madruga, J. A.	1st author	A-0174	Saturday, 31 August	16:00	0.89	T66
García-Morera, Joel	Co-author	A-0562	Friday, 30 August	11:00	Aula	PB
García-Orza, Javier	1st author	A-0485	Friday, 30 August	11:00	Aula	PB

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Name	Role	AbsNo	Date	Time	Room	Sect
García-Orza, Javier	1st author	A-0484	Saturday, 31 August	13:30	0.100a	T54
Garriga, Lluís Fuentemilla	Co-author	A-0381	Saturday, 31 August	11:00	Aula	PC
Gartus, Andreas	1st author	A-0595	Friday, 30 August	11:00	Aula	PB
Gasho, Chris	Co-author	A-0512	Friday, 30 August	11:00	Aula	PB
Gaskell, Gareth	Co-author	A-0061	Thursday, 29 August	16:00	Aula	PA
Gaskell, Gareth	Co-author	A-0328	Saturday, 31 August	9:00	0.100a	T41
Gauvin, Hanna S.	1st author	A-0376	Saturday, 31 August	11:00	Aula	PC
Gavens, N.	Co-author	A-0150	Thursday, 29 August	16:00	Aula	PA
Gavilán, José M.	Co-author	A-0318	Friday, 30 August	11:00	Aula	PB
Gawronski, Bertram	Co-author	A-0393	Saturday, 31 August	16:00	1.79	T63
Gawryszewski, L. G.	1st author	A-0597	Friday, 30 August	11:00	Aula	PB
Gebuis, Titia	Co-author	A-0069	Thursday, 29 August	16:00	Aula	PA
Gebuis, Titia	Co-author	A-0126	Saturday, 31 August	9:00	0.79	T4S1
Gelman, V. Ya.	Co-author	A-0405	Saturday, 31 August	16:00	0.99	T64
Georges, Carrie	1st author	A-0421	Friday, 30 August	11:00	Aula	PB
Gergely, György	Co-author	A-0327	Saturday, 31 August	11:00	Aula	PC
Gerger, Gernot	Co-author	A-0295	Friday, 30 August	13:30	0.99	T24
Gershkovich, Valeria	Co-author	A-0716	Saturday, 31 August	11:00	Aula	PC
Gevers, Wim	Co-author	A-0683	Friday, 30 August	11:00	Aula	PB
Ghio, Alain	Co-author	A-0177	Saturday, 31 August	11:00	Aula	PC
Gianaros, Peter J.	Co-author	A-0079	Sunday, 1 September	9:00	0.83	T7S2
Gianelli, Claudia	1st author	A-0553	Saturday, 31 August	13:30	0.100a	T54
Giesbrecht, Barry	Co-author	A-0427	Sunday, 1 September	9:00	0.87	T74
Gil, Cristina	Co-author	A-0671	Friday, 30 August	9:00	0.100a	T15
Gilet, Anne-Laure	Symposium Chair	-	Saturday, 31 August	16:00	0.79	T6S3
Gillet, Sophie	Co-author	A-0700	Friday, 30 August	16:00	0.89	T31
Ginsburg, Veronique	Co-author	A-0683	Friday, 30 August	11:00	Aula	PB
Giofrè, David	1st author	A-0255	Saturday, 31 August	9:00	0.100b	T44
Giofrè, David	Co-author	A-0045	Friday, 30 August	9:00	0.89	T1S3
Girelli, Luisa	Co-author	A-0663	Friday, 30 August	11:00	Aula	PB
Gironell, Alexandre	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Giulia, Bracco	Co-author	A-0522	Saturday, 31 August	11:00	Aula	PC
Gleeson, Harriet	Co-author	A-0120	Saturday, 31 August	9:00	1.79	T42
Glicksohn, Arit	1st author	A-0239	Friday, 30 August	16:00	1.79	T34
Glicksohn, Joseph	1st author	A-0022	Saturday, 31 August	13:30	0.100b	T52
Gluga, Teodora	Co-author	A-0699	Saturday, 31 August	11:00	Aula	PC
Gliksman, Yarden	1st author	A-0487	Saturday, 31 August	11:00	Aula	PC
Gobin, Pamela	Co-author	A-0210	Thursday, 29 August	16:00	Aula	PA
Golan, Ronen	1st author	A-0029	Saturday, 31 August	13:30	0.100b	T52
Goldman, Ronit	1st author	A-0049	Thursday, 29 August	16:00	Aula	PA
Goldstein, Abraham	Co-author	A-0022	Saturday, 31 August	13:30	0.100b	T52
Golfarb, Liat	1st author	A-0098	Friday, 30 August	13:30	0.100b	T25
Gollan, Tamar	Co-author	A-0361	Friday, 30 August	16:00	0.89	T31
Gomez, Pablo	1st author	A-0494	Saturday, 31 August	9:00	0.81	T4S3

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Name	Role	AbsNo	Date	Time	Room	Sect
Gomez, Rapson	Co-author	A-0106	Friday, 30 August	11:00	Aula	PB
Gómez-Ariza, Carlos J.	Co-author	A-0631	Friday, 30 August	11:00	Aula	PB
Gómez-Ariza, Carlos J.	Co-author	A-0388	Saturday, 31 August	11:00	Aula	PC
Gómez-Veiga, I.	Co-author	A-0174	Saturday, 31 August	16:00	0.89	T66
Gonçalves, A. M.	Co-author	A-0009	Thursday, 29 August	16:00	Aula	PA
Goossens, Nicole A.M.C.	Co-author	A-0674	Friday, 30 August	16:00	0.79	T3S2
Goshen-Gottstein, Yonatan	Co-author	A-0408	Friday, 30 August	9:00	0.79	T11
Gottschalk, Caroline	1st author	A-0256	Thursday, 29 August	16:00	Aula	PA
Gottschalk, Caroline	Co-author	A-0158	Thursday, 29 August	16:00	Aula	PA
Goujon, Annabelle	1st author	A-0197	Thursday, 29 August	16:00	Aula	PA
Göbel, Silke	Co-author	A-0553	Saturday, 31 August	13:30	0.100a	T54
Grabowska, A.	Co-author	A-0653	Friday, 30 August	9:00	0.99	T14
Grainger, Jonathan	1st author	A-0123	Saturday, 31 August	9:00	0.81	T4S3
Grainger, Jonathan	Co-author	A-0486	Saturday, 31 August	11:00	Aula	PC
Grainger, Jonathan	Co-author	A-0416	Saturday, 31 August	9:00	1.79	T42
Grainger, Jonathan	Co-author	A-0216	Sunday, 1 September	9:00	1.79	T71
Grainger, Jonathan	Co-author	A-0495	Sunday, 1 September	9:00	1.79	T71
Grange, James A.	Co-author	A-0418	Friday, 30 August	13:30	0.79	T27
Granito, Carmen	Co-author	A-0602	Saturday, 31 August	11:00	Aula	PC
Gredebäck, Gustaf	Co-author	A-0611	Friday, 30 August	13:30	0.99	T24
Grégoire, Jacques	Co-author	A-0551	Friday, 30 August	9:00	0.100a	T15
Grimault, N.	Co-author	A-0708	Thursday, 29 August	16:00	Aula	PA
Groen, M.	Co-author	A-0496	Saturday, 31 August	11:00	Aula	PC
Guasch, Marc	Co-author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
Guasti, Maria T.	Co-author	A-0447	Saturday, 31 August	11:00	Aula	PC
Guerini, Rossella	1st author	A-0259	Saturday, 31 August	11:00	Aula	PC
Guest, Duncan	1st author	A-0120	Saturday, 31 August	9:00	1.79	T42
Guez, Jonathan	Co-author	A-0512	Friday, 30 August	11:00	Aula	PB
Guida, Alessandro	1st author	A-0066	Friday, 30 August	9:00	0.87	T12
Guillaume, Fabrice	Co-author	A-0296	Saturday, 31 August	11:00	Aula	PC
Guillory, Sylvia	Co-author	A-0093	Saturday, 31 August	9:00	0.100b	T44
Guillot, Aymeric	Co-author	A-0501	Saturday, 31 August	11:00	Aula	PC
Guilloux	Co-author	A-0532	Saturday, 31 August	9:00	1.79	T42
Guinet, Eric	Co-author	A-0213	Friday, 30 August	11:00	Aula	PB
Gulgoz, Sami	Co-author	A-0459	Sunday, 1 September	9:00	0.89	T75
Gur, Ezgi	1st author	A-0592	Saturday, 31 August	16:00	1.79	T63
Guttman, L.	Co-author	A-0434	Friday, 30 August	11:00	Aula	PB
Gülgöz, Sami	Co-author	A-0588	Friday, 30 August	11:00	Aula	PB
Gyselink, Gras	1st author	A-0673	Friday, 30 August	9:00	0.87	T12
Hadad, Batsheva	1st author	A-0582	Thursday, 29 August	16:00	Aula	PA
Hadad, Bat-Sheva	Co-author	A-0528	Friday, 30 August	11:00	Aula	PB
Hadas, Erel	1st author	A-0273	Thursday, 29 August	16:00	Aula	PA
Háden, Gábor P.	Co-author	A-0117	Thursday, 29 August	16:00	Aula	PA
Hagoort, Peter	Co-author	A-0680	Saturday, 31 August	11:00	Aula	PC

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Hamamé	Co-author	A-0422	Thursday, 29 August	16:00	Aula	PA
Hamilton, Antonia	Co-author	A-0370	Friday, 30 August	13:30	0.99	T24
Hanczakowski, Maciej	1st author	A-0438	Thursday, 29 August	16:00	Aula	PA
Hanique, Iris	Co-author	A-0379	Sunday, 1 September	9:00	1.79	T71
Hannagan, Thomas	1st author	A-0495	Sunday, 1 September	9:00	1.79	T71
Hannagan, Thomas	Co-author	A-0123	Saturday, 31 August	9:00	0.81	T4S3
Hannagan, Thomas	Co-author	A-0216	Sunday, 1 September	9:00	1.79	T71
Hansen, Laura B.	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Häring, Carola	Co-author	A-0046	Saturday, 31 August	9:00	0.83	T4S2
Haro, Juan	Co-author	A-0318	Friday, 30 August	11:00	Aula	PB
Harrison, Neil	1st author	A-0625	Saturday, 31 August	13:30	0.100b	T52
Harsányi, Géza	1st author	A-0226	Saturday, 31 August	11:00	Aula	PC
Hartsuiker, J.	Co-author	A-0253	Thursday, 29 August	16:00	Aula	PA
Hartsuiker, R.	Co-author	A-0334	Thursday, 29 August	16:00	Aula	PA
Hartsuiker, Robert	Co-author	A-0230	Friday, 30 August	16:00	0.87	T32
Hartsuiker, Robert	Co-author	A-0517	Saturday, 31 August	13:30	1.79	T51
Hartsuiker, Robert J.	Co-author	A-0353	Thursday, 29 August	16:00	Aula	PA
Hartsuiker, Robert J.	Co-author	A-0376	Saturday, 31 August	11:00	Aula	PC
Hasbroucq, Thierry	Co-author	A-0164	Friday, 30 August	13:30	0.79	T27
Hasbroucq, Thierry	Co-author	A-0643	Friday, 30 August	16:00	0.100a	T33
Havelka, Jelena	1st author	A-0454	Friday, 30 August	9:00	0.87	T12
Havelka, Jelena	Co-author	A-0175	Friday, 30 August	11:00	Aula	PB
Havelka, Jelena	Co-author	A-0245	Saturday, 31 August	11:00	Aula	PC
Hawkins, Erin	1st author	A-0056	Saturday, 31 August	9:00	0.100a	T41
Haynes, John-Dylan	Co-author	A-0209	Friday, 30 August	13:30	0.81	T2S2
Hayward, D. A.	1st author	A-0434	Friday, 30 August	11:00	Aula	PB
Hedge, Craig	1st author	A-0227	Friday, 30 August	16:00	0.100b	T36
Heekeren, Hauke	Co-author	A-0441	Thursday, 29 August	16:00	Aula	PA
Heim, Stefan	Co-author	A-0614	Saturday, 31 August	11:00	Aula	PC
Henderson, Lisa	1st author	A-0061	Thursday, 29 August	16:00	Aula	PA
Henderson, Lisa	Co-author	A-0328	Saturday, 31 August	9:00	0.100a	T41
Hendler, Jessica	Co-author	A-0140	Friday, 30 August	9:00	1.79	T16
Hendler, Talma	1st author	A-0752	Sunday, 1 September	9:00	0.83	T7S2
Henik, Avishai	Symposium Chair	-	Saturday, 31 August	9:00	0.79	T4S1
Henik, Avishai	Co-author	A-0304	Thursday, 29 August	16:00	Aula	PA
Henik, Avishai	Co-author	A-0693	Thursday, 29 August	16:00	Aula	PA
Henik, Avishai	Co-author	A-0360	Friday, 30 August	11:00	Aula	PB
Henik, Avishai	Co-author	A-0663	Friday, 30 August	11:00	Aula	PB
Henik, Avishai	Co-author	A-0372	Saturday, 31 August	11:00	Aula	PC
Henik, Avishai	Co-author	A-0487	Saturday, 31 August	11:00	Aula	PC
Henik, Avishai	Co-author	A-0659	Saturday, 31 August	11:00	Aula	PC
Henik, Avishai	Co-author	A-0107	Friday, 30 August	16:00	0.99	T35
Henik, Avishai	Co-author	A-0059	Saturday, 31 August	9:00	0.79	T4S1
Henik, Avishai	Co-author	A-0134	Saturday, 31 August	13:30	0.89	T55

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Henik, Avishai	Co-author	A-0664	Saturday, 31 August	13:30	0.89	T55
Henik, Avishai	Co-author	A-0096	Saturday, 31 August	16:00	0.87	T65
Henschke, Sebastian	Co-author	A-0556	Friday, 30 August	9:00	0.87	T12
Herbort, Oliver	1st author	A-0679	Friday, 30 August	16:00	0.100a	T33
Hermansen, Tone	Co-author	A-0611	Friday, 30 August	13:30	0.99	T24
Hernádi, István	Co-author	A-0773	Saturday, 31 August	11:00	Aula	PC
Hernandez-Munoz, Natividad	Co-author	A-0723	Thursday, 29 August	16:00	Aula	PA
Hernik, Mikołaj	1st author	A-0176	Sunday, 1 September	9:00	0.100b	T73
Herrera, Amparo	1st author	A-0406	Saturday, 31 August	16:00	0.100b	T62
Herrera, Amparo	Co-author	A-0403	Friday, 30 August	13:30	0.100a	T26
Hertzog, Christopher	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Hervás, G.	Co-author	A-0755	Thursday, 29 August	16:00	Aula	PA
Herzog, M. H.	Co-author	A-0417	Thursday, 29 August	16:00	Aula	PA
Heurley, Loïc	Co-author	A-0499	Friday, 30 August	11:00	Aula	PB
Hickey, Clayton	1st author	A-0509	Saturday, 31 August	13:30	0.87	T5S2
Hickey, Clayton	Symposium Chair	-	Saturday, 31 August	13:30	0.87	T5S2
Hiebel, Nina	1st author	A-0159	Friday, 30 August	11:00	Aula	PB
Hills, Peter	Co-author	A-0569	Saturday, 31 August	9:00	0.87	T45
Hintz, Florian	1st author	A-0525	Thursday, 29 August	16:00	Aula	PA
Hitch, Graham	Co-author	A-0266	Saturday, 31 August	13:30	Harmonia	T5S4
Hochman, Eldad Yitzhak	1st author	A-0109	Friday, 30 August	16:00	0.100a	T33
Hoeppli, Marie-Eve	Co-author	A-0765	Sunday, 1 September	9:00	0.83	T7S2
Hoffmann, Danielle	Co-author	A-0421	Friday, 30 August	11:00	Aula	PB
Holcomb, Phillip J.	Co-author	A-0486	Saturday, 31 August	11:00	Aula	PC
Holcomb, Phillip J.	Co-author	A-0216	Sunday, 1 September	9:00	1.79	T71
Holt, Jessica	Co-author	A-0767	Saturday, 31 August	13:30	Harmonia	T5S4
Homblé, Koen	1st author	A-0689	Friday, 30 August	16:00	1.79	T34
Hommel, Bernhard	1st author	A-0086	Friday, 30 August	13:30	Harmonia	T2S1
Hommel, Bernhard	1st author	A-0042	Saturday, 31 August	13:30	0.83	T5S3
Hommel, Bernhard	Co-author	A-0112	Saturday, 31 August	11:00	Aula	PC
Hommel, Bernhard	Co-author	A-0092	Friday, 30 August	13:30	Harmonia	T2S1
Hommel, Bernhard	Co-author	A-0055	Saturday, 31 August	13:30	0.83	T5S3
Hommel, Bernhard	Co-author	A-0314	Saturday, 31 August	13:30	0.83	T5S3
Hommel, Bernhard	Co-author	A-0383	Saturday, 31 August	13:30	0.83	T5S3
Honbolygó, Ferenc	Co-author	A-0536	Friday, 30 August	11:00	Aula	PB
Honbolygó, Ferenc	Co-author	A-0593	Friday, 30 August	11:00	Aula	PB
Honbolygó, Ferenc	Co-author	A-0714	Friday, 30 August	11:00	Aula	PB
Honbolygó, Ferenc	Co-author	A-0550	Saturday, 31 August	11:00	Aula	PC
Horne, Mark J.	1st author	A-0143	Thursday, 29 August	16:00	Aula	PA
Horoufchin, Houpand	Co-author	A-0504	Thursday, 29 August	16:00	Aula	PA
Horváth, János	1st author	A-0212	Thursday, 29 August	16:00	Aula	PA
Horváth, János	1st author	A-0206	Friday, 30 August	9:00	0.83	T1S1
Horváth, János	Co-author	A-0241	Thursday, 29 August	16:00	Aula	PA
Houtman, Femke	Co-author	A-0076	Sunday, 1 September	9:00	0.81	T7S1

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Name	Role	AbsNo	Date	Time	Room	Sect
Howard, Christina	Co-author	A-0120	Saturday, 31 August	9:00	1.79	T42
Howting, Lorraine	Co-author	A-0569	Saturday, 31 August	9:00	0.87	T45
Hsieh, Shulan	Co-author	A-0044	Friday, 30 August	13:30	0.79	T27
Hu, Vivian	Co-author	A-0266	Saturday, 31 August	13:30	Harmonia	T5S4
Huang, Chih-Mao	Co-author	A-0576	Friday, 30 August	11:00	Aula	PB
Huang, Hsu-Wen	Co-author	A-0576	Friday, 30 August	11:00	Aula	PB
Huang, Hsu-Wen	Co-author	A-0515	Saturday, 31 August	11:00	Aula	PC
Huau, Andréa	Co-author	A-0177	Saturday, 31 August	11:00	Aula	PC
Huber, Stefan	Co-author	A-0352	Thursday, 29 August	16:00	Aula	PA
Huber, Stefan	Co-author	A-0338	Saturday, 31 August	11:00	Aula	PC
Huber, Stefan	Co-author	A-0614	Saturday, 31 August	11:00	Aula	PC
Huber-Huber, Christoph	1st author	A-0452	Saturday, 31 August	11:00	Aula	PC
Huenefeldt, T.	Co-author	A-0707	Thursday, 29 August	16:00	Aula	PA
Huestegge, Lynn	1st author	A-0284	Saturday, 31 August	9:00	0.87	T45
Huestegge, Lynn	Co-author	A-0140	Friday, 30 August	9:00	1.79	T16
Huestegge, Lynn	Co-author	A-0182	Saturday, 31 August	9:00	0.87	T45
Huettig, Falk	Co-author	A-0450	Friday, 30 August	11:00	Aula	PB
Huettig, Falk	Co-author	A-0449	Saturday, 31 August	16:00	0.100a	T61
Hughes, Gethin	1st author	A-0300	Thursday, 29 August	16:00	Aula	PA
Hughes, Gethin	1st author	A-0297	Saturday, 31 August	13:30	0.100b	T52
Humphreys, Glyn	1st author	A-0770	Thursday, 29 August	18:30	Harmonia	K1
Humphreys, Glyn	1st author	A-0288	Saturday, 31 August	13:30	Harmonia	T5S4
Husain, Masud	Co-author	A-0282	Saturday, 31 August	13:30	Harmonia	T5S4
Hübner, Ronald	1st author	A-0222	Saturday, 31 August	16:00	0.83	T6S1
Iacullo, Vittorio Maria	1st author	A-0190	Thursday, 29 August	16:00	Aula	PA
Iamshchinina, Polina	1st author	A-0716	Saturday, 31 August	11:00	Aula	PC
Iannarelli, Francesca	Co-author	A-0169	Saturday, 31 August	11:00	Aula	PC
Ibañez, Antonio	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Ibbotson, Paul	1st author	A-0023	Saturday, 31 August	16:00	1.79	T63
Igoa, José M.	1st author	A-0737	Saturday, 31 August	13:30	0.81	T5S1
Ikeda, Takashi	Co-author	A-0460	Thursday, 29 August	16:00	Aula	PA
Ilic, Olivera	1st author	A-0596	Saturday, 31 August	9:00	0.100a	T41
Ilkin, Zeynep	1st author	A-0667	Thursday, 29 August	16:00	Aula	PA
Imperatori, C.	Co-author	A-0635	Thursday, 29 August	16:00	Aula	PA
Inbar, Adi Ben-Nun	Co-author	A-0048	Friday, 30 August	16:00	0.79	T3S2
Ingham, Jennifer	Co-author	A-0430	Friday, 30 August	11:00	Aula	PB
Inghilleri, Maurizio	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Inoue, Atsuko	Co-author	A-0035	Saturday, 31 August	11:00	Aula	PC
Iqbal, Sadia	Co-author	A-0658	Friday, 30 August	11:00	Aula	PB
Ishibashi, Ryo	1st author	A-0133	Saturday, 31 August	11:00	Aula	PC
Ishibashi, Yuya	Co-author	A-0400	Friday, 30 August	11:00	Aula	PB
Ishizaki, Chikage	Co-author	A-0514	Friday, 30 August	11:00	Aula	PB
Isingrini, Michel	1st author	A-0267	Saturday, 31 August	11:00	Aula	PC
Israel, Moran	1st author	A-0264	Friday, 30 August	13:30	Harmonia	T2S1

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Name	Role	AbsNo	Date	Time	Room	Sect
Itakura, Shoji	Co-author	A-0598	Friday, 30 August	11:00	Aula	PB
Itamar, Shai	Co-author	A-0487	Saturday, 31 August	11:00	Aula	PC
Iversen, Helle	Co-author	A-0199	Saturday, 31 August	11:00	Aula	PC
İyilikci, Osman	1st author	A-0649	Thursday, 29 August	16:00	Aula	PA
Izura, Cristina	1st author	A-0723	Thursday, 29 August	16:00	Aula	PA
Jakesch, Martina	Co-author	A-0295	Friday, 30 August	13:30	0.99	T24
Janacsek, Karolina	Co-author	A-0518	Thursday, 29 August	16:00	Aula	PA
Janacsek, Karolina	Co-author	A-0558	Friday, 30 August	9:00	0.81	T1S2
Janse, Esther	Co-author	A-0369	Friday, 30 August	11:00	Aula	PB
Janssens, Clio	1st author	A-0287	Thursday, 29 August	16:00	Aula	PA
Janssens, Leen	1st author	A-0114	Sunday, 1 September	9:00	0.100a	T72
Jarry	Co-author	A-0648	Friday, 30 August	16:00	0.100a	T33
Jelinek, Martin	Co-author	A-0320	Saturday, 31 August	11:00	Aula	PC
Jellema, Tjeerd	Co-author	A-0395	Thursday, 29 August	16:00	Aula	PA
Jellema, Tjeerd	Co-author	A-0430	Friday, 30 August	11:00	Aula	PB
Jersakova, Radka	1st author	A-0147	Saturday, 31 August	11:00	Aula	PC
Jescheniak, Jörg D.	Co-author	A-0031	Thursday, 29 August	16:00	Aula	PA
Jiménez, María	Co-author	A-0622	Friday, 30 August	11:00	Aula	PB
Job, Remo	Co-author	A-0350	Friday, 30 August	11:00	Aula	PB
Johnson, Elizabeth K.	Co-author	A-0398	Friday, 30 August	11:00	Aula	PB
Johnson, Eric D.	1st author	A-0589	Sunday, 1 September	9:00	0.100a	T72
Johnson, Eric D.	Co-author	A-0766	Friday, 30 August	11:00	Aula	PB
Jokić, Biljana	Co-author	A-0088	Thursday, 29 August	16:00	Aula	PA
Jones, Dylan	Co-author	A-0346	Friday, 30 August	13:30	0.89	T23
Jones, Dylan M.	Co-author	A-0438	Thursday, 29 August	16:00	Aula	PA
Jonsson, Bert	Co-author	A-0321	Saturday, 31 August	11:00	Aula	PC
Joseph, Tzelgov	Co-author	A-0036	Friday, 30 August	13:30	0.100a	T26
Jover, Marianne	Co-author	A-0177	Saturday, 31 August	11:00	Aula	PC
Jönsson, F. U.	Co-author	A-0729	Thursday, 29 August	16:00	Aula	PA
Jönsson, F. U.	Co-author	A-0715	Saturday, 31 August	11:00	Aula	PC
Jönsson, F. U.	Co-author	A-0743	Friday, 30 August	16:00	0.79	T3S2
Jönsson, Fredrik U.	1st author	A-0348	Friday, 30 August	16:00	0.79	T3S2
Jönsson, Fredrik U.	Co-author	A-0335	Saturday, 31 August	11:00	Aula	PC
Juárez, Verónica	Co-author	A-0406	Saturday, 31 August	16:00	0.100b	T62
Juhász, Mónika	Co-author	A-0757	Friday, 30 August	9:00	0.99	T14
Juhos, Csongor	Co-author	A-0341	Sunday, 1 September	9:00	0.100a	T72
Kadosh, Roi Cohen	Co-author	A-0630	Friday, 30 August	11:00	Aula	PB
Kadosh, Roi Cohen	Co-author	A-0490	Friday, 30 August	16:00	0.81	T3S3
Kadosh, Roy Cohen	1st author	A-0774	Saturday, 31 August	18:00	Harmonia	K3
Kahn, René S.	Co-author	A-0711	Friday, 30 August	13:30	0.99	T24
Kalakoski, V.	Co-author	A-0309	Thursday, 29 August	16:00	Aula	PA
Kalakoski, Virpi	1st author	A-0389	Friday, 30 August	11:00	Aula	PB
Kalanthroff, Eyal	1st author	A-0664	Saturday, 31 August	13:30	0.89	T55
Kalanthroff, Eyal	Co-author	A-0693	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Kaldy, Zsuzsa	1st author	A-0093	Saturday, 31 August	9:00	0.100b	T44
Kalenzaga, S.	1st author	A-0704	Saturday, 31 August	11:00	Aula	PC
Kalenzaga, Sandrine	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Kallai, Arava Y.	1st author	A-0185	Friday, 30 August	9:00	0.100a	T15
Kamarowski, L.	Co-author	A-0597	Friday, 30 August	11:00	Aula	PB
Kampis, Dóra	1st author	A-0399	Thursday, 29 August	16:00	Aula	PA
Kandel, Sonia	Co-author	A-0579	Friday, 30 August	11:00	Aula	PB
Kanerva, K.	1st author	A-0309	Thursday, 29 August	16:00	Aula	PA
Kantor-Martynuska, Joanna	1st author	A-0591	Friday, 30 August	13:30	0.100b	T25
Kanwisher, Nancy	1st author	A-0772	Friday, 30 August	18:30	Harmonia	K2
Kaplan, Robin L.	Co-author	A-0085	Saturday, 31 August	16:00	0.79	T6S3
Kardos, Peter	Co-author	A-0580	Thursday, 29 August	16:00	Aula	PA
Kardos, Péter	Co-author	A-0549	Saturday, 31 August	11:00	Aula	PC
Karlsson, Kristina	1st author	A-0665	Saturday, 31 August	11:00	Aula	PC
Kärnekull, Stina Cornell	1st author	A-0335	Saturday, 31 August	11:00	Aula	PC
Katz, Gali	Co-author	A-0059	Saturday, 31 August	9:00	0.79	T4S1
Katz, Michal	Co-author	A-0547	Friday, 30 August	11:00	Aula	PB
Katzir, Maayan	1st author	A-0044	Friday, 30 August	13:30	0.79	T27
Kaya, Alp Giray	1st author	A-0695	Friday, 30 August	11:00	Aula	PB
Keane, M. T.	Co-author	A-0286	Saturday, 31 August	9:00	0.100a	T41
Keane, M. T.	Co-author	A-0194	Sunday, 1 September	9:00	0.100a	T72
Kecskés-Kovács, Krisztina	1st author	A-0291	Thursday, 29 August	16:00	Aula	PA
Kecskés-Kovács, Krisztina	Co-author	A-0162	Friday, 30 August	13:30	0.83	T2S3
Kelly, Jonathan W.	Co-author	A-0242	Thursday, 29 August	16:00	Aula	PA
Kelly, Jonathan W.	Co-author	A-0221	Friday, 30 August	11:00	Aula	PB
Kemény, Ferenc	1st author	A-0283	Friday, 30 August	9:00	0.81	T1S2
Kerckhofs, Eric	Co-author	A-0054	Saturday, 31 August	13:30	0.89	T55
Keresztes, Attila	1st author	A-0644	Saturday, 31 August	9:00	0.89	T43
Keresztes, Attila	Co-author	A-0633	Saturday, 31 August	9:00	0.89	T43
Kessler, Yoav	1st author	A-0401	Friday, 30 August	9:00	0.79	T11
Kessler, Yoav	Co-author	A-0528	Friday, 30 August	11:00	Aula	PB
Kessler, Yoav	Co-author	A-0260	Saturday, 31 August	11:00	Aula	PC
Kessler, Yoav	Co-author	A-0524	Saturday, 31 August	11:00	Aula	PC
Keuleers, Emmanuel	Co-author	A-0137	Saturday, 31 August	9:00	0.81	T4S3
Kidd, Evan	Co-author	A-0033	Friday, 30 August	11:00	Aula	PB
Kieng, Sotta	1st author	A-0060	Saturday, 31 August	11:00	Aula	PC
Kiesel, Andrea	1st author	A-0046	Saturday, 31 August	9:00	0.83	T4S2
Kiesel, Andrea	Co-author	A-0094	Saturday, 31 August	16:00	0.81	T6S2
Kiesel, Andrea	Co-author	A-0167	Saturday, 31 August	16:00	0.81	T6S2
Kilner, James	Co-author	A-0751	Thursday, 29 August	16:00	Aula	PA
Kim, Jeong-Im	Co-author	A-0288	Saturday, 31 August	13:30	Harmonia	T5S4
Kimura, Takahiko	1st author	A-0508	Saturday, 31 August	11:00	Aula	PC
Kincses, P.	Co-author	A-0739	Friday, 30 August	9:00	0.99	T14
King, Jean-Rémi	Co-author	A-0357	Friday, 30 August	16:00	0.83	T3S1

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Name	Role	AbsNo	Date	Time	Room	Sect
King, Joseph A.	Co-author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Kingma, Brechtsje	Co-author	A-0216	Sunday, 1 September	9:00	1.79	T71
Kinoshita, Sachiko	1st author	A-0202	Friday, 30 August	16:00	0.83	T3S1
Kinoshita, Sachiko	1st author	A-0203	Saturday, 31 August	9:00	0.81	T4S3
Kirjakovski, Atanas	1st author	A-0457	Friday, 30 August	11:00	Aula	PB
Kirkham, Natasha	Co-author	A-0699	Saturday, 31 August	11:00	Aula	PC
Kirschbaum, Clemens	Co-author	A-0511	Friday, 30 August	13:30	Harmonia	T2S1
Kitamura, Yasuhiro	1st author	A-0725	Saturday, 31 August	11:00	Aula	PC
Klein, Elise	Co-author	A-0614	Saturday, 31 August	11:00	Aula	PC
Kleinsorge, Thomas	1st author	A-0235	Friday, 30 August	9:00	1.79	T16
Kleinsorge, Thomas	Co-author	A-0237	Friday, 30 August	11:00	Aula	PB
Kluckow, Steffen	Co-author	A-0471	Sunday, 1 September	9:00	0.87	T74
Knoblich, G.	Co-author	A-0229	Saturday, 31 August	11:00	Aula	PC
Knoblich, Günther	Co-author	A-0265	Friday, 30 August	11:00	Aula	PB
Knoblich, Günther	Co-author	A-0476	Friday, 30 August	11:00	Aula	PB
Knoblich, Günther	Co-author	A-0661	Saturday, 31 August	13:30	0.83	T5S3
Knopf, M.	Co-author	A-0743	Friday, 30 August	16:00	0.79	T3S2
Knopman, David S	Co-author	A-0619	Sunday, 1 September	9:00	0.79	T7S3
Kóbor, Andrea	1st author	A-0536	Friday, 30 August	11:00	Aula	PB
Kóbor, Andrea	Co-author	A-0550	Saturday, 31 August	11:00	Aula	PC
Koch, Iring	1st author	A-0261	Friday, 30 August	9:00	1.79	T16
Koch, Iring	Co-author	A-0504	Thursday, 29 August	16:00	Aula	PA
Koch, Iring	Co-author	A-0342	Friday, 30 August	11:00	Aula	PB
Koch, Iring	Co-author	A-0223	Saturday, 31 August	11:00	Aula	PC
Koch, Iring	Co-author	A-0140	Friday, 30 August	9:00	1.79	T16
Koch, Iring	Co-author	A-0709	Friday, 30 August	9:00	1.79	T16
Koch, Iring	Co-author	A-0284	Saturday, 31 August	9:00	0.87	T45
Koculak, Marcin	1st author	A-0654	Friday, 30 August	11:00	Aula	PB
Kocsis, Zsuzsanna	1st author	A-0104	Thursday, 29 August	16:00	Aula	PA
Kocsor, Ferenc	1st author	A-0748	Friday, 30 August	9:00	0.99	T14
Kokinous, Jenny	1st author	A-0652	Friday, 30 August	11:00	Aula	PB
Kolanczyk, Alina	Co-author	A-0677	Sunday, 1 September	9:00	0.87	T74
Kolańczyk, Alina	1st author	A-0289	Friday, 30 August	9:00	0.100b	T13
Kolańczyk, Alina	Co-author	A-0698	Thursday, 29 August	16:00	Aula	PA
Kolinsky	Co-author	A-0710	Friday, 30 August	11:00	Aula	PB
Kolinsky, R.	Co-author	A-0148	Friday, 30 August	11:00	Aula	PB
Kolinsky, Régine	Co-author	A-0543	Saturday, 31 August	11:00	Aula	PC
Kolinsky, Régine	Co-author	A-0072	Saturday, 31 August	11:00	Aula	PC
Komnenić, Darko	Co-author	A-0087	Thursday, 29 August	16:00	Aula	PA
Kondé, Zoltán	1st author	A-0358	Thursday, 29 August	16:00	Aula	PA
Kondé, Zoltán	Co-author	A-0692	Friday, 30 August	11:00	Aula	PB
Konijnenberg, Carolien	Co-author	A-0611	Friday, 30 August	13:30	0.99	T24
Konvalinka, Ivana	1st author	A-0751	Thursday, 29 August	16:00	Aula	PA
Kopta, Vladimir	Co-author	A-0510	Friday, 30 August	11:00	Aula	PB

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Korb, Franziska M.	Co-author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Koreneva, Olga	Co-author	A-0426	Friday, 30 August	11:00	Aula	PB
Kotz, Sonja A.	Co-author	A-0652	Friday, 30 August	11:00	Aula	PB
Kotz, Sonja A.	Co-author	A-0347	Friday, 30 August	9:00	0.83	T1S1
Kovács, Ágnes	Co-author	A-0399	Thursday, 29 August	16:00	Aula	PA
Kovács, Ágnes Melinda	Co-author	A-0424	Friday, 30 August	11:00	Aula	PB
Kovacs, Kristof	1st author	A-0672	Friday, 30 August	9:00	0.79	T11
Kovacs, Kristof	Co-author	A-0675	Friday, 30 August	9:00	0.79	T11
Kovács-Bálint, Zsófia	1st author	A-0773	Saturday, 31 August	11:00	Aula	PC
Kovic, Vanja	Co-author	A-0682	Friday, 30 August	16:00	0.87	T32
Kovic, Vanja	Co-author	A-0596	Saturday, 31 August	9:00	0.100a	T41
Kowalczyk, Marek	1st author	A-0502	Friday, 30 August	11:00	Aula	PB
Kowalczyk, N.	Co-author	A-0686	Saturday, 31 August	16:00	0.87	T65
Koyasu, Masuo	Co-author	A-0043	Friday, 30 August	11:00	Aula	PB
Koyasu, Masuo	Co-author	A-0131	Friday, 30 August	11:00	Aula	PB
Koyuncu, Mehmet	Co-author	A-0497	Thursday, 29 August	16:00	Aula	PA
Kray, Jutta	Co-author	A-0564	Thursday, 29 August	16:00	Aula	PA
Krebs, M. O.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Krebs, Marie-Odile	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Krebs, Ruth	Co-author	A-0293	Thursday, 29 August	16:00	Aula	PA
Krebs, Ruth	Co-author	A-0201	Friday, 30 August	9:00	0.100b	T13
Krebs, Ruth M.	Co-author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Krefeld, Antonia	1st author	A-0720	Saturday, 31 August	11:00	Aula	PC
Kreutzfeldt, Magali	1st author	A-0342	Friday, 30 August	11:00	Aula	PB
Krishnan, Anjali	Co-author	A-0079	Sunday, 1 September	9:00	0.83	T7S2
Kroll, Judith	Co-author	A-0432	Friday, 30 August	11:00	Aula	PB
Kroll, Judith F.	1st author	A-0052	Saturday, 31 August	13:30	0.81	T5S1
Ktori, Maria	1st author	A-0216	Sunday, 1 September	9:00	1.79	T71
Ktori, Maria	Co-author	A-0123	Saturday, 31 August	9:00	0.81	T4S3
Kubik, V.	1st author	A-0743	Friday, 30 August	16:00	0.79	T3S2
Kubik, Veit	Co-author	A-0348	Friday, 30 August	16:00	0.79	T3S2
Kuhlen, Anna K.	1st author	A-0209	Friday, 30 August	13:30	0.81	T2S2
Kuipers, J-R.	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31
Kulawik, Ludmiła	Co-author	A-0482	Sunday, 1 September	9:00	0.89	T75
Kunchulia, Marina	1st author	A-0161	Sunday, 1 September	9:00	0.79	T7S3
Kunde, Wilfried	Co-author	A-0094	Saturday, 31 August	16:00	0.81	T6S2
Kunde, Wilfried	Co-author	A-0167	Saturday, 31 August	16:00	0.81	T6S2
Kuperman, Victor	Co-author	A-0137	Saturday, 31 August	9:00	0.81	T4S3
Kuraguchi, Kana	1st author	A-0279	Saturday, 31 August	11:00	Aula	PC
Kursawe, Michael	1st author	A-0651	Saturday, 31 August	13:30	Harmonia	T5S4
Kutas, Marta	Co-author	A-0017	Saturday, 31 August	16:00	0.100a	T61
Kuvaldina, Maria	1st author	A-0599	Friday, 30 August	13:30	0.100b	T25
Kühn, Simone	Co-author	A-0451	Friday, 30 August	11:00	Aula	PB
Kühn, Simone	Co-author	A-0419	Saturday, 31 August	9:00	0.87	T45

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Name	Role	AbsNo	Date	Time	Room	Sect
Kveton, Petr	1st author	A-0320	Saturday, 31 August	11:00	Aula	PC
Kwaśnik, Marta	1st author	A-0698	Thursday, 29 August	16:00	Aula	PA
Kyllingsbæk, Søren	1st author	A-0427	Sunday, 1 September	9:00	0.87	T74
Kyllingsbæk, Søren	Co-author	A-0717	Friday, 30 August	11:00	Aula	PB
Lábadi, Beatrix	1st author	A-0757	Friday, 30 August	9:00	0.99	T14
Labat, Hélène	1st author	A-0008	Friday, 30 August	11:00	Aula	PB
Labovitch, Tali	Co-author	A-0487	Saturday, 31 August	11:00	Aula	PC
Laganaro, Marina	Co-author	A-0332	Friday, 30 August	16:00	0.87	T32
Lahey, Mybeth	1st author	A-0398	Friday, 30 August	11:00	Aula	PB
Lallier, Marie	1st author	A-0173	Thursday, 29 August	16:00	Aula	PA
Lallier, Marie	Co-author	A-0436	Saturday, 31 August	16:00	0.100b	T62
Lampatz, Allegra	Co-author	A-0626	Friday, 30 August	13:30	0.87	T22
Lamy, Dominique	Co-author	A-0657	Friday, 30 August	9:00	0.79	T11
Lamy, Dominique	Co-author	A-0647	Saturday, 31 August	9:00	1.79	T42
Lander, Karen	1st author	A-0188	Friday, 30 August	13:30	0.99	T24
Landry, Mathieu	1st author	A-0639	Saturday, 31 August	11:00	Aula	PC
Lange, Elke B.	1st author	A-0556	Friday, 30 August	9:00	0.87	T12
Lange, Kathrin	Symposium Chair	-	Friday, 30 August	9:00	0.83	T1S1
Langerock, Naomi	1st author	A-0377	Saturday, 31 August	13:30	0.79	T53
Langerock, Naomi	Co-author	A-0217	Saturday, 31 August	13:30	0.79	T53
Larrazza, Saioa	1st author	A-0458	Saturday, 31 August	11:00	Aula	PC
Larson, Christine L.	1st author	A-0050	Sunday, 1 September	9:00	0.83	T7S2
Larsson, Maria	Co-author	A-0335	Saturday, 31 August	11:00	Aula	PC
Lavigne, Frédéric	Co-author	A-0411	Friday, 30 August	13:30	0.100a	T26
Lavric, A.	Co-author	A-0243	Friday, 30 August	9:00	0.100b	T13
Lavric, Aureliu	1st author	A-0662	Friday, 30 August	13:30	0.79	T27
Lavric, Aureliu	Co-author	A-0618	Friday, 30 August	9:00	1.79	T16
Lavric, Aureliu	Co-author	A-0412	Friday, 30 August	13:30	0.79	T27
Lawo, Vera	1st author	A-0709	Friday, 30 August	9:00	1.79	T16
Leberre, Julie	Co-author	A-0481	Saturday, 31 August	11:00	Aula	PC
Lecerf, Thierry	Co-author	A-0060	Saturday, 31 August	11:00	Aula	PC
Lchuga, M. T.	Co-author	A-0330	Friday, 30 August	9:00	0.89	T1S3
Leder, Helmut	Co-author	A-0595	Friday, 30 August	11:00	Aula	PB
Leder, Helmut	Co-author	A-0676	Saturday, 31 August	11:00	Aula	PC
Leder, Helmut	Co-author	A-0626	Friday, 30 August	13:30	0.87	T22
Leder, Helmut	Co-author	A-0295	Friday, 30 August	13:30	0.99	T24
Leder, Helmut	Co-author	A-0316	Saturday, 31 August	16:00	0.81	T6S2
Lee, Rose Ru-Whui	1st author	A-0670	Thursday, 29 August	16:00	Aula	PA
Lee, Yuh-shiow	Co-author	A-0135	Thursday, 29 August	16:00	Aula	PA
Lefebvre, Laurent	Co-author	A-0034	Friday, 30 August	11:00	Aula	PB
Lega, Carlotta	Co-author	A-0660	Friday, 30 August	11:00	Aula	PB
Leibovich, Tali	1st author	A-0059	Saturday, 31 August	9:00	0.79	T4S1
Leibovich, Tali	Co-author	A-0107	Friday, 30 August	16:00	0.99	T35
Leikin, M.	Co-author	A-0074	Saturday, 31 August	11:00	Aula	PC

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Name	Role	AbsNo	Date	Time	Room	Sect
Leikin, R.	Co-author	A-0074	Saturday, 31 August	11:00	Aula	PC
Lemercier, Céline	1st author	A-0172	Saturday, 31 August	11:00	Aula	PC
Lemercier, Céline	Co-author	A-0108	Saturday, 31 August	11:00	Aula	PC
Lendínez, C.	Co-author	A-0330	Friday, 30 August	9:00	0.89	T1S3
Leonards, Ute	Co-author	A-0227	Friday, 30 August	16:00	0.100b	T36
Lesourd, Mathieu	1st author	A-0648	Friday, 30 August	16:00	0.100a	T33
Levin, Yulia	1st author	A-0015	Saturday, 31 August	11:00	Aula	PC
Levine, Linda J.	Co-author	A-0085	Saturday, 31 August	16:00	0.79	T6S3
Lewandowsky, Stephan	Co-author	A-0152	Friday, 30 August	9:00	0.89	T1S3
Leybaert, Jacqueline	Co-author	A-0037	Thursday, 29 August	16:00	Aula	PA
Libera, Chiara Della	1st author	A-0082	Saturday, 31 August	13:30	0.87	T5S2
Lien, Mei-Ching	1st author	A-0010	Friday, 30 August	16:00	0.99	T35
Liepelt, Roman	1st author	A-0039	Saturday, 31 August	13:30	0.83	T5S3
Liepelt, Roman	Symposium Chair	-	Saturday, 31 August	13:30	0.83	T5S3
Liepelt, Roman	Co-author	A-0055	Saturday, 31 August	13:30	0.83	T5S3
Liepelt, Roman	Co-author	A-0314	Saturday, 31 August	13:30	0.83	T5S3
Liepelt, Roman	Co-author	A-0383	Saturday, 31 August	13:30	0.83	T5S3
Limor, Lichtenstein-Vidne	Co-author	A-0513	Saturday, 31 August	13:30	0.100a	T54
Lin, Hsuan-Yu	1st author	A-0703	Saturday, 31 August	9:00	0.89	T43
Lin, Sheng-Kai	Co-author	A-0670	Thursday, 29 August	16:00	Aula	PA
Lindegaard, Martin Weis	Co-author	A-0199	Saturday, 31 August	11:00	Aula	PC
Lindell, Annukka K.	1st author	A-0033	Friday, 30 August	11:00	Aula	PB
Lindemann, Oliver	1st author	A-0585	Thursday, 29 August	16:00	Aula	PA
Link, Tanja	1st author	A-0338	Saturday, 31 August	11:00	Aula	PC
Linkovski, Omer	1st author	A-0693	Thursday, 29 August	16:00	Aula	PA
Lion, S.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Liverani, Maria Chiara	Co-author	A-0765	Sunday, 1 September	9:00	0.83	T7S2
Loaiza, V.	Co-author	A-0151	Friday, 30 August	11:00	Aula	PB
Loaiza, Vanessa M.	1st author	A-0488	Saturday, 31 August	9:00	0.89	T43
Loftus, Elizabeth F.	Co-author	A-0085	Saturday, 31 August	16:00	0.79	T6S3
Logan, Gordon D.	Co-author	A-0313	Thursday, 29 August	16:00	Aula	PA
Logan, Gordon D.	Co-author	A-0540	Friday, 30 August	13:30	0.79	T27
Logie, Robert H	1st author	A-0115	Saturday, 31 August	13:30	Harmonia	T5S4
Logie, Robert H	Co-author	A-0445	Friday, 30 August	11:00	Aula	PB
Logie, Robert H.	Co-author	A-0067	Thursday, 29 August	16:00	Aula	PA
Logie, Robert H.	Co-author	A-0143	Thursday, 29 August	16:00	Aula	PA
Longcamp	Co-author	A-0422	Thursday, 29 August	16:00	Aula	PA
Longman, Cai S.	1st author	A-0412	Friday, 30 August	13:30	0.79	T27
Longman, Cai S.	Co-author	A-0662	Friday, 30 August	13:30	0.79	T27
Lopera, Francisco	Co-author	A-0164	Friday, 30 August	13:30	0.79	T27
López, Diana García	Co-author	A-0023	Saturday, 31 August	16:00	1.79	T63
Lorenz, Antje	1st author	A-0326	Friday, 30 August	11:00	Aula	PB
Lorenz, Antje	Co-author	A-0563	Saturday, 31 August	11:00	Aula	PC
Loui, Sofia	1st author	A-0609	Friday, 30 August	11:00	Aula	PB

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Name	Role	AbsNo	Date	Time	Room	Sect
Loureiro, Isabelle Simoes	1st author	A-0034	Friday, 30 August	11:00	Aula	PB
Lourenco, Stella F.	1st author	A-0503	Saturday, 31 August	9:00	0.79	T4S1
Love, Jonathon	Co-author	A-0540	Friday, 30 August	13:30	0.79	T27
Löffler, Anne	Co-author	A-0193	Saturday, 31 August	9:00	0.83	T4S2
Luca, Samuel Di	Co-author	A-0663	Friday, 30 August	11:00	Aula	PB
Lucidi, A.	1st author	A-0151	Friday, 30 August	11:00	Aula	PB
Lucidi, Annalisa	Co-author	A-0217	Saturday, 31 August	13:30	0.79	T53
Luedtke, Ramona A.	1st author	A-0453	Thursday, 29 August	16:00	Aula	PA
Lukács, Ágnes	Co-author	A-0283	Friday, 30 August	9:00	0.81	T1S2
Lukander, Jani	Co-author	A-0389	Friday, 30 August	11:00	Aula	PB
Luwel, K.	Co-author	A-0685	Friday, 30 August	11:00	Aula	PB
Luwel, Koen	1st author	A-0220	Friday, 30 August	13:30	0.100a	T26
Lynn, Margaret T	Co-author	A-0415	Saturday, 31 August	9:00	0.83	T4S2
M, M. Pillot	1st author	A-0084	Saturday, 31 August	11:00	Aula	PC
Ma, Ke	1st author	A-0112	Saturday, 31 August	11:00	Aula	PC
Macaluso, Emiliano	Co-author	A-0116	Saturday, 31 August	11:00	Aula	PC
Macaluso, Emiliano	Co-author	A-0111	Friday, 30 August	13:30	0.89	T23
Machado, J.	Co-author	A-0009	Thursday, 29 August	16:00	Aula	PA
Machleb, Franziska	Co-author	A-0563	Saturday, 31 August	11:00	Aula	PC
Macizo, Pedro	1st author	A-0403	Friday, 30 August	13:30	0.100a	T26
Macizo, Pedro	Co-author	A-0426	Friday, 30 August	11:00	Aula	PB
Macizo, Pedro	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Macizo, Pedro	Co-author	A-0406	Saturday, 31 August	16:00	0.100b	T62
Macken, Bill	1st author	A-0346	Friday, 30 August	13:30	0.89	T23
Macken, William	Co-author	A-0591	Friday, 30 August	13:30	0.100b	T25
MacLeod, Malcolm	1st author	A-0097	Friday, 30 August	16:00	0.79	T3S2
Mädebach, Andreas	Co-author	A-0031	Thursday, 29 August	16:00	Aula	PA
Maertens, Bieke	1st author	A-0091	Thursday, 29 August	16:00	Aula	PA
Magen, Hagit	1st author	A-0627	Friday, 30 August	9:00	0.79	T11
Magistretti, Pierre	Co-author	A-0475	Friday, 30 August	11:00	Aula	PB
Magnan, Annie	Co-author	A-0008	Friday, 30 August	11:00	Aula	PB
Magnan, Annie	Co-author	A-0694	Saturday, 31 August	11:00	Aula	PC
Magnuson, Jim	Co-author	A-0495	Sunday, 1 September	9:00	1.79	T71
Mahajna, Islam	Co-author	A-0547	Friday, 30 August	11:00	Aula	PB
Mahé, Aurélia	1st author	A-0294	Saturday, 31 August	16:00	0.79	T6S3
Mahé, Gwendoline	1st author	A-0149	Sunday, 1 September	9:00	0.100b	T73
Mahmood, Shazara	Co-author	A-0658	Friday, 30 August	11:00	Aula	PB
Maidment, David	Co-author	A-0346	Friday, 30 August	13:30	0.89	T23
Maïonchi-Pino, Norbert	1st author	A-0694	Saturday, 31 August	11:00	Aula	PC
Majerus, & Steve	Co-author	A-0402	Friday, 30 August	11:00	Aula	PB
Majerus, Steve	1st author	A-0170	Friday, 30 August	9:00	0.87	T12
Majerus, Steve	Co-author	A-0535	Friday, 30 August	11:00	Aula	PB
Malaspina, Manuela	Co-author	A-0333	Friday, 30 August	13:30	0.100b	T25
Mallet, Pierre	Co-author	A-0593	Friday, 30 August	11:00	Aula	PB

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Name	Role	AbsNo	Date	Time	Room	Sect
Mammarella, Irene C.	Co-author	A-0255	Saturday, 31 August	9:00	0.100b	T44
Mancini, Josette	Co-author	A-0177	Saturday, 31 August	11:00	Aula	PC
Mancini, Simona	1st author	A-0754	Thursday, 29 August	16:00	Aula	PA
Mandera, Pawel	Co-author	A-0137	Saturday, 31 August	9:00	0.81	T4S3
Mäntylä, Timo	1st author	A-0189	Saturday, 31 August	9:00	0.87	T45
Manuck, Steve	Co-author	A-0079	Sunday, 1 September	9:00	0.83	T7S2
Mapelli, Daniela	Co-author	A-0311	Friday, 30 August	11:00	Aula	PB
Marangon, Mattia	1st author	A-0208	Saturday, 31 August	11:00	Aula	PC
Marchand, Cynthia	Co-author	A-0128	Friday, 30 August	16:00	0.99	T35
Margaux, Gelin	Co-author	A-0183	Thursday, 29 August	16:00	Aula	PA
Maria, De Martino	1st author	A-0522	Saturday, 31 August	11:00	Aula	PC
Marin, Manuela M.	1st author	A-0626	Friday, 30 August	13:30	0.87	T22
Marinelli, Chiara Valeria	Co-author	A-0718	Friday, 30 August	11:00	Aula	PB
Marino, Barbara F. M.	Co-author	A-0478	Thursday, 29 August	16:00	Aula	PA
Marinus, Eva	Co-author	A-0071	Saturday, 31 August	11:00	Aula	PC
Markus, Eilat	Co-author	A-0544	Saturday, 31 August	16:00	0.100b	T62
Marne, Paula	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Marques, J. Frederico	Co-author	A-0219	Friday, 30 August	11:00	Aula	PB
Marques, Valeria R.S.	1st author	A-0169	Saturday, 31 August	11:00	Aula	PC
Marshall, Benjamin	Co-author	A-0630	Friday, 30 August	11:00	Aula	PB
Marshall, Zoe	Co-author	A-0317	Saturday, 31 August	9:00	0.100b	T44
Martelli, Marialuisa	Co-author	A-0333	Friday, 30 August	13:30	0.100b	T25
Marti, Sebastien	Co-author	A-0357	Friday, 30 August	16:00	0.83	T3S1
Martin, C.	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31
Martin, Clara	Co-author	A-0349	Friday, 30 August	13:30	0.81	T2S2
Martín, María Cruz	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Martinelli, P.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Martinelli, Pénélope	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Martínez, Albert Costa	Co-author	A-0444	Friday, 30 August	11:00	Aula	PB
Martinez, Alejandro	Co-author	A-0671	Friday, 30 August	9:00	0.100a	T15
martins, isabel catarina	1st author	A-0113	Friday, 30 August	13:30	0.87	T22
Martins, Isabel Catarina	1st author	A-0726	Saturday, 31 August	13:30	0.100b	T52
Marucci, Francesco S.	Co-author	A-0190	Thursday, 29 August	16:00	Aula	PA
Marzouki, Yousri	1st author	A-0416	Saturday, 31 August	9:00	1.79	T42
Mascaro, Olivier	1st author	A-0554	Sunday, 1 September	9:00	0.100b	T73
Mason, Catherine	Co-author	A-0563	Saturday, 31 August	11:00	Aula	PC
Massacesi, Stefano	Co-author	A-0208	Saturday, 31 August	11:00	Aula	PC
Massol, Stéphanie	1st author	A-0486	Saturday, 31 August	11:00	Aula	PC
Masson, Guillaume S	Co-author	A-0730	Thursday, 29 August	16:00	Aula	PA
Mastroberardino, Serena	Co-author	A-0111	Friday, 30 August	13:30	0.89	T23
Masuda, Megumi	1st author	A-0132	Saturday, 31 August	11:00	Aula	PC
Masuda, Megumi	Co-author	A-0400	Friday, 30 August	11:00	Aula	PB
Masuda, Takayuki	Co-author	A-0725	Saturday, 31 August	11:00	Aula	PC
Mathey, Stephanie	1st author	A-0210	Thursday, 29 August	16:00	Aula	PA

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Mathey, Stéphanie	Co-author	A-0211	Saturday, 31 August	11:00	Aula	PC
Mathy, Fabien	1st author	A-0744	Friday, 30 August	9:00	0.87	T12
Matsumoto, Eriko	Co-author	A-0457	Friday, 30 August	11:00	Aula	PB
Mattia, Donatella	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Matushanskaya, Asya	1st author	A-0031	Thursday, 29 August	16:00	Aula	PA
Matzke, Dora	1st author	A-0540	Friday, 30 August	13:30	0.79	T27
Mauhar, Rebecca	Co-author	A-0046	Saturday, 31 August	9:00	0.83	T4S2
Max, Ricardo	1st author	A-0520	Friday, 30 August	16:00	0.100b	T36
Mazzoni, Giuliana	Co-author	A-0190	Thursday, 29 August	16:00	Aula	PA
Mazzoni, Giuliana	Co-author	A-0631	Friday, 30 August	11:00	Aula	PB
McCormick, Samantha F.	Co-author	A-0516	Friday, 30 August	11:00	Aula	PB
McKane, Alan J.	Co-author	A-0023	Saturday, 31 August	16:00	1.79	T63
McLaren, I. P. L.	Co-author	A-0243	Friday, 30 August	9:00	0.100b	T13
McLaren, Ian	Co-author	A-0581	Friday, 30 August	9:00	1.79	T16
McLaren, Ian P.	Co-author	A-0313	Thursday, 29 August	16:00	Aula	PA
McQueen, James	Co-author	A-0337	Friday, 30 August	13:30	1.79	T21
Meert, Gaëlle	1st author	A-0552	Saturday, 31 August	11:00	Aula	PC
Meert, Gaëlle	1st author	A-0551	Friday, 30 August	9:00	0.100a	T15
Megías, Patricia	Co-author	A-0403	Friday, 30 August	13:30	0.100a	T26
Meier, Beat	1st author	A-0144	Friday, 30 August	9:00	0.81	T1S2
Meiran, Nachshon	1st author	A-0573	Saturday, 31 August	13:30	0.89	T55
Meiran, Nachshon	Co-author	A-0601	Saturday, 31 August	11:00	Aula	PC
Meiran, Nachshon	Co-author	A-0044	Friday, 30 August	13:30	0.79	T27
Meiser, Thorsten	Co-author	A-0637	Saturday, 31 August	11:00	Aula	PC
Melinder, Annika	1st author	A-0611	Friday, 30 August	13:30	0.99	T24
Melinder, Annika	Co-author	A-0594	Sunday, 1 September	9:00	0.89	T75
Mella, Nathalie	1st author	A-0616	Saturday, 31 August	11:00	Aula	PC
Meloni, Roberta	Co-author	A-0254	Thursday, 29 August	16:00	Aula	PA
Meneghetti, Chiara	Co-author	A-0268	Saturday, 31 August	11:00	Aula	PC
Mercier, Brunissende	1st author	A-0411	Friday, 30 August	13:30	0.100a	T26
Merkl, Angela	Co-author	A-0130	Thursday, 29 August	16:00	Aula	PA
Mermillod, Martial	Co-author	A-0612	Thursday, 29 August	16:00	Aula	PA
Mermillod, Martial	Co-author	A-0186	Friday, 30 August	11:00	Aula	PB
Mermillod, Martial	Co-author	A-0566	Friday, 30 August	11:00	Aula	PB
Mestre, Daniel	Co-author	A-0593	Friday, 30 August	11:00	Aula	PB
Meunier, F.	Co-author	A-0708	Thursday, 29 August	16:00	Aula	PA
Meyer, Antje S.	Co-author	A-0525	Thursday, 29 August	16:00	Aula	PA
Meyer, Antje S.	Co-author	A-0369	Friday, 30 August	11:00	Aula	PB
Meyer, Antje S.	Co-author	A-0351	Saturday, 31 August	13:30	1.79	T51
Michael, Andres	1st author	A-0603	Friday, 30 August	13:30	0.87	T22
Michael, John	1st author	A-0021	Friday, 30 August	9:00	0.99	T14
Midgley, Katherine J.	Co-author	A-0486	Saturday, 31 August	11:00	Aula	PC
Milhau, Audrey	1st author	A-0499	Friday, 30 August	11:00	Aula	PB
Milin, Petar	Co-author	A-0462	Friday, 30 August	13:30	1.79	T21

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Mill, Robert W.	Co-author	A-0315	Friday, 30 August	13:30	0.83	T2S3
Milner, Theodor E.	Co-author	A-0109	Friday, 30 August	16:00	0.100a	T33
Milton, Fraser	Co-author	A-0313	Thursday, 29 August	16:00	Aula	PA
Mirandola, Chiara	1st author	A-0594	Sunday, 1 September	9:00	0.89	T75
Mirandola, Chiara	Co-author	A-0045	Friday, 30 August	9:00	0.89	T1S3
Misirlisoy, Mine	1st author	A-0546	Friday, 30 August	11:00	Aula	PB
Misirlisoy, Mine	Co-author	A-0557	Saturday, 31 August	11:00	Aula	PC
Miskovich, Tara	Co-author	A-0050	Sunday, 1 September	9:00	0.83	T7S2
Mitchell, Thomas	1st author	A-0439	Saturday, 31 August	13:30	0.100a	T54
Miyoshi, Kiyofumi	1st author	A-0278	Saturday, 31 August	11:00	Aula	PC
Moeller, Birte	1st author	A-0274	Saturday, 31 August	16:00	0.87	T65
Moeller, Korbinian	Co-author	A-0352	Thursday, 29 August	16:00	Aula	PA
Moeller, Korbinian	Co-author	A-0413	Thursday, 29 August	16:00	Aula	PA
Moeller, Korbinian	Co-author	A-0338	Saturday, 31 August	11:00	Aula	PC
Mohr, C.	Co-author	A-0417	Thursday, 29 August	16:00	Aula	PA
Mohr, C.	Co-author	A-0469	Saturday, 31 August	11:00	Aula	PC
Mohr, Christine	Co-author	A-0510	Friday, 30 August	11:00	Aula	PB
Mohr, Christine	Co-author	A-0128	Friday, 30 August	16:00	0.99	T35
Moldovan, Cornelia	1st author	A-0432	Friday, 30 August	11:00	Aula	PB
Moldovan, Cornelia D.	Co-author	A-0319	Saturday, 31 August	13:30	0.81	T5S1
Molina, Maria Jesus Funes	Co-author	A-0566	Friday, 30 August	11:00	Aula	PB
Molinaro, Nicola	1st author	A-0746	Thursday, 29 August	16:00	Aula	PA
Molinaro, Nicola	Co-author	A-0754	Thursday, 29 August	16:00	Aula	PA
Molnar, Monika	1st author	A-0436	Saturday, 31 August	16:00	0.100b	T62
Monaghan, Padraic	Co-author	A-0450	Friday, 30 August	11:00	Aula	PB
Monaghan, Padraic	Co-author	A-0449	Saturday, 31 August	16:00	0.100a	T61
Monsell, Stephen	Co-author	A-0581	Friday, 30 August	9:00	1.79	T16
Monsell, Stephen	Co-author	A-0618	Friday, 30 August	9:00	1.79	T16
Monsell, Stephen	Co-author	A-0412	Friday, 30 August	13:30	0.79	T27
Monsell, Stephen	Co-author	A-0662	Friday, 30 August	13:30	0.79	T27
Montagnini, Anna	Co-author	A-0730	Thursday, 29 August	16:00	Aula	PA
Montagnini, Anna	Co-author	A-0305	Saturday, 31 August	16:00	0.83	T6S1
Mon-Williams, Mark	Co-author	A-0118	Thursday, 29 August	16:00	Aula	PA
Mon-Williams, Mark	Co-author	A-0317	Saturday, 31 August	9:00	0.100b	T44
Morais, José	Co-author	A-0072	Saturday, 31 August	11:00	Aula	PC
Morais, José	Co-author	A-0543	Saturday, 31 August	11:00	Aula	PC
Morales, Julia	1st author	A-0388	Saturday, 31 August	11:00	Aula	PC
Morales, Julia	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Morales, Luis	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Moran, Tal	1st author	A-0276	Friday, 30 August	11:00	Aula	PB
Moreno, E.	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31
Moreno, Ruben	Co-author	A-0244	Friday, 30 August	11:00	Aula	PB
Moreno-Ríos, Sergio	Co-author	A-0728	Saturday, 31 August	16:00	0.89	T66
Morgan, J. L.	Co-author	A-0538	Friday, 30 August	11:00	Aula	PB

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Name	Role	AbsNo	Date	Time	Room	Sect
Morganti, Francesca	1st author	A-0745	Saturday, 31 August	11:00	Aula	PC
Morisseau, Tiffany	1st author	A-0612	Thursday, 29 August	16:00	Aula	PA
Morsanyi, Kinga	Co-author	A-0081	Saturday, 31 August	11:00	Aula	PC
Moulin, Chris	Co-author	A-0175	Friday, 30 August	11:00	Aula	PB
Moulin, Chris J.A.	Co-author	A-0147	Saturday, 31 August	11:00	Aula	PC
Mousikou, Betty	1st author	A-0198	Friday, 30 August	16:00	0.87	T32
Moyal, Natali	1st author	A-0304	Thursday, 29 August	16:00	Aula	PA
Mrazek, Michael	Co-author	A-0629	Friday, 30 August	11:00	Aula	PB
Mrazek, Michael	Co-author	A-0628	Friday, 30 August	13:30	0.100b	T25
Muffato, Veronica	Co-author	A-0268	Saturday, 31 August	11:00	Aula	PC
Muhle-Karbe, Paul	Co-author	A-0415	Saturday, 31 August	9:00	0.83	T4S2
Mulatti, Claudio	Co-author	A-0063	Saturday, 31 August	11:00	Aula	PC
Mulder, Martijn J.	1st author	A-0371	Friday, 30 August	13:30	Harmonia	T2S1
Mulligan, Neil W.	Co-author	A-0166	Saturday, 31 August	13:30	0.79	T53
Muñetón, Mercedes	Co-author	A-0385	Saturday, 31 August	11:00	Aula	PC
Murphy, Sandra	1st author	A-0322	Friday, 30 August	16:00	0.100b	T36
Mussi, Davide R.	1st author	A-0478	Thursday, 29 August	16:00	Aula	PA
Muszynski, Marek	Co-author	A-0701	Thursday, 29 August	16:00	Aula	PA
Muszyński, Marek	1st author	A-0697	Friday, 30 August	11:00	Aula	PB
Mutaf, Belde	1st author	A-0138	Thursday, 29 August	16:00	Aula	PA
Müller, Barbara C. N.	1st author	A-0451	Friday, 30 August	11:00	Aula	PB
Müller, Hermann J.	Co-author	A-0136	Saturday, 31 August	11:00	Aula	PC
Müller, Hermann J.	Co-author	A-0163	Friday, 30 August	16:00	0.100b	T36
Müller, Matthias M.	Co-author	A-0031	Thursday, 29 August	16:00	Aula	PA
Mykland, Aurora B.	Co-author	A-0583	Friday, 30 August	16:00	0.81	T3S3
Nachshon, Meiran	Co-author	A-0273	Thursday, 29 August	16:00	Aula	PA
Nadal, Marcos	Co-author	A-0676	Saturday, 31 August	11:00	Aula	PC
Nadeem, Masood	1st author	A-0658	Friday, 30 August	11:00	Aula	PB
Nagy, Péter	Co-author	A-0536	Friday, 30 August	11:00	Aula	PB
Nakayama, Masataka	1st author	A-0400	Friday, 30 August	11:00	Aula	PB
Nardi, Daniele	1st author	A-0254	Thursday, 29 August	16:00	Aula	PA
Nardi, Daniele	Co-author	A-0574	Friday, 30 August	11:00	Aula	PB
Nardo, Davide	Co-author	A-0116	Saturday, 31 August	11:00	Aula	PC
Narimoto, T	1st author	A-0621	Sunday, 1 September	9:00	0.89	T75
Narkiss, Alona	1st author	A-0018	Thursday, 29 August	16:00	Aula	PA
Nath, Swiya	1st author	A-0507	Saturday, 31 August	11:00	Aula	PC
Navarra, Jordi	1st author	A-0562	Friday, 30 August	11:00	Aula	PB
Navarra, Jordi	Co-author	A-0244	Friday, 30 August	11:00	Aula	PB
Navarrete, Eduardo	Co-author	A-0350	Friday, 30 August	11:00	Aula	PB
Navarrete, Eduardo	Co-author	A-0702	Saturday, 31 August	11:00	Aula	PC
Necka, Edward	Co-author	A-0697	Friday, 30 August	11:00	Aula	PB
Necka, Edward	Co-author	A-0310	Thursday, 29 August	16:00	Aula	PA
Necka, Edward	Co-author	A-0491	Friday, 30 August	11:00	Aula	PB
Necka, Edward	Co-author	A-0541	Friday, 30 August	11:00	Aula	PB

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Name	Role	AbsNo	Date	Time	Room	Sect
Négele, Rita	Co-author	A-0757	Friday, 30 August	9:00	0.99	T14
Nemeth, Dezso	1st author	A-0558	Friday, 30 August	9:00	0.81	T1S2
Nemeth, Dezso	Symposium Chair	-	Friday, 30 August	9:00	0.81	T1S2
Nemeth, Dezso	Co-author	A-0518	Thursday, 29 August	16:00	Aula	PA
Németh, Renáta	1st author	A-0117	Thursday, 29 August	16:00	Aula	PA
Neroni, Maria A.	Co-author	A-0526	Sunday, 1 September	9:00	0.89	T75
Nevo, Michal	1st author	A-0195	Thursday, 29 August	16:00	Aula	PA
Nickels, Lyndsey	Co-author	A-0563	Saturday, 31 August	11:00	Aula	PC
Nicolay, Anne-Catherine	Co-author	A-0500	Friday, 30 August	16:00	0.89	T31
Niedeggen, M.	1st author	A-0506	Saturday, 31 August	16:00	0.81	T6S2
Nielsen, Carsten S.	1st author	A-0615	Sunday, 1 September	9:00	0.87	T74
Nihoul, Julie	Co-author	A-0363	Thursday, 29 August	16:00	Aula	PA
Nilsson, L-G.	Co-author	A-0743	Friday, 30 August	16:00	0.79	T3S2
Ning, Li-Hsin	1st author	A-0515	Saturday, 31 August	11:00	Aula	PC
Niven, Elaine	Co-author	A-0115	Saturday, 31 August	13:30	Harmonia	T5S4
Nobes, Alison	Co-author	A-0507	Saturday, 31 August	11:00	Aula	PC
Nobes, Alison	Co-author	A-0727	Friday, 30 August	9:00	0.100a	T15
Noël, Marie-Pascale	Co-author	A-0551	Friday, 30 August	9:00	0.100a	T15
Nogué, Roser Ribosa	Co-author	A-0423	Friday, 30 August	16:00	0.89	T31
Norbury, Courtenay	Co-author	A-0061	Thursday, 29 August	16:00	Aula	PA
Norman, Elisabeth	1st author	A-0192	Friday, 30 August	16:00	0.83	T3S1
Norris, Dennis	Co-author	A-0203	Saturday, 31 August	9:00	0.81	T4S3
Nosal, Czesław S.	Co-author	A-0433	Thursday, 29 August	16:00	Aula	PA
Notebaert, Wim	1st author	A-0076	Sunday, 1 September	9:00	0.81	T7S1
Notebaert, Wim	Symposium Chair	-	Sunday, 1 September	9:00	0.81	T7S1
Notebaert, Wim	Co-author	A-0077	Thursday, 29 August	16:00	Aula	PA
Notebaert, Wim	Co-author	A-0101	Saturday, 31 August	11:00	Aula	PC
Notebaert, Wim	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Notebaert, Wim	Co-author	A-0464	Saturday, 31 August	13:30	0.89	T55
Notebaert, Wim	Co-author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Nouwens, S.	1st author	A-0496	Saturday, 31 August	11:00	Aula	PC
Noveck, Ira	1st author	A-0753	Friday, 30 August	13:30	0.81	T2S2
Noveck, Ira	Co-author	A-0612	Thursday, 29 August	16:00	Aula	PA
Nozaki, Yuki	1st author	A-0043	Friday, 30 August	11:00	Aula	PB
Nozaki, Yuki	Co-author	A-0400	Friday, 30 August	11:00	Aula	PB
Nuerk, Hans-Christoph	Co-author	A-0413	Thursday, 29 August	16:00	Aula	PA
Nuerk, Hans-Christoph	Co-author	A-0352	Thursday, 29 August	16:00	Aula	PA
Nuerk, Hans-Christoph	Co-author	A-0338	Saturday, 31 August	11:00	Aula	PC
Oberauer, Klaus	1st author	A-0153	Saturday, 31 August	13:30	0.79	T53
Oberauer, Klaus	Co-author	A-0152	Friday, 30 August	9:00	0.89	T1S3
Oberauer, Klaus	Co-author	A-0238	Saturday, 31 August	9:00	0.89	T43
Oberauer, Klaus	Co-author	A-0703	Saturday, 31 August	9:00	0.89	T43
Oberauer, Klaus	Co-author	A-0236	Saturday, 31 August	13:30	0.79	T53
Oberem, Josefa	Co-author	A-0709	Friday, 30 August	9:00	1.79	T16

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Name	Role	AbsNo	Date	Time	Room	Sect
Obleser, Jonas	Co-author	A-0375	Friday, 30 August	13:30	0.83	T2S3
O'Connor, Akira R.	Co-author	A-0147	Saturday, 31 August	11:00	Aula	PC
Oftinger, Anne-Laure	1st author	A-0214	Saturday, 31 August	9:00	0.100b	T44
Oganian, Yulia	1st author	A-0441	Thursday, 29 August	16:00	Aula	PA
Okanda, Mako	1st author	A-0598	Friday, 30 August	11:00	Aula	PB
Okon-Singer, Hadas	Symposium Chair	-	Sunday, 1 September	9:00	0.83	T7S2
Oliveira, J.	Co-author	A-0009	Thursday, 29 August	16:00	Aula	PA
Oliveira-Carvalho, S.	Co-author	A-0597	Friday, 30 August	11:00	Aula	PB
Olivetti, Marta	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Olivetti-Belardinelli, Marta	Co-author	A-0254	Thursday, 29 August	16:00	Aula	PA
Olszanowski, Michal	1st author	A-0713	Saturday, 31 August	16:00	0.99	T64
Olszewska, Justyna	1st author	A-0204	Thursday, 29 August	16:00	Aula	PA
Olszewska, Justyna	1st author	A-0122	Saturday, 31 August	11:00	Aula	PC
Olszewska, Justyna	1st author	A-0119	Saturday, 31 August	13:30	0.79	T53
Oner, Sezin	1st author	A-0459	Sunday, 1 September	9:00	0.89	T75
Oostendorp, Anna K.	Co-author	A-0451	Friday, 30 August	11:00	Aula	PB
Oppenheim, C.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Oppenheim, Catherine	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Orban, Sarah	Co-author	A-0700	Friday, 30 August	16:00	0.89	T31
Oren, Shiran	1st author	A-0528	Friday, 30 August	11:00	Aula	PB
Orlov, A. M.	Co-author	A-0405	Saturday, 31 August	16:00	0.99	T64
Orsi, Gergely	Co-author	A-0773	Saturday, 31 August	11:00	Aula	PC
Ortega-Castro, N.	1st author	A-0258	Sunday, 1 September	9:00	0.100a	T72
Ortiz, Rosario	Co-author	A-0385	Saturday, 31 August	11:00	Aula	PC
Osaka, Naoyuki	Co-author	A-0460	Thursday, 29 August	16:00	Aula	PA
Osiurak	Co-author	A-0648	Friday, 30 August	16:00	0.100a	T33
Oswald, Margit E.	Co-author	A-0720	Saturday, 31 August	11:00	Aula	PC
Ouellet, Marc	Co-author	A-0566	Friday, 30 August	11:00	Aula	PB
Ouimette, Brett	Co-author	A-0629	Friday, 30 August	11:00	Aula	PB
Ouimette, Brett	Co-author	A-0628	Friday, 30 August	13:30	0.100b	T25
Ozgen, Buket	1st author	A-0570	Friday, 30 August	16:00	0.99	T35
Padilla, Francisca	Co-author	A-0426	Friday, 30 August	11:00	Aula	PB
Padilla, Francisca	Co-author	A-0388	Saturday, 31 August	11:00	Aula	PC
Padilla, Francisca	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Pajkossy, Péter	1st author	A-0688	Friday, 30 August	11:00	Aula	PB
Pajkossy, Péter	Co-author	A-0633	Saturday, 31 August	9:00	0.89	T43
Pakhomov, Serguei VS	1st author	A-0619	Sunday, 1 September	9:00	0.79	T7S3
Palladino, Paola	Symposium Chair	-	Friday, 30 August	9:00	0.89	T1S3
Palladino, Paola	Co-author	A-0323	Friday, 30 August	9:00	0.89	T1S3
Palladino, Paola	Co-author	A-0467	Friday, 30 August	9:00	0.89	T1S3
Palumbo, Letizia	1st author	A-0395	Thursday, 29 August	16:00	Aula	PA
Paluszkiewicz, Katarzyna	Co-author	A-0062	Thursday, 29 August	16:00	Aula	PA
Panis	Co-author	A-0534	Saturday, 31 August	9:00	1.79	T42
Pansky, Ainat	1st author	A-0048	Friday, 30 August	16:00	0.79	T3S2

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Name	Role	AbsNo	Date	Time	Room	Sect
Pansky, Ainat	Symposium Chair	-	Friday, 30 August	16:00	0.79	T3S2
Pantelides, Stephanie N.	1st author	A-0242	Thursday, 29 August	16:00	Aula	PA
Paolieri, Daniela	1st author	A-0426	Friday, 30 August	11:00	Aula	PB
Paolieri, Daniela	Co-author	A-0299	Thursday, 29 August	16:00	Aula	PA
Papagno, Costanza	Co-author	A-0660	Friday, 30 August	11:00	Aula	PB
Papp, P.	1st author	A-0739	Friday, 30 August	9:00	0.99	T14
Papp, Peter	Co-author	A-0764	Thursday, 29 August	16:00	Aula	PA
Papp, Péter	Co-author	A-0773	Saturday, 31 August	11:00	Aula	PC
Parise, Eugenio	Co-author	A-0399	Thursday, 29 August	16:00	Aula	PA
Parkinson, Mary	1st author	A-0160	Saturday, 31 August	11:00	Aula	PC
Parmentier, Fabrice B. R.	1st author	A-0075	Sunday, 1 September	9:00	0.81	T7S1
Parra, Mario	Co-author	A-0115	Saturday, 31 August	13:30	Harmonia	T5S4
Parra, Mario A.	Co-author	A-0067	Thursday, 29 August	16:00	Aula	PA
Parveen, Abida	Co-author	A-0658	Friday, 30 August	11:00	Aula	PB
Pasquali, Antoine	Co-author	A-0420	Friday, 30 August	9:00	0.81	T1S2
Pasqualotti, Léa	1st author	A-0171	Friday, 30 August	11:00	Aula	PB
Patel, Harshal	Co-author	A-0504	Thursday, 29 August	16:00	Aula	PA
Patrick, Bonin	1st author	A-0183	Thursday, 29 August	16:00	Aula	PA
Patrick, John	Co-author	A-0378	Saturday, 31 August	11:00	Aula	PC
Patrick, Lemaire	1st author	A-0740	Saturday, 31 August	13:30	0.89	T55
Patterson, Michael D.	1st author	A-0527	Saturday, 31 August	16:00	0.89	T66
Paulewicz, Borysław	1st author	A-0684	Friday, 30 August	16:00	0.99	T35
Paulewicz, Borysław	Co-author	A-0541	Friday, 30 August	11:00	Aula	PB
Pauli, Paul	Co-author	A-0094	Saturday, 31 August	16:00	0.81	T6S2
Paunović, Aleksandar	Co-author	A-0510	Friday, 30 August	11:00	Aula	PB
Pavan, Giorgio	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Payoux, Mélanie	1st author	A-0100	Friday, 30 August	11:00	Aula	PB
Paz-Alonso, Pedro	Co-author	A-0746	Thursday, 29 August	16:00	Aula	PA
Paz-Baruch, N.	1st author	A-0074	Saturday, 31 August	11:00	Aula	PC
Pearson, D. G.	Co-author	A-0428	Friday, 30 August	11:00	Aula	PB
Pêcher, Christelle	1st author	A-0108	Saturday, 31 August	11:00	Aula	PC
Pêcher, Christelle	Co-author	A-0172	Saturday, 31 August	11:00	Aula	PC
Pecher, Diane	1st author	A-0734	Friday, 30 August	13:30	0.89	T23
Pecher, Diane	Co-author	A-0732	Sunday, 1 September	9:00	0.81	T7S1
Pech-Georgel, C	Co-author	A-0384	Thursday, 29 August	16:00	Aula	PA
Pecoriello, L.	1st author	A-0707	Thursday, 29 August	16:00	Aula	PA
Peereman, Ronald	1st author	A-0579	Friday, 30 August	11:00	Aula	PB
Peeters, D.	1st author	A-0685	Friday, 30 August	11:00	Aula	PB
Peeters, Ilse	Co-author	A-0057	Friday, 30 August	11:00	Aula	PB
Pelegrina, S.	1st author	A-0330	Friday, 30 August	9:00	0.89	T1S3
Pellicano, Antonello	1st author	A-0504	Thursday, 29 August	16:00	Aula	PA
Pensaert, Thomas	1st author	A-0517	Saturday, 31 August	13:30	1.79	T51
Perçinel, İpek	Co-author	A-0578	Saturday, 31 August	11:00	Aula	PC
Perea, Manuel	Symposium Chair	-	Saturday, 31 August	9:00	0.81	T4S3

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Name	Role	AbsNo	Date	Time	Room	Sect
Perea, Manuel	Co-author	A-0607	Friday, 30 August	11:00	Aula	PB
Perea, Manuel	Co-author	A-0622	Friday, 30 August	11:00	Aula	PB
Perea, Manuel	Co-author	A-0494	Saturday, 31 August	9:00	0.81	T4S3
Pereg, Maayan	Co-author	A-0601	Saturday, 31 August	11:00	Aula	PC
Peremen, Ziv	1st author	A-0647	Saturday, 31 August	9:00	1.79	T42
Peressotti, Francesca	1st author	A-0702	Saturday, 31 August	11:00	Aula	PC
Peressotti, Francesca	Co-author	A-0542	Thursday, 29 August	16:00	Aula	PA
Peressotti, Francesca	Co-author	A-0350	Friday, 30 August	11:00	Aula	PB
Pérez, Ana	1st author	A-0367	Saturday, 31 August	11:00	Aula	PC
Perfect, Tim	Co-author	A-0014	Saturday, 31 August	11:00	Aula	PC
Pergandi, Jean-Marie	Co-author	A-0593	Friday, 30 August	11:00	Aula	PB
Perlaki, Gábor	Co-author	A-0773	Saturday, 31 August	11:00	Aula	PC
Perre, L.	Co-author	A-0228	Thursday, 29 August	16:00	Aula	PA
Perriard, Benoît	1st author	A-0215	Friday, 30 August	16:00	0.89	T31
Perseguers, Marie-Noëlle	Co-author	A-0128	Friday, 30 August	16:00	0.99	T35
Pertzov, Yoni	1st author	A-0282	Saturday, 31 August	13:30	Harmonia	T5S4
Pesciarelli, Francesca	Co-author	A-0292	Friday, 30 August	13:30	1.79	T21
Pesenti, Mauro	Co-author	A-0363	Thursday, 29 August	16:00	Aula	PA
Petersen, Anders	Co-author	A-0233	Saturday, 31 August	16:00	0.87	T65
Petersen, Anders	Co-author	A-0615	Sunday, 1 September	9:00	0.87	T74
Pétervári, Judit	1st author	A-0724	Thursday, 29 August	16:00	Aula	PA
Petrazzini, Maria Elena Miletto	Co-author	A-0068	Saturday, 31 August	9:00	0.79	T4S1
Petrova, Anna	1st author	A-0350	Friday, 30 August	11:00	Aula	PB
Pezzulo, Giovanni	Co-author	A-0102	Thursday, 29 August	16:00	Aula	PA
Philipp, Andrea M.	Co-author	A-0223	Saturday, 31 August	11:00	Aula	PC
Phillips, I. H.	Co-author	A-0428	Friday, 30 August	11:00	Aula	PB
Pick, H.	Co-author	A-0134	Saturday, 31 August	13:30	0.89	T55
Pickering, Martin	Co-author	A-0253	Thursday, 29 August	16:00	Aula	PA
Pieczkolan, Aleksandra	1st author	A-0182	Saturday, 31 August	9:00	0.87	T45
Pineda, David	Co-author	A-0164	Friday, 30 August	13:30	0.79	T27
Pinet, Svetlana	1st author	A-0422	Thursday, 29 August	16:00	Aula	PA
Piolino, P.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Piolino, Pascale	Co-author	A-0024	Saturday, 31 August	11:00	Aula	PC
Pizzimenti, Alessia	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Pléh, Csaba	Co-author	A-0549	Saturday, 31 August	11:00	Aula	PC
Plessow, Franziska	1st author	A-0511	Friday, 30 August	13:30	Harmonia	T2S1
Pobric, Gorana	Co-author	A-0133	Saturday, 31 August	11:00	Aula	PC
Pohl, Carsten	1st author	A-0094	Saturday, 31 August	16:00	0.81	T6S2
Pomiechowska, Barbara	1st author	A-0699	Saturday, 31 August	11:00	Aula	PC
Poncelet, Martine	1st author	A-0500	Friday, 30 August	16:00	0.89	T31
Poncelet, Martine	Co-author	A-0700	Friday, 30 August	16:00	0.89	T31
Popławska, Agnieszka	Co-author	A-0677	Sunday, 1 September	9:00	0.87	T74
Popławska, Agnieszka	1st author	A-0610	Friday, 30 August	16:00	1.79	T34
Popławskarn, Agnieszka	Co-author	A-0200	Friday, 30 August	16:00	1.79	T34

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Name	Role	AbsNo	Date	Time	Room	Sect
Portch, Emma	1st author	A-0245	Saturday, 31 August	11:00	Aula	PC
Postal, Virginie	1st author	A-0269	Saturday, 31 August	11:00	Aula	PC
Pota, S.	1st author	A-0708	Thursday, 29 August	16:00	Aula	PA
Pourtois, Gilles	Co-author	A-0287	Thursday, 29 August	16:00	Aula	PA
Powell, Anna	Co-author	A-0061	Thursday, 29 August	16:00	Aula	PA
Poyarekar, Siddhi	Co-author	A-0188	Friday, 30 August	13:30	0.99	T24
Preissmann, Delphine	Co-author	A-0475	Friday, 30 August	11:00	Aula	PB
Price, Mark C.	1st author	A-0583	Friday, 30 August	16:00	0.81	T3S3
Primativo, Silvia	Co-author	A-0333	Friday, 30 August	13:30	0.100b	T25
Primi, Caterina	1st author	A-0081	Saturday, 31 August	11:00	Aula	PC
Prinz, Wolfgang	Co-author	A-0055	Saturday, 31 August	13:30	0.83	T5S3
Prior, Anat	1st author	A-0547	Friday, 30 August	11:00	Aula	PB
Prior, Anat	1st author	A-0544	Saturday, 31 August	16:00	0.100b	T62
Prosser, Aaron	Co-author	A-0163	Friday, 30 August	16:00	0.100b	T36
Protopapas, Athanassios	Co-author	A-0609	Friday, 30 August	11:00	Aula	PB
Protopapas, Athanassios	Co-author	A-0248	Saturday, 31 August	16:00	0.89	T66
Pulvermuller, Friedemann	Co-author	A-0191	Friday, 30 August	16:00	0.87	T32
Qi, Yuejie	Co-author	A-0721	Saturday, 31 August	16:00	0.100b	T62
Quak, Michel	1st author	A-0355	Friday, 30 August	13:30	0.89	T23
Quelhas, Ana Cristina	Co-author	A-0341	Sunday, 1 September	9:00	0.100a	T72
Quémart, P.	Co-author	A-0640	Sunday, 1 September	9:00	1.79	T71
Quinn, Gerry	Co-author	A-0621	Sunday, 1 September	9:00	0.89	T75
Rac, Rachel	1st author	A-0524	Saturday, 31 August	11:00	Aula	PC
Rácz, Anna	1st author	A-0549	Saturday, 31 August	11:00	Aula	PC
Rácz, Anna	Co-author	A-0580	Thursday, 29 August	16:00	Aula	PA
Racsmány, Mihály	1st author	A-0633	Saturday, 31 August	9:00	0.89	T43
Racsmány, Mihály	Co-author	A-0442	Thursday, 29 August	16:00	Aula	PA
Racsmány, Mihály	Co-author	A-0688	Friday, 30 August	11:00	Aula	PB
Racsmány, Mihály	Co-author	A-0493	Saturday, 31 August	9:00	0.89	T43
Racsmány, Mihály	Co-author	A-0644	Saturday, 31 August	9:00	0.89	T43
Ragó, Anett	Co-author	A-0714	Friday, 30 August	11:00	Aula	PB
Rahona, J.	Co-author	A-0755	Thursday, 29 August	16:00	Aula	PA
Ralph, Matthew A. Lambon	Co-author	A-0133	Saturday, 31 August	11:00	Aula	PC
Ramenzoni, V. C.	1st author	A-0229	Saturday, 31 August	11:00	Aula	PC
Ranzini, Mariagrazia	Co-author	A-0683	Friday, 30 August	11:00	Aula	PB
Raposo, Ana	Co-author	A-0219	Friday, 30 August	11:00	Aula	PB
Rappaport, M.	Co-author	A-0134	Saturday, 31 August	13:30	0.89	T55
Rastle, Kathleen	Co-author	A-0516	Friday, 30 August	11:00	Aula	PB
Rastle, Kathleen	Co-author	A-0198	Friday, 30 August	16:00	0.87	T32
Rastle, Kathleen	Co-author	A-0056	Saturday, 31 August	9:00	0.100a	T41
Ratcliff, Roger	Co-author	A-0371	Friday, 30 August	13:30	Harmonia	T2S1
Ratcliff, Roger	Co-author	A-0207	Saturday, 31 August	16:00	0.83	T6S1
Ratilainen, Henriikka	Co-author	A-0389	Friday, 30 August	11:00	Aula	PB
Rauber, Andréia	Co-author	A-0129	Saturday, 31 August	13:30	0.81	T5S1

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Name	Role	AbsNo	Date	Time	Room	Sect
Raz, Gal	Co-author	A-0752	Sunday, 1 September	9:00	0.83	T7S2
Reber, Paul J.	Co-author	A-0196	Sunday, 1 September	9:00	0.79	T7S3
Redel, Petra	Co-author	A-0555	Saturday, 31 August	9:00	0.100b	T44
Redel, Petra	Co-author	A-0471	Sunday, 1 September	9:00	0.87	T74
Regev, Meiran Nachshon Shirley	1st author	A-0521	Saturday, 31 August	11:00	Aula	PC
Reimer, Christina	1st author	A-0324	Friday, 30 August	11:00	Aula	PB
Reiterer, Susanne	Co-author	A-0011	Saturday, 31 August	11:00	Aula	PC
Reyes, Robert A.	1st author	A-0711	Friday, 30 August	13:30	0.99	T24
Reyes, Robert A.	Co-author	A-0620	Friday, 30 August	13:30	0.99	T24
Renner, Elizabeth	1st author	A-0370	Friday, 30 August	13:30	0.99	T24
Rerko, Laura	1st author	A-0236	Saturday, 31 August	13:30	0.79	T53
Rerko, Laura	Co-author	A-0238	Saturday, 31 August	9:00	0.89	T43
Reuss, Heiko	1st author	A-0167	Saturday, 31 August	16:00	0.81	T6S2
Reuss, Heiko	Symposium Chair	-	Saturday, 31 August	16:00	0.81	T6S2
Reuter-Lorenz, Patricia A.	Co-author	A-0204	Thursday, 29 August	16:00	Aula	PA
Rey, Amandine	1st author	A-0026	Thursday, 29 August	16:00	Aula	PA
Reynvoet, Bert	1st author	A-0126	Saturday, 31 August	9:00	0.79	T4S1
Reynvoet, Bert	Co-author	A-0069	Thursday, 29 August	16:00	Aula	PA
Reynvoet, Bert	Co-author	A-0091	Thursday, 29 August	16:00	Aula	PA
Reynvoet, Bert	Co-author	A-0138	Thursday, 29 August	16:00	Aula	PA
Reynvoet, Bert	Co-author	A-0020	Friday, 30 August	11:00	Aula	PB
Reynvoet, Bert	Co-author	A-0446	Friday, 30 August	11:00	Aula	PB
Rhodes, Stephen	Co-author	A-0115	Saturday, 31 August	13:30	Harmonia	T5S4
Rhodes, Stephen P.	1st author	A-0067	Thursday, 29 August	16:00	Aula	PA
Riccio, Angela	1st author	A-0735	Friday, 30 August	11:00	Aula	PB
Ridderinkhof, K Richard	Co-author	A-0207	Saturday, 31 August	16:00	0.83	T6S1
Ridderinkhof, Richard	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Ridderinkhof, Richard	Co-author	A-0643	Friday, 30 August	16:00	0.100a	T33
Riddoch, Jane	Co-author	A-0288	Saturday, 31 August	13:30	Harmonia	T5S4
Riggio, Lucia	Co-author	A-0478	Thursday, 29 August	16:00	Aula	PA
Rigoni, Davide	1st author	A-0410	Friday, 30 August	16:00	0.100a	T33
Rinaldi, Luca	1st author	A-0663	Friday, 30 August	11:00	Aula	PB
Ristic, J.	Co-author	A-0434	Friday, 30 August	11:00	Aula	PB
Ristic, Jelena	Co-author	A-0639	Saturday, 31 August	11:00	Aula	PC
Rivera, Daniel	1st author	A-0303	Saturday, 31 August	11:00	Aula	PC
Robert	Co-author	A-0253	Thursday, 29 August	16:00	Aula	PA
Roberts, Felicia	1st author	A-0738	Sunday, 1 September	9:00	0.79	T7S3
Robidoux, Serje	1st author	A-0519	Friday, 30 August	16:00	0.87	T32
Robidoux, Serje	Co-author	A-0071	Saturday, 31 August	11:00	Aula	PC
Robotham, Julia	1st author	A-0199	Saturday, 31 August	11:00	Aula	PC
Roche, Kevin	1st author	A-0632	Thursday, 29 August	16:00	Aula	PA
Roczniowska, Marta	1st author	A-0200	Friday, 30 August	16:00	1.79	T34
Roczniowska, Marta	Co-author	A-0289	Friday, 30 August	9:00	0.100b	T13
Roczniowska, Marta	Co-author	A-0610	Friday, 30 August	16:00	1.79	T34

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Name	Role	AbsNo	Date	Time	Room	Sect
Roczniewska, Marta	Co-author	A-0677	Sunday, 1 September	9:00	0.87	T74
Rodrigo, Laura	Co-author	A-0737	Saturday, 31 August	13:30	0.81	T5S1
Roepstorff, Andreas	Co-author	A-0751	Thursday, 29 August	16:00	Aula	PA
Rojas-Barahona, Cristian A.	1st author	A-0728	Saturday, 31 August	16:00	0.89	T66
Rolke, B.	Co-author	A-0755	Thursday, 29 August	16:00	Aula	PA
Román, Patricia	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Romanska, A.M.	1st author	A-0736	Saturday, 31 August	11:00	Aula	PC
Roon, Kevin D.	Co-author	A-0198	Friday, 30 August	16:00	0.87	T32
Rosa, Eva	1st author	A-0607	Friday, 30 August	11:00	Aula	PB
Rosa, Pasquale A. Della	Co-author	A-0443	Friday, 30 August	13:30	0.87	T22
Rossi-Arnaud, Clelia	Co-author	A-0169	Saturday, 31 August	11:00	Aula	PC
Rossi-Arnaud, Clelia	Co-author	A-0166	Saturday, 31 August	13:30	0.79	T53
Rossier, Jérôme	Co-author	A-0060	Saturday, 31 August	11:00	Aula	PC
Rostrup, Egill	Co-author	A-0199	Saturday, 31 August	11:00	Aula	PC
Rothen, Nicolas	1st author	A-0472	Friday, 30 August	16:00	0.81	T3S3
Rothen, Nicolas	Symposium Chair	-	Friday, 30 August	16:00	0.81	T3S3
Roth-Hanania, Ronit	Co-author	A-0007	Saturday, 31 August	11:00	Aula	PC
Rouet, Jean-François	Co-author	A-0125	Saturday, 31 August	9:00	0.100a	T41
Roussel, Cedric	Co-author	A-0297	Saturday, 31 August	13:30	0.100b	T52
Rousset, Stéphane	Co-author	A-0440	Thursday, 29 August	16:00	Aula	PA
Rousset, Stéphane	Co-author	A-0213	Friday, 30 August	11:00	Aula	PB
Roux, Sebastien	1st author	A-0298	Saturday, 31 August	16:00	0.100a	T61
Rowe, Kelly	1st author	A-0629	Friday, 30 August	11:00	Aula	PB
Rowe, Kelly	1st author	A-0628	Friday, 30 August	13:30	0.100b	T25
Rptem, Avital	1st author	A-0659	Saturday, 31 August	11:00	Aula	PC
Rubichi, Sandro	Co-author	A-0542	Thursday, 29 August	16:00	Aula	PA
Rubínová, Eva	1st author	A-0706	Sunday, 1 September	9:00	0.89	T75
Rubinsten, Orly	Co-author	A-0547	Friday, 30 August	11:00	Aula	PB
Rubinsten, Orly	Co-author	A-0559	Saturday, 31 August	11:00	Aula	PC
Rueschemeyer, Shirley-Ann	1st author	A-0344	Friday, 30 August	13:30	0.81	T2S2
Rueschemeyer, Shirley-Ann	Symposium Chair	-	Friday, 30 August	13:30	0.81	T2S2
Ruge, Hannes	Co-author	A-0572	Friday, 30 August	11:00	Aula	PB
Ruggieri, Vezio	Co-author	A-0574	Friday, 30 August	11:00	Aula	PB
Ruiz, Manuel J.	1st author	A-0299	Thursday, 29 August	16:00	Aula	PA
Rusconi, Patrice	Co-author	A-0359	Friday, 30 August	9:00	0.100b	T13
Ruthruff, Eric	Co-author	A-0010	Friday, 30 August	16:00	0.99	T35
Ruys, Kirsten I.	Co-author	A-0409	Saturday, 31 August	9:00	0.83	T4S2
Saar, Rotem	1st author	A-0512	Friday, 30 August	11:00	Aula	PB
Sacchi, Simona	1st author	A-0359	Friday, 30 August	9:00	0.100b	T13
Saito, Satoru	Co-author	A-0400	Friday, 30 August	11:00	Aula	PB
Saito, Satoru	Co-author	A-0133	Saturday, 31 August	11:00	Aula	PC
Salgaro, Massimo	Co-author	A-0650	Saturday, 31 August	13:30	1.79	T51
Salillas, Elena	1st author	A-0671	Friday, 30 August	9:00	0.100a	T15
Salminen, Simo	Co-author	A-0389	Friday, 30 August	11:00	Aula	PB

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Name	Role	AbsNo	Date	Time	Room	Sect
Salminen, Tiina	1st author	A-0419	Saturday, 31 August	9:00	0.87	T45
Salminen, Tiina	Co-author	A-0555	Saturday, 31 August	9:00	0.100b	T44
Salner, Neta	1st author	A-0571	Friday, 30 August	11:00	Aula	PB
Salzer, Yael	Co-author	A-0372	Saturday, 31 August	11:00	Aula	PC
Samaha, Jason	Co-author	A-0252	Friday, 30 August	16:00	0.83	T3S1
Samson, Dana	Co-author	A-0552	Saturday, 31 August	11:00	Aula	PC
Samuel, Arthur	Co-author	A-0458	Saturday, 31 August	11:00	Aula	PC
San Anton, Estibaliz	1st author	A-0468	Thursday, 29 August	16:00	Aula	PA
Sanabria, Daniel	Co-author	A-0768	Friday, 30 August	9:00	0.83	T1S1
Sanchez, Daniel J.	1st author	A-0196	Sunday, 1 September	9:00	0.79	T7S3
Sánchez-Casa, Rosa	Co-author	A-0432	Friday, 30 August	11:00	Aula	PB
Sánchez-Casas, Rosa	Co-author	A-0318	Friday, 30 August	11:00	Aula	PB
SanMiguel, Iria	1st author	A-0168	Sunday, 1 September	9:00	0.81	T7S1
SanMiguel, Iria	Co-author	A-0477	Friday, 30 August	9:00	0.83	T1S1
Santangelo, Valerio	1st author	A-0111	Friday, 30 August	13:30	0.89	T23
Santangelo, Valerio	Co-author	A-0116	Saturday, 31 August	11:00	Aula	PC
Santos, Andreia	Co-author	A-0012	Saturday, 31 August	11:00	Aula	PC
Santos, José Miguel Rodríguez	Co-author	A-0484	Saturday, 31 August	13:30	0.100a	T54
Sanz, Montserrat	Co-author	A-0737	Saturday, 31 August	13:30	0.81	T5S1
Sapir, A.	Co-author	A-0038	Thursday, 29 August	16:00	Aula	PA
Sapir, A.	Co-author	A-0141	Thursday, 29 August	16:00	Aula	PA
Sarauli, Daniele	Co-author	A-0169	Saturday, 31 August	11:00	Aula	PC
Sarzynska, J.	Co-author	A-0653	Friday, 30 August	9:00	0.99	T14
Sarzyńska, Justyna	1st author	A-0310	Thursday, 29 August	16:00	Aula	PA
Sarzyńska, Justyna	Co-author	A-0491	Friday, 30 August	11:00	Aula	PB
Sasanguie, Delphine	1st author	A-0020	Friday, 30 August	11:00	Aula	PB
Sauli	Co-author	A-0534	Saturday, 31 August	9:00	1.79	T42
Saunders, Jo	Co-author	A-0097	Friday, 30 August	16:00	0.79	T3S2
Saupe, Katja	Co-author	A-0477	Friday, 30 August	9:00	0.83	T1S1
Sauval, K.	1st author	A-0228	Thursday, 29 August	16:00	Aula	PA
Savic, Andrej	Co-author	A-0682	Friday, 30 August	16:00	0.87	T32
Savic, Andrej	Co-author	A-0596	Saturday, 31 August	9:00	0.100a	T41
Sawamoto, Nobukatsu	Co-author	A-0460	Thursday, 29 August	16:00	Aula	PA
Scaltritti, Michele	1st author	A-0542	Thursday, 29 August	16:00	Aula	PA
Schade, Susann	Co-author	A-0511	Friday, 30 August	13:30	Harmonia	T2S1
Schaeken, Walter	Co-author	A-0114	Sunday, 1 September	9:00	0.100a	T72
Scharinger, Mathias	Co-author	A-0375	Friday, 30 August	13:30	0.83	T2S3
Scheil, Juliane	1st author	A-0237	Friday, 30 August	11:00	Aula	PB
Scheil, Juliane	Co-author	A-0235	Friday, 30 August	9:00	1.79	T16
Schettini, Francesca	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Schevernels, Hanne	1st author	A-0293	Thursday, 29 August	16:00	Aula	PA
Schevernels, Hanne	Co-author	A-0101	Saturday, 31 August	11:00	Aula	PC
Schiff, Sami	Co-author	A-0311	Friday, 30 August	11:00	Aula	PB
Schiller, Niels O.	Co-author	A-0307	Saturday, 31 August	11:00	Aula	PC

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Name	Role	AbsNo	Date	Time	Room	Sect
Schiltz, Christine	Co-author	A-0421	Friday, 30 August	11:00	Aula	PB
Schmalz, Xenia	1st author	A-0071	Saturday, 31 August	11:00	Aula	PC
Schmidt, James R.	1st author	A-0073	Friday, 30 August	16:00	1.79	T34
Schnell, Zsuzsanna	1st author	A-0058	Sunday, 1 September	9:00	0.100b	T73
Schooler, Jonathan	Co-author	A-0629	Friday, 30 August	11:00	Aula	PB
Schooler, Jonathan	Co-author	A-0628	Friday, 30 August	13:30	0.100b	T25
Schouppe, Nathalie	1st author	A-0470	Friday, 30 August	9:00	0.100b	T13
Schouppe, Nathalie	Co-author	A-0077	Thursday, 29 August	16:00	Aula	PA
Schouppe, Nathalie	Co-author	A-0605	Saturday, 31 August	13:30	0.87	T5S2
Schön, Daniele	1st author	A-0272	Friday, 30 August	9:00	0.83	T1S1
Schrag, Y.	1st author	A-0469	Saturday, 31 August	11:00	Aula	PC
Schröger, Erich	1st author	A-0477	Friday, 30 August	9:00	0.83	T1S1
Schröger, Erich	Co-author	A-0652	Friday, 30 August	11:00	Aula	PB
Schröger, Erich	Co-author	A-0181	Friday, 30 August	13:30	0.83	T2S3
Schubert, Torsten	1st author	A-0471	Sunday, 1 September	9:00	0.87	T74
Schubert, Torsten	Co-author	A-0324	Friday, 30 August	11:00	Aula	PB
Schubert, Torsten	Co-author	A-0136	Saturday, 31 August	11:00	Aula	PC
Schubert, Torsten	Co-author	A-0555	Saturday, 31 August	9:00	0.100b	T44
Schubert, Torsten	Co-author	A-0419	Saturday, 31 August	9:00	0.87	T45
Schuch, Stefanie	1st author	A-0418	Friday, 30 August	13:30	0.79	T27
Schuller, Anne-Marie	Co-author	A-0363	Thursday, 29 August	16:00	Aula	PA
Schunn, Christian D.	Co-author	A-0185	Friday, 30 August	9:00	0.100a	T15
Schwartz, B.	Co-author	A-0084	Saturday, 31 August	11:00	Aula	PC
Schwartz, Michael	1st author	A-0347	Friday, 30 August	9:00	0.83	T1S1
Sciarretta, Antonio	Co-author	A-0169	Saturday, 31 August	11:00	Aula	PC
Scorolli, Claudia	1st author	A-0602	Saturday, 31 August	11:00	Aula	PC
Scott, Ryan	1st author	A-0252	Friday, 30 August	16:00	0.83	T3S1
Sebanz, N.	Co-author	A-0229	Saturday, 31 August	11:00	Aula	PC
Sebanz, Natalie	1st author	A-0661	Saturday, 31 August	13:30	0.83	T5S3
Sebanz, Natalie	Co-author	A-0265	Friday, 30 August	11:00	Aula	PB
Sebanz, Natalie	Co-author	A-0476	Friday, 30 August	11:00	Aula	PB
Sebanz, Natalie	Co-author	A-0349	Friday, 30 August	13:30	0.81	T2S2
Sebastián-Gallés, Nuria	Co-author	A-0127	Saturday, 31 August	11:00	Aula	PC
Sebastián-Gallés, Nuria	Co-author	A-0078	Saturday, 31 August	13:30	1.79	T51
Sędek, Grzegorz	Co-author	A-0483	Saturday, 31 August	11:00	Aula	PC
Seeby, Helen	Co-author	A-0378	Saturday, 31 August	11:00	Aula	PC
Segal, Adva	1st author	A-0260	Saturday, 31 August	11:00	Aula	PC
Sellaro, Roberta	1st author	A-0383	Saturday, 31 August	13:30	0.83	T5S3
Sellaro, Roberta	Co-author	A-0548	Saturday, 31 August	11:00	Aula	PC
Sellaro, Roberta	Co-author	A-0314	Saturday, 31 August	13:30	0.83	T5S3
Servant, Mathieu	1st author	A-0305	Saturday, 31 August	16:00	0.83	T6S1
Severens, Els	1st author	A-0253	Thursday, 29 August	16:00	Aula	PA
Shachar, Ben-Meir	1st author	A-0036	Friday, 30 August	13:30	0.100a	T26
Shackman, Alexander J.	Co-author	A-0050	Sunday, 1 September	9:00	0.83	T7S2

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Shahar, Nitzan	1st author	A-0601	Saturday, 31 August	11:00	Aula	PC
Shakuf, Vered	1st author	A-0156	Thursday, 29 August	16:00	Aula	PA
Shalev, Hadar	Co-author	A-0512	Friday, 30 August	11:00	Aula	PB
Shao, Zeshu	1st author	A-0369	Friday, 30 August	11:00	Aula	PB
Sharon, Naparstek	1st author	A-0513	Saturday, 31 August	13:30	0.100a	T54
Shelef, Ilan	Co-author	A-0512	Friday, 30 August	11:00	Aula	PB
Shenberg, M.	Co-author	A-0134	Saturday, 31 August	13:30	0.89	T55
Sheridan, Rebecca	1st author	A-0118	Thursday, 29 August	16:00	Aula	PA
Shigemori, Masayoshi	Co-author	A-0725	Saturday, 31 August	11:00	Aula	PC
Shikhare, Sailee	1st author	A-0614	Saturday, 31 August	11:00	Aula	PC
Shpigelman, Lavie	Co-author	A-0752	Sunday, 1 September	9:00	0.83	T7S2
Siedlecka, Marta	1st author	A-0541	Friday, 30 August	11:00	Aula	PB
Sierro, G.	1st author	A-0417	Thursday, 29 August	16:00	Aula	PA
Sihinishyna, A. S.	Co-author	A-0715	Saturday, 31 August	11:00	Aula	PC
Sikström, Sverker	Co-author	A-0335	Saturday, 31 August	11:00	Aula	PC
Sikström, Sverker	Co-author	A-0665	Saturday, 31 August	11:00	Aula	PC
Siloé, Albouy	Co-author	A-0165	Saturday, 31 August	11:00	Aula	PC
Silva, A.	Co-author	A-0009	Thursday, 29 August	16:00	Aula	PA
Silva, Catarina	1st author	A-0012	Saturday, 31 August	11:00	Aula	PC
Silva, Da	Co-author	A-0532	Saturday, 31 August	9:00	1.79	T42
Silvetti, Massimo	Co-author	A-0201	Friday, 30 August	9:00	0.100b	T13
Silvetti, Massimo	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Simione, Luca	Co-author	A-0735	Friday, 30 August	11:00	Aula	PB
Simmank, Fabian	1st author	A-0705	Thursday, 29 August	16:00	Aula	PA
Simner, Jools	1st author	A-0139	Friday, 30 August	16:00	0.81	T3S3
Singer, Neomi	Co-author	A-0752	Sunday, 1 September	9:00	0.83	T7S2
Sixtus, Elena	Co-author	A-0553	Saturday, 31 August	13:30	0.100a	T54
Siyanova-Chanturia, Anna	Co-author	A-0292	Friday, 30 August	13:30	1.79	T21
Sjerps, Matthias J.	1st author	A-0351	Saturday, 31 August	13:30	1.79	T51
Smeets, Jeroen	Co-author	A-0632	Thursday, 29 August	16:00	Aula	PA
Smets, Karolien	1st author	A-0069	Thursday, 29 August	16:00	Aula	PA
Smets, Karolien	Co-author	A-0138	Thursday, 29 August	16:00	Aula	PA
Smets, Karolien	Co-author	A-0085	Saturday, 31 August	16:00	0.79	T6S3
Smigasiewicz, Kamila	Co-author	A-0047	Saturday, 31 August	16:00	0.81	T6S2
Smith, Alastair	1st author	A-0450	Friday, 30 August	11:00	Aula	PB
Smith, Alastair	1st author	A-0449	Saturday, 31 August	16:00	0.100a	T61
Smolen, Tomasz	1st author	A-0435	Thursday, 29 August	16:00	Aula	PA
Smulders, Fren T. Y.	Co-author	A-0290	Saturday, 31 August	11:00	Aula	PC
Smy, Victoria	1st author	A-0378	Saturday, 31 August	11:00	Aula	PC
Soares, A. P.	1st author	A-0009	Thursday, 29 August	16:00	Aula	PA
Soares, Ana Paula	Co-author	A-0129	Saturday, 31 August	13:30	0.81	T5S1
Soares, Isabel	Co-author	A-0012	Saturday, 31 August	11:00	Aula	PC
Sobków, Agata	1st author	A-0433	Thursday, 29 August	16:00	Aula	PA
Sobków, Agata	Co-author	A-0560	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Soetens, Eric	1st author	A-0057	Friday, 30 August	11:00	Aula	PB
Soetens, Eric	Co-author	A-0053	Saturday, 31 August	11:00	Aula	PC
Soetens, Eric	Co-author	A-0689	Friday, 30 August	16:00	1.79	T34
Soetens, Eric	Co-author	A-0054	Saturday, 31 August	13:30	0.89	T55
Soltesz, Fruzsina	Co-author	A-0727	Friday, 30 August	9:00	0.100a	T15
Soltesz, Peter	Co-author	A-0580	Thursday, 29 August	16:00	Aula	PA
Soltész, Péter	Co-author	A-0549	Saturday, 31 August	11:00	Aula	PC
Soto-Faraco, Salvador	Co-author	A-0381	Saturday, 31 August	11:00	Aula	PC
Soutschek, Alexander	1st author	A-0136	Saturday, 31 August	11:00	Aula	PC
Souza, Alessandra	1st author	A-0238	Saturday, 31 August	9:00	0.89	T43
Souza, Alessandra S.	Co-author	A-0236	Saturday, 31 August	13:30	0.79	T53
Spalek, Katharina	Co-author	A-0441	Thursday, 29 August	16:00	Aula	PA
Spataro, Pietro	1st author	A-0166	Saturday, 31 August	13:30	0.79	T53
Spataro, Pietro	Co-author	A-0169	Saturday, 31 August	11:00	Aula	PC
Sperduti, M.	Co-author	A-0704	Saturday, 31 August	11:00	Aula	PC
Sperduti, Marco	1st author	A-0024	Saturday, 31 August	11:00	Aula	PC
Sperduti, Marco	Co-author	A-0028	Sunday, 1 September	9:00	0.100b	T73
Spieser, Laure	1st author	A-0643	Friday, 30 August	16:00	0.100a	T33
Spieser, Laure	Co-author	A-0374	Thursday, 29 August	16:00	Aula	PA
Spinelli, E.	Co-author	A-0708	Thursday, 29 August	16:00	Aula	PA
Spotorno, Sara	1st author	A-0730	Thursday, 29 August	16:00	Aula	PA
Starrfelt, Randi	Co-author	A-0199	Saturday, 31 August	11:00	Aula	PC
Staub, B.	Co-author	A-0150	Thursday, 29 August	16:00	Aula	PA
Staub, Bérengère	1st author	A-0124	Thursday, 29 August	16:00	Aula	PA
steenbergen, bert	Co-author	A-0113	Friday, 30 August	13:30	0.87	T22
Stefanics, Gabor	1st author	A-0761	Friday, 30 August	13:30	0.83	T2S3
Steinwascher, Merle	1st author	A-0637	Saturday, 31 August	11:00	Aula	PC
Stekelenburg, Jeroen J.	1st author	A-0340	Friday, 30 August	13:30	0.83	T2S3
Stenlund, Tova	1st author	A-0321	Saturday, 31 August	11:00	Aula	PC
Stenzel, Anna	1st author	A-0314	Saturday, 31 August	13:30	0.83	T5S3
Stephan, Denise N.	Co-author	A-0342	Friday, 30 August	11:00	Aula	PB
Stephan, Denise Nadine	1st author	A-0140	Friday, 30 August	9:00	1.79	T16
Stephens, Joseph D.W.	Co-author	A-0645	Thursday, 29 August	16:00	Aula	PA
Sterczynski, Radoslaw	1st author	A-0677	Sunday, 1 September	9:00	0.87	T74
Sterczyński, Radosław	Co-author	A-0289	Friday, 30 August	9:00	0.100b	T13
Sterczyński, Radosław	Co-author	A-0200	Friday, 30 August	16:00	1.79	T34
Sterczyński, Radosław	Co-author	A-0610	Friday, 30 August	16:00	1.79	T34
Stevens, Michael	1st author	A-0668	Friday, 30 August	11:00	Aula	PB
Stevens, Michael	Co-author	A-0137	Saturday, 31 August	9:00	0.81	T4S3
Stevens, T.	1st author	A-0243	Friday, 30 August	9:00	0.100b	T13
Stevens, Tobias	Co-author	A-0313	Thursday, 29 August	16:00	Aula	PA
Stolk, Arjen	Co-author	A-0463	Friday, 30 August	13:30	0.81	T2S2
Stout, Daniel M.	Co-author	A-0050	Sunday, 1 September	9:00	0.83	T7S2
Strauss, Antje	Co-author	A-0375	Friday, 30 August	13:30	0.83	T2S3

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Name	Role	AbsNo	Date	Time	Room	Sect
Strijkers, Kristof	1st author	A-0191	Friday, 30 August	16:00	0.87	T32
Strobach, Tilo	1st author	A-0555	Saturday, 31 August	9:00	0.100b	T44
Strobach, Tilo	Co-author	A-0324	Friday, 30 August	11:00	Aula	PB
Strobach, Tilo	Co-author	A-0471	Sunday, 1 September	9:00	0.87	T74
Sturm, Walter	Co-author	A-0342	Friday, 30 August	11:00	Aula	PB
Suarez, Isabel	1st author	A-0164	Friday, 30 August	13:30	0.79	T27
Subiaul, Francys	Co-author	A-0370	Friday, 30 August	13:30	0.99	T24
Sucevic, Jelena	1st author	A-0682	Friday, 30 August	16:00	0.87	T32
Sui, Jie	Co-author	A-0770	Thursday, 29 August	18:30	Harmonia	K1
Suitner, Caterina	Co-author	A-0350	Friday, 30 August	11:00	Aula	PB
Sulpizio, Simone	Co-author	A-0350	Friday, 30 August	11:00	Aula	PB
Sulykos, István	1st author	A-0301	Thursday, 29 August	16:00	Aula	PA
Sulykos, István	Co-author	A-0291	Thursday, 29 August	16:00	Aula	PA
Sulykos, István	Co-author	A-0642	Saturday, 31 August	11:00	Aula	PC
Sulykos, István	Co-author	A-0162	Friday, 30 August	13:30	0.83	T2S3
Sundqvist, Max Larsson	Co-author	A-0348	Friday, 30 August	16:00	0.79	T3S2
Sung, Yao-Ting	Co-author	A-0670	Thursday, 29 August	16:00	Aula	PA
Sury, Dana	1st author	A-0559	Saturday, 31 August	11:00	Aula	PC
Sütçübaşı, Bernis	1st author	A-0691	Thursday, 29 August	16:00	Aula	PA
Sweklej, Joanna	1st author	A-0482	Sunday, 1 September	9:00	0.89	T75
Sweklej, Joanna	Co-author	A-0393	Saturday, 31 August	16:00	1.79	T63
Swerts, Marc	Co-author	A-0209	Friday, 30 August	13:30	0.81	T2S2
Sy, Jocelyn L.	Co-author	A-0427	Sunday, 1 September	9:00	0.87	T74
Szabó, Csaba	Co-author	A-0358	Thursday, 29 August	16:00	Aula	PA
Szabó, Eszter	1st author	A-0424	Friday, 30 August	11:00	Aula	PB
Szabó, Gergely	Co-author	A-0358	Thursday, 29 August	16:00	Aula	PA
Szabó, Marietta Kékes	1st author	A-0758	Thursday, 29 August	16:00	Aula	PA
Szalai, Gerda Margit	1st author	A-0760	Friday, 30 August	11:00	Aula	PB
Szalárdy, Orsolya	Co-author	A-0104	Thursday, 29 August	16:00	Aula	PA
Szalkai, Anna	Co-author	A-0758	Thursday, 29 August	16:00	Aula	PA
Szamotołska, Barbara	Co-author	A-0677	Sunday, 1 September	9:00	0.87	T74
Szatkowska, I.	Co-author	A-0653	Friday, 30 August	9:00	0.99	T14
Szczepanowski, Remigiusz	1st author	A-0590	Saturday, 31 August	11:00	Aula	PC
Szczepanowski, Remigiusz	Co-author	A-0696	Saturday, 31 August	9:00	1.79	T42
Szentiványi, Judit	Co-author	A-0757	Friday, 30 August	9:00	0.99	T14
Szmalec, Arnaud	Co-author	A-0361	Friday, 30 August	16:00	0.89	T31
Szokolszky, Ágnes	Co-author	A-0758	Thursday, 29 August	16:00	Aula	PA
Szondy, Máté	Co-author	A-0271	Thursday, 29 August	16:00	Aula	PA
Szóllósi, Ágnes	1st author	A-0442	Thursday, 29 August	16:00	Aula	PA
Szóllósi, Ágnes	Co-author	A-0688	Friday, 30 August	11:00	Aula	PB
Szucs, Denes	1st author	A-0727	Friday, 30 August	9:00	0.100a	T15
Szucs, Denes	Co-author	A-0507	Saturday, 31 August	11:00	Aula	PC
Szucs, Denes	Co-author	A-0184	Friday, 30 August	9:00	0.100a	T15
Szulżycki, Marcin	Co-author	A-0590	Saturday, 31 August	11:00	Aula	PC

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Szűcs, Dénes	Co-author	A-0536	Friday, 30 August	11:00	Aula	PB
Taconnat, Laurence	Co-author	A-0267	Saturday, 31 August	11:00	Aula	PC
Tagliapietra, Christian	Co-author	A-0068	Saturday, 31 August	9:00	0.79	T4S1
Tainturier, Marie-Josèphe	Co-author	A-0173	Thursday, 29 August	16:00	Aula	PA
Takács, Ádám	1st author	A-0550	Saturday, 31 August	11:00	Aula	PC
Takács, Ádám	Co-author	A-0536	Friday, 30 August	11:00	Aula	PB
Takács, Dávid	1st author	A-0692	Friday, 30 August	11:00	Aula	PB
Takács, Endre	1st author	A-0642	Saturday, 31 August	11:00	Aula	PC
Takács, Endre	Co-author	A-0567	Saturday, 31 August	11:00	Aula	PC
Takahashi, Kohske	1st author	A-0505	Sunday, 1 September	9:00	0.87	T74
Talsma, Durk	Co-author	A-0355	Friday, 30 August	13:30	0.89	T23
Tanabe-Ishibashi, Azumi	1st author	A-0460	Thursday, 29 August	16:00	Aula	PA
Tanida, Yuki	Co-author	A-0400	Friday, 30 August	11:00	Aula	PB
Tassin, Maxime	Co-author	A-0280	Saturday, 31 August	13:30	0.100b	T52
Tatone, Denis	1st author	A-0329	Friday, 30 August	9:00	0.99	T14
Tauzin, Tibor	1st author	A-0327	Saturday, 31 August	11:00	Aula	PC
Tavano, Alessandro	Co-author	A-0652	Friday, 30 August	11:00	Aula	PB
Taylor, Paul J.C.	Co-author	A-0136	Saturday, 31 August	11:00	Aula	PC
Taylor, Roberson	Co-author	A-0010	Friday, 30 August	16:00	0.99	T35
Tejero, Pilar	1st author	A-0622	Friday, 30 August	11:00	Aula	PB
Tekozel, Mert	1st author	A-0623	Thursday, 29 August	16:00	Aula	PA
Tencati, Chiara	Co-author	A-0045	Friday, 30 August	9:00	0.89	T1S3
Terhune, D. B.	1st author	A-0630	Friday, 30 August	11:00	Aula	PB
Terhune, D. B.	1st author	A-0490	Friday, 30 August	16:00	0.81	T3S3
Tessoulin, Marine	Co-author	A-0407	Saturday, 31 August	16:00	0.79	T6S3
Thevenot, Catherine	Co-author	A-0249	Friday, 30 August	13:30	0.100a	T26
Thierry, G.	Co-author	A-0461	Friday, 30 August	16:00	0.89	T31
Thierry, Guillaume	Co-author	A-0173	Thursday, 29 August	16:00	Aula	PA
Thierry, Guillaume	Co-author	A-0596	Saturday, 31 August	9:00	0.100a	T41
Thomas, Hinault	Co-author	A-0740	Saturday, 31 August	13:30	0.89	T55
Thomaschke, Roland	1st author	A-0103	Sunday, 1 September	9:00	0.79	T7S3
Thomaschke, Roland	Symposium Chair	-	Sunday, 1 September	9:00	0.79	T7S3
Thomaschke, Roland	Co-author	A-0161	Sunday, 1 September	9:00	0.79	T7S3
Thompson, Catherine	1st author	A-0569	Saturday, 31 August	9:00	0.87	T45
Tibboel, Helen	1st author	A-0089	Sunday, 1 September	9:00	0.81	T7S1
Todorov, Ivo	Co-author	A-0189	Saturday, 31 August	9:00	0.87	T45
Toffalini, Enrico	Co-author	A-0594	Sunday, 1 September	9:00	0.89	T75
Togato, Giulia	Co-author	A-0157	Saturday, 31 August	13:30	0.81	T5S1
Tokowicz, Natasha	Co-author	A-0052	Saturday, 31 August	13:30	0.81	T5S1
Tokowicz, Natasha	Co-author	A-0565	Saturday, 31 August	16:00	0.100b	T62
Tomasello, Michal	1st author	A-0771	Sunday, 1 September	11:30	Harmonia	K4
Tominaga, Atsuko	Co-author	A-0400	Friday, 30 August	11:00	Aula	PB
Toni, Ivan	1st author	A-0463	Friday, 30 August	13:30	0.81	T2S2
Tops, Wim	Co-author	A-0285	Sunday, 1 September	9:00	0.100b	T73

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Name	Role	AbsNo	Date	Time	Room	Sect
Toro, Juan M.	1st author	A-0250	Friday, 30 August	13:30	1.79	T21
Toro, Juan M.	Co-author	A-0234	Friday, 30 August	11:00	Aula	PB
Török, Ágoston	1st author	A-0593	Friday, 30 August	11:00	Aula	PB
Traczyk, Jakub	1st author	A-0560	Thursday, 29 August	16:00	Aula	PA
Treccani, Barbara	Co-author	A-0548	Saturday, 31 August	11:00	Aula	PC
Tremea, A.	Co-author	A-0469	Saturday, 31 August	11:00	Aula	PC
Tressman, I.	Co-author	A-0134	Saturday, 31 August	13:30	0.89	T55
Trinzcer, Inbar Lucia	Co-author	A-0718	Friday, 30 August	11:00	Aula	PB
Trujillo-Barreto, Nelson	Co-author	A-0477	Friday, 30 August	9:00	0.83	T1S1
Tsai, Jessica Chia Chin	Co-author	A-0661	Saturday, 31 August	13:30	0.83	T5S3
Tsal, Yehoshua	Co-author	A-0520	Friday, 30 August	16:00	0.100b	T36
Tubau, Elisabet	1st author	A-0766	Friday, 30 August	11:00	Aula	PB
Tubau, Elisabet	Co-author	A-0589	Sunday, 1 September	9:00	0.100a	T72
Türkan, Belgüzar Nilay	1st author	A-0578	Saturday, 31 August	11:00	Aula	PC
Tzelgov, Joseph	Co-author	A-0049	Thursday, 29 August	16:00	Aula	PA
Tzelgov, Joseph	Co-author	A-0025	Friday, 30 August	11:00	Aula	PB
Tzelgov, Joseph	Co-author	A-0015	Saturday, 31 August	11:00	Aula	PC
Tzeng, Angela Ku-Yuan	1st author	A-0465	Thursday, 29 August	16:00	Aula	PA
Uittenhove, Kim	1st author	A-0249	Friday, 30 August	13:30	0.100a	T26
Ulatowska, Joanna	1st author	A-0099	Saturday, 31 August	16:00	0.99	T64
Ulatowska, Joanna	Co-author	A-0122	Saturday, 31 August	11:00	Aula	PC
Ulatowska, Joanna	Co-author	A-0119	Saturday, 31 August	13:30	0.79	T53
Unoka, Zsolt	Co-author	A-0577	Thursday, 29 August	16:00	Aula	PA
Unoka, Zsolt	Co-author	A-0580	Thursday, 29 August	16:00	Aula	PA
Unoka, Zsolt	Co-author	A-0549	Saturday, 31 August	11:00	Aula	PC
Urbanska, Joanna	Co-author	A-0062	Thursday, 29 August	16:00	Aula	PA
Urbanski, Mariusz	1st author	A-0062	Thursday, 29 August	16:00	Aula	PA
Usher, Marius	Co-author	A-0664	Saturday, 31 August	13:30	0.89	T55
Vadillo, M. A.	Co-author	A-0258	Sunday, 1 September	9:00	0.100a	T72
Vagnot, Caroline	1st author	A-0440	Thursday, 29 August	16:00	Aula	PA
Valentin, Dominique	Co-author	A-0108	Saturday, 31 August	11:00	Aula	PC
Vallar, Giuseppe	Co-author	A-0447	Saturday, 31 August	11:00	Aula	PC
Van Assche, Eva	Co-author	A-0361	Friday, 30 August	16:00	0.89	T31
van Baaren, R	Co-author	A-0041	Saturday, 31 August	9:00	0.83	T4S2
van Baaren, Rick B.	Co-author	A-0451	Friday, 30 August	11:00	Aula	PB
Van Calster, Laurens	1st author	A-0402	Friday, 30 August	11:00	Aula	PB
van Campen, Dilene	Co-author	A-0207	Saturday, 31 August	16:00	0.83	T6S1
Van Damme, Ilse	1st author	A-0085	Saturday, 31 August	16:00	0.79	T6S3
Van de Cavey, Joris	1st author	A-0230	Friday, 30 August	16:00	0.87	T32
van den Bussche, Eva	Symposium Chair	-	Friday, 30 August	16:00	0.83	T3S1
Van den Bussche, Eva	Co-author	A-0053	Saturday, 31 August	11:00	Aula	PC
Van den Bussche, Eva	Co-author	A-0262	Friday, 30 August	16:00	0.83	T3S1
van den Wildenberg, Wery	Co-author	A-0643	Friday, 30 August	16:00	0.100a	T33
van den Wildenberg, Wery	Co-author	A-0042	Saturday, 31 August	13:30	0.83	T5S3

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Name	Role	AbsNo	Date	Time	Room	Sect
van den Wildenberg, Wery P.M.	Co-author	A-0092	Friday, 30 August	13:30	Harmonia	T2S1
van den Wildenberg, Wery P.M.	Co-author	A-0086	Friday, 30 August	13:30	Harmonia	T2S1
Van der Borght, Liesbet	1st author	A-0101	Saturday, 31 August	11:00	Aula	PC
Van der Borght, Liesbet	Co-author	A-0293	Thursday, 29 August	16:00	Aula	PA
Van der Borght, Liesbet	Co-author	A-0076	Sunday, 1 September	9:00	0.81	T7S1
van der Ham, Ineke J. M.	1st author	A-0373	Friday, 30 August	11:00	Aula	PB
van der Kamp, John	Co-author	A-0019	Friday, 30 August	13:30	0.87	T22
Van Der Linden, Martial	Co-author	A-0402	Friday, 30 August	11:00	Aula	PB
van der Weiden, Anouk	1st author	A-0409	Saturday, 31 August	9:00	0.83	T4S2
Van Dijck, Jean-Philippe	Co-author	A-0302	Saturday, 31 August	11:00	Aula	PC
Van Gerven, Pascal W. M.	Co-author	A-0290	Saturday, 31 August	11:00	Aula	PC
van Haren, Neeltje E. M.	1st author	A-0620	Friday, 30 August	13:30	0.99	T24
van Haren, Neeltje E. M.	Co-author	A-0711	Friday, 30 August	13:30	0.99	T24
van Haren, Neeltje E. M.	Co-author	A-0409	Saturday, 31 August	9:00	0.83	T4S2
van Hell, Janet G.	Co-author	A-0052	Saturday, 31 August	13:30	0.81	T5S1
van Maanen, Leendert	1st author	A-0207	Saturday, 31 August	16:00	0.83	T6S1
Van Opstal, Filip	Co-author	A-0262	Friday, 30 August	16:00	0.83	T3S1
van Opstal, Filip	Co-author	A-0357	Friday, 30 August	16:00	0.83	T3S1
van Reekum, Carien	1st author	A-0681	Sunday, 1 September	9:00	0.83	T7S2
van Rooij, Iris	Co-author	A-0463	Friday, 30 August	13:30	0.81	T2S2
van Zoest, Wieske	1st author	A-0646	Saturday, 31 August	13:30	0.87	T5S2
Vandenbossche, Jochen	1st author	A-0054	Saturday, 31 August	13:30	0.89	T55
Vandenbossche, Jochen	Co-author	A-0053	Saturday, 31 August	11:00	Aula	PC
Vandenbossche, Jochen	Co-author	A-0689	Friday, 30 August	16:00	1.79	T34
Vangkilde, Signe	1st author	A-0233	Saturday, 31 August	16:00	0.87	T65
Vangkilde, Signe	Co-author	A-0615	Sunday, 1 September	9:00	0.87	T74
Vanneste, Sandrine	Co-author	A-0267	Saturday, 31 August	11:00	Aula	PC
Várhelyi, Klára	1st author	A-0577	Thursday, 29 August	16:00	Aula	PA
Vassena, Eliana	1st author	A-0201	Friday, 30 August	9:00	0.100b	T13
Vázquez, C.	Co-author	A-0755	Thursday, 29 August	16:00	Aula	PA
Vecchi, Tomaso	Co-author	A-0180	Friday, 30 August	11:00	Aula	PB
Vecchi, Tomaso	Co-author	A-0660	Friday, 30 August	11:00	Aula	PB
Veenstra, Alma	1st author	A-0492	Friday, 30 August	11:00	Aula	PB
Veldre, Aaron	1st author	A-0545	Friday, 30 August	11:00	Aula	PB
Ventura, P.	Co-author	A-0148	Friday, 30 August	11:00	Aula	PB
Verbruggen, F.	Co-author	A-0243	Friday, 30 August	9:00	0.100b	T13
Verbruggen, Frederick	Co-author	A-0313	Thursday, 29 August	16:00	Aula	PA
Vergauwe, Evie	Co-author	A-0377	Saturday, 31 August	13:30	0.79	T53
Verguts, Tom	Co-author	A-0287	Thursday, 29 August	16:00	Aula	PA
Verguts, Tom	Co-author	A-0201	Friday, 30 August	9:00	0.100b	T13
Verguts, Tom	Co-author	A-0470	Friday, 30 August	9:00	0.100b	T13
Verheij, Rebekka	Co-author	A-0632	Thursday, 29 August	16:00	Aula	PA
Verhoeven, L.	Co-author	A-0496	Saturday, 31 August	11:00	Aula	PC
Verleger, Rolf	1st author	A-0047	Saturday, 31 August	16:00	0.81	T6S2

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Name	Role	AbsNo	Date	Time	Room	Sect
Vermeulen, Lisanne	Co-author	A-0711	Friday, 30 August	13:30	0.99	T24
Vermeulen, Nicolas	Co-author	A-0566	Friday, 30 August	11:00	Aula	PB
Veronelli, Laura	1st author	A-0447	Saturday, 31 August	11:00	Aula	PC
Verreyt, Nele	Co-author	A-0361	Friday, 30 August	16:00	0.89	T31
Verrier, Nadège	Co-author	A-0100	Friday, 30 August	11:00	Aula	PB
Verrier, Nadège	Co-author	A-0294	Saturday, 31 August	16:00	0.79	T6S3
Versace, Rémy	Co-author	A-0026	Thursday, 29 August	16:00	Aula	PA
Versace, Rémy	Co-author	A-0440	Thursday, 29 August	16:00	Aula	PA
Verschaffel, L.	Co-author	A-0685	Friday, 30 August	11:00	Aula	PB
Verschaffel, Lieven	Co-author	A-0220	Friday, 30 August	13:30	0.100a	T26
Vesper, Cordula	1st author	A-0265	Friday, 30 August	11:00	Aula	PB
Vespignani, Francesco	1st author	A-0650	Saturday, 31 August	13:30	1.79	T51
Vespignani, Francesco	Co-author	A-0292	Friday, 30 August	13:30	1.79	T21
Vibert, Nicolas	Co-author	A-0125	Saturday, 31 August	9:00	0.100a	T41
Vidal	Co-author	A-0422	Thursday, 29 August	16:00	Aula	PA
Vidal, F	Co-author	A-0382	Saturday, 31 August	9:00	0.87	T45
Vidal, Franck	Co-author	A-0374	Thursday, 29 August	16:00	Aula	PA
Viebahn, Malte	1st author	A-0337	Friday, 30 August	13:30	1.79	T21
Viki, Abramov	Co-author	A-0273	Thursday, 29 August	16:00	Aula	PA
Vila, J. O.	Co-author	A-0174	Saturday, 31 August	16:00	0.89	T66
Vink, Matthijs	Co-author	A-0620	Friday, 30 August	13:30	0.99	T24
Viswanathan, Navin	1st author	A-0645	Thursday, 29 August	16:00	Aula	PA
Voboril, Dalibor	Co-author	A-0320	Saturday, 31 August	11:00	Aula	PC
Vogt, Julia	1st author	A-0051	Sunday, 1 September	9:00	0.83	T7S2
Voinov, Pavel V.	1st author	A-0476	Friday, 30 August	11:00	Aula	PB
Voloshyna, V. O.	1st author	A-0715	Saturday, 31 August	11:00	Aula	PC
Voloshyna, V. O.	Co-author	A-0729	Thursday, 29 August	16:00	Aula	PA
Volosin, Márta	1st author	A-0241	Thursday, 29 August	16:00	Aula	PA
Voorwald, Frank	Co-author	A-0019	Friday, 30 August	13:30	0.87	T22
Voudouris, Dimitris	Co-author	A-0632	Thursday, 29 August	16:00	Aula	PA
Vroomen, Jean	Co-author	A-0340	Friday, 30 August	13:30	0.83	T2S3
Wagenmakers, Eric-Jan	1st author	A-0080	Saturday, 31 August	16:00	0.83	T6S1
Wagenmakers, Eric-Jan	Symposium Chair	-	Saturday, 31 August	16:00	0.83	T6S1
Wagenmakers, Eric-Jan	Co-author	A-0540	Friday, 30 August	13:30	0.79	T27
Wagenmakers, Eric-Jan	Co-author	A-0371	Friday, 30 August	13:30	Harmonia	T2S1
Wager, Tor D.	Co-author	A-0079	Sunday, 1 September	9:00	0.83	T7S2
Wang, Seqian	Co-author	A-0109	Friday, 30 August	16:00	0.100a	T33
Wang, Xin	1st author	A-0721	Saturday, 31 August	16:00	0.100b	T62
Ward, Jamie	1st author	A-0722	Friday, 30 August	16:00	0.81	T3S3
Ward, Jamie	Symposium Chair	-	Friday, 30 August	16:00	0.81	T3S3
Ward, Jamie	Co-author	A-0472	Friday, 30 August	16:00	0.81	T3S3
Warren, Tessa	Co-author	A-0565	Saturday, 31 August	16:00	0.100b	T62
Warriner, Amy Beth	Co-author	A-0137	Saturday, 31 August	9:00	0.81	T4S3
Wasner, Mirjam	1st author	A-0413	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Waszak, Florian	Co-author	A-0300	Thursday, 29 August	16:00	Aula	PA
Waszak, Florian	Co-author	A-0297	Saturday, 31 August	13:30	0.100b	T52
Watanabe, Katsumi	Co-author	A-0505	Sunday, 1 September	9:00	0.87	T74
Waterman, Amanda	1st author	A-0317	Saturday, 31 August	9:00	0.100b	T44
Waterman., Amanda	Co-author	A-0118	Thursday, 29 August	16:00	Aula	PA
Webbink	Co-author	A-0654	Friday, 30 August	11:00	Aula	PB
Weighall, A. R.	Co-author	A-0538	Friday, 30 August	11:00	Aula	PB
Weighall, Anna	1st author	A-0328	Saturday, 31 August	9:00	0.100a	T41
Weinbach, Noam	1st author	A-0096	Saturday, 31 August	16:00	0.87	T65
Welleditsch, David	1st author	A-0676	Saturday, 31 August	11:00	Aula	PC
Weller, Peter D.	1st author	A-0533	Friday, 30 August	11:00	Aula	PB
Wenke, Dorit	1st author	A-0193	Saturday, 31 August	9:00	0.83	T4S2
Wenke, Dorit	Symposium Chair	-	Saturday, 31 August	9:00	0.83	T4S2
Wenke, Dorit	Co-author	A-0046	Saturday, 31 August	9:00	0.83	T4S2
Wentraum, Yehonatan	Co-author	A-0752	Sunday, 1 September	9:00	0.83	T7S2
Wentura, Dirk	Co-author	A-0690	Friday, 30 August	11:00	Aula	PB
White, Corey N	1st author	A-0425	Saturday, 31 August	16:00	0.83	T6S1
Whitney, Carol	Co-author	A-0285	Sunday, 1 September	9:00	0.100b	T73
Wicker, Bruno	Co-author	A-0566	Friday, 30 August	11:00	Aula	PB
Widmann, Andreas	Co-author	A-0477	Friday, 30 August	9:00	0.83	T1S1
Wiecki, Thomas	Co-author	A-0540	Friday, 30 August	13:30	0.79	T27
Wielgaard, Kirsten	Co-author	A-0019	Friday, 30 August	13:30	0.87	T22
Wiemers, Michael	Co-author	A-0585	Thursday, 29 August	16:00	Aula	PA
Wiersema, Roeljan	Co-author	A-0455	Friday, 30 August	11:00	Aula	PB
Wierzchoń, Michał	1st author	A-0696	Saturday, 31 August	9:00	1.79	T42
Wierzchoń, Michał	Co-author	A-0590	Saturday, 31 August	11:00	Aula	PC
Wiese, Eva	Co-author	A-0163	Friday, 30 August	16:00	0.100b	T36
Willander, Johan	Co-author	A-0335	Saturday, 31 August	11:00	Aula	PC
Willander, Johan	Co-author	A-0665	Saturday, 31 August	11:00	Aula	PC
Willmes, Klaus	Co-author	A-0342	Friday, 30 August	11:00	Aula	PB
Willmes, Klaus	Co-author	A-0614	Saturday, 31 August	11:00	Aula	PC
Wincenciak, Joanna	1st author	A-0430	Friday, 30 August	11:00	Aula	PB
Winkielman, Piotr	Co-author	A-0713	Saturday, 31 August	16:00	0.99	T64
Winkler, Istvan	Symposium Chair	-	Friday, 30 August	13:30	0.83	T2S3
Winkler, István	1st author	A-0181	Friday, 30 August	13:30	0.83	T2S3
Winkler, István	Co-author	A-0104	Thursday, 29 August	16:00	Aula	PA
Winkler, István	Co-author	A-0117	Thursday, 29 August	16:00	Aula	PA
Winkler, István	Co-author	A-0315	Friday, 30 August	13:30	0.83	T2S3
Winther, G. N.	Co-author	A-0506	Saturday, 31 August	16:00	0.81	T6S2
Wodniecka, Zofia	Co-author	A-0701	Thursday, 29 August	16:00	Aula	PA
Wodniecka, Zofia	Co-author	A-0697	Friday, 30 August	11:00	Aula	PB
Wolfensteller, Uta	Co-author	A-0572	Friday, 30 August	11:00	Aula	PB
Wong, Qinyuen	Co-author	A-0527	Saturday, 31 August	16:00	0.89	T66
Woumans, Evy	1st author	A-0006	Thursday, 29 August	16:00	Aula	PA

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Name	Role	AbsNo	Date	Time	Room	Sect
Wouter, Duyck	1st author	A-0361	Friday, 30 August	16:00	0.89	T31
Wronka, Eligiusz	Co-author	A-0696	Saturday, 31 August	9:00	1.79	T42
Wujcik, Radosław	Co-author	A-0397	Thursday, 29 August	16:00	Aula	PA
Wutte, Magdalena G.	1st author	A-0374	Thursday, 29 August	16:00	Aula	PA
Wykowska, Agnieszka	1st author	A-0163	Friday, 30 August	16:00	0.100b	T36
Yaakov, Yael	Co-author	A-0752	Sunday, 1 September	9:00	0.83	T7S2
Yamasaki, Yuko	1st author	A-0514	Friday, 30 August	11:00	Aula	PB
Zagar, Daniel	Co-author	A-0339	Saturday, 31 August	11:00	Aula	PC
Zagar, Daniel	Co-author	A-0280	Saturday, 31 August	13:30	0.100b	T52
Zaitseva, K. A.	Co-author	A-0405	Saturday, 31 August	16:00	0.99	T64
Zakay, Dan	Co-author	A-0029	Saturday, 31 August	13:30	0.100b	T52
Zaleśkiewicz, Tomasz	Co-author	A-0560	Thursday, 29 August	16:00	Aula	PA
Zalla, Tiziana	1st author	A-0028	Sunday, 1 September	9:00	0.100b	T73
Zandvoord, Martine	Co-author	A-0678	Saturday, 31 August	16:00	0.89	T66
Zeelenberg, Rene	1st author	A-0732	Sunday, 1 September	9:00	0.81	T7S1
Żelechowska, Dorota	1st author	A-0491	Friday, 30 August	11:00	Aula	PB
Żelechowska, Dorota	Co-author	A-0310	Thursday, 29 August	16:00	Aula	PA
Zezelj, Iris	1st author	A-0088	Thursday, 29 August	16:00	Aula	PA
Žeželj, Iris	1st author	A-0087	Thursday, 29 August	16:00	Aula	PA
Ziad, Safadi	Co-author	A-0513	Saturday, 31 August	13:30	0.100a	T54
Ziegler, J	Co-author	A-0384	Thursday, 29 August	16:00	Aula	PA
Ziessler, Michael	Co-author	A-0625	Saturday, 31 August	13:30	0.100b	T52
Zimmer, Hubert	Symposium Chair	-	Saturday, 31 August	13:30	Harmonia	T5S4
Zimmer, Hubert D.	Co-author	A-0159	Friday, 30 August	11:00	Aula	PB
Zimmer, Hubert D.	Co-author	A-0651	Saturday, 31 August	13:30	Harmonia	T5S4
Zokaei, Nahid	Co-author	A-0282	Saturday, 31 August	13:30	Harmonia	T5S4
Zwitserslood, Pienie	Co-author	A-0326	Friday, 30 August	11:00	Aula	PB
Zwosta, Katharina	1st author	A-0572	Friday, 30 August	11:00	Aula	PB

PRESENTATION OF HUNGARIAN COGNITIVE PSYCHOLOGY

Hungarian cognitive psychology presents itself to the ESCOP 2013 Budapest meeting

History

- Paul Ranschburg
- Géza Révész
- George Békésy
- Paul Schiller (Harkai)
- Endre Grastyán
- Lajos Kardos

Present labs

- Hungarian Academy
- CEU
- ELTE
- Ethology
- PTE
- SzTe
- BME
- Clinical
- Eszterházy

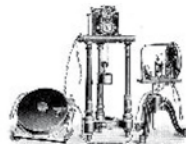
Ranschburg Pál (Paul Ranschburg) 1870-1945



Paul Ranschburg founded the first laboratory on experimental psychology in Hungary (1899). The laboratory (Royal Hungarian Laboratory of Special Education and Psychology) is the predecessor of the Institute of Cognitive Neuroscience and Psychology of the Hungarian Academy of Sciences, Centre for Natural Sciences. He was the first president of the Hungarian Psychological Society.

In the field of experimental psychology his work concentrated on memory and learning. The „Ranschburgisches phenomemon” (law of homogenous inhibition) was published in 1902. According to this law, as a function of heterogeneity of continuous mental contents (percepts, images, drives) there is less interference among these contents, and in reverses, the more homogenous these contents are, the contents lose their individuality.

In 1923 Ranschburg published a comprehensive book on human mind.



Mnemoneter, from Ranschburg's laboratory. Taken from: Zimmermann, E. 1923. Liste 33: Über Psychotechnik. (p. 0017, fig. 750b)

Géza Révész (1878-1955) One of the founders of Hungarian experimental psychology



- Hearing
- Music and harmony
- Touch and haptic space
- Sensory handicap
- Talent
- Origin of language



György Békésy

Nobel Prize Winner in Physiology or Medicine, 1961

Short Biography



- ❖ 1899: born in Budapest.
- ❖ 1923: received his PhD in physics at the Pázmány Péter University, Budapest;
- ❖ 1924-1948: researcher at the Hungarian Post Office, Budapest;
- ❖ 1939: elected to be a Member of the Hungarian Academy of Sciences;
- ❖ 1940-1948: professor at the Pázmány Péter University, Budapest;
- ❖ 1946-1947: fellow at the Karolinska Institute, Stockholm;
- ❖ 1947-1966: professor at the Harvard University, Boston;
- ❖ 1966-1972: professor at the University of Hawaii, Honolulu;
- ❖ 1972: died in Hawaii.

I owe a large part of my education to the museums of many countries.

Nobel Lecture, December 11, 1961

Paul Harkai von Schiller (1908-1949)

Founder of functionalist comparative psychology in Hungary



- University organizer at the psychological seminary of Pázmány U Budapest in the 1930s
- Students Rapaport Dezső
- Marton L. Magda
- Bakay Éva
- Animal sign learning
- Kolozsvár (Cluj) Egyetem
- Yerkes Laboratories
- Chimpanzee research
- Early tragic death

Endre Grastyán 1924 – 1988

Pioneer in physiological psychology

He got his MD at the Univ. Med. School of Pécs in 1951. He became a coworker of the chairman of the Dep. of Physiology, Kálmán Lissák already as a medical student. By the time Grastyán finished the medical school he was already an accomplished electrophysiologist. Soon he became the intellectual driving force of the Department, heading an internationally recognized research group. He was a leading scientist of the research area called at that time physiological psychology.



His most remarkable results:

- In 1952 three year after Moruzzi and Magoun described the mesencephalic activation system, Grastyán showed that vegetative afferents can also activate this system and induce cortical arousal.
- As a pioneer in recording brain electrical activity in freely moving animals in 1954, the same year Olds described the hypothalamic selfstimulation, Grastyán published a paper describing that stimulation of the hypothalamus and the mesencephalic areas can reciprocally activate or inhibit the instrumental alimentary and avoidance conditioning responses in cats. (cont.)

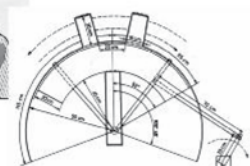
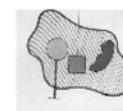


The research team of Endre Grastyán with Sir J. Eccles and K. Lissák

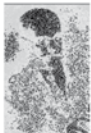
Animal memory and the origins of mind: The conception of Lajos Kardos (1899-1985) a Hungarian comparative psychologist



International Psychological Congress, Bonn, Germany, 1949. The next day, Kardos, Pálján, Lajos, Császár, Péter, Harkai, K. (1949)



PRESENTATION OF HUNGARIAN COGNITIVE PSYCHOLOGY



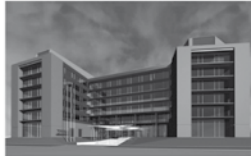
FOUNDED BY PAUL RANSCHBURG IN 1899

INSTITUTE OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY



MEMBER OF CENTRE FOR NATURAL SCIENCES (CNS) HUNGARIAN ACADEMY OF SCIENCES

The topics of five teams (~ 30 researchers) are connected to cognitive psychology.



MODEL OF THE NEW RESEARCH BUILDING OF CNS

GROUP OF EXPERIMENTAL PSYCHOLOGY AND NEUROSCIENCE I.



Implicit visual memory system, the analysis of visual mismatch negativity (vMMN) event-related potential component. vMMN emerges whenever an event violates the regularity of stimulus sequences, therefore vMMN appearance is an indicator of registered regularity. Beyond the registration of individual visual features, the system is capable of storing deviant events, i.e., vMMN to event with simultaneous deviant features does not elicit increased vMMN. However, simultaneous deviancy of two events elicits additive vMMN. vMMN is not independent of the task-related stimuli. Irrelevant stimuli shearing the characteristics of task-relevant ones elicit vMMN with decreased amplitude. The system is capable of registering perceptual (horizontal symmetry) and emotional categories. However, without the acquisition of category, no vMMN emerges. The system is sensitive to conditional regularities; therefore it is possible that it has a predictive function in visual perception.



István CZÍGLÉR director, head of the research group also at Eötvös Loránd University

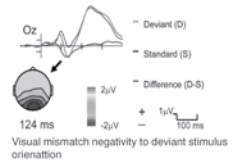
Action-related and attentional modulation of sensory processing.

Investigation of the effects of self-initiated auditory stimulation: using the method of event-related potentials (mainly the N1 component) it was pointed out that the difference between the effects of self-initiated activity and the activity elicited by other environmental stimuli is due to the temporal proximity of the movement and the stimulation. This results are in contrast to a traditional explanation, suggesting causal relations between the movement and its sensory effect.



János HORVÁTH principal investigator

Orientation

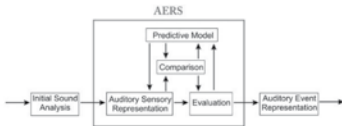


GROUP OF EXPERIMENTAL PSYCHOLOGY AND NEUROSCIENCE II.



MAIN INTEREST: Linking auditory scene analysis and deviance detection via predictive perceptual object representations.

Two of the most important goals of sensory information processing are to discover the distal sources or causes (objects) of sensory information and to detect potentially important events in the environment. Noting that both functions relate incoming information to what is already known about the environment we proposed that object representation and deviance detection rely on a common generative model of the auditory environment. This model predicts upcoming sounds on the basis of representations describing temporal/sequential regularities. Predictions help to identify the continuation of the acoustic signals from previously discovered sound sources, thus allowing the brain to detect the emergence of new sources as well as changes in the behavior of the known ones.



István WINKLER Head of the group (also at Szeged University)

An overview of the auditory event representation system (AERS). The primary input is the incoming sound with its basic features established. The main components of the system include a Predictive Model of the auditory environment storing representations of regularities extracted from the preceding sounds. This model generates predictions for upcoming sounds, thus helping to establish Auditory Sensory Representations of the incoming sounds. The resulting representation is compared with the predictions. The outcome of the Comparison is used to update the model and it is evaluated together with information regarding the current goals of the organism. The result is an Auditory Event Representation, which can enter various mental operations and be consciously perceived.

RESEARCH GROUP ON COGNITIVE PSYCHOLOGY OF SPACE RESEARCH



The Space Research Group of the Institute of Cognitive Neuroscience and Psychology is involved in studies aiming at changes in cognitive functioning under extreme conditions. In the ESA sponsored Neurospat experiment performance and brain electrical activity is recorded on astronauts performing a battery of cognitive and psycho-motor tasks on the Earth and on board the International Space Station. EEG and cognitive performance is also studied on a group of Antarctic over-winterers as a part of ESA sponsored Cognipole experiment

Studies in laboratory models of extreme conditions such as hypoxia or sleep deprivation serve both as foundation and control for these fields.



Astronaut performing the Neurospat experiment in microgravity. Credit ESA/NASA. This picture is exclusively for slide presentation. ESA/NASA permission is required for printing or making it publicly accessible (i.e. internet).



László BALÁZS head of the research group

PSYCHOPHYSIOLOGY GROUP



MAIN INTEREST: electrophysiological correlates of healthy aging and in minimal cognitive impairment (MCI)

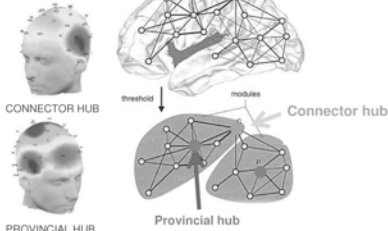
APPROACH: graph theoretical analysis of neural networks performed on the EEG and ERPs



Márk MOLNÁR Head of the research group



Zsófia Anna GAÁL Principal investigator



GROUP FOR DEVELOPMENTAL PSYCHOPHYSIOLOGY



The primary focus of the research is developmental cognitive psychophysiology. Topics include the maturation of word segmentation, the development of reading and the development of attention and executive control. To investigate these the methods of psychophysiology, experimental and cognitive psychology as well as cognitive neuropsychology are combined. Furthermore, clinically oriented research topics built on the above research fields are examined as well, for example the investigation of neurocognitive characteristics of aphasia, aphasia acquired in childhood, dyslexia, specific language impairment and attention deficit disorder.



Valéria CSÉPE Deputy Secretary General of Hungarian Academy of Sciences, principal investigator



Ferenc HONBOLYGÓ Leader of the group



Summary of the activity of the group

**Central European University
Department of Cognitive Science**

CEU is an **English-speaking graduate university**. The Cognitive Science Department was established in 2011 based on the Cognitive Development Center. The main theme of the department is social, biological and computational aspects of human cognition focusing on learning, processing and sharing information about and with others.

- Faculty**
- Gergely Csibra
 - József Fiser
 - György Gergely
 - Christophe Heintz
 - Günther Knoblich
 - Ágnes M. Kovács
 - Máté Lengyel (part time)
 - Natalie Sebanz
 - Dan Sperber (part time)
 - Anne Tamm

A **doctoral program** has been launched in 2011:

- 11 PhD students from 6 nations to be increased to more than 20 students
- 9 postdocs
- 2 visiting faculty
- 3 visiting students
- 3-year fully funded progr.
- Hands-on research and teaching experience



- Research Groups**
- Cognitive Development Center
 - The Social Mind and Body Group
 - Visual Information Processing and Learning Laboratory
 - Experimental Economic Game Research

**Central European University
Department of Cognitive Science**



Cognitive Development Center



PIs: György Gergely ❖ Gergely Csibra ❖ Ágnes Kovács

- Areas of research:**
- action understanding
 - face and gaze perception
 - communication
 - social learning
 - Theory of Mind
 - imitation
 - impaired social cognition in autism



Approach:
Our three laboratories are equipped with an EEG and NIRS recording apparatus, eye tracking devices, as well as with video and computer equipment for behavioral studies.

The Social Mind and Body Group (SOMBY)

<http://somyby.info>

PI-s: Günter Knoblich
Natalie Sebanz



Our research aims at understanding perception, action, and cognition in the context of social interaction.

In behavioral and EEG studies with human adults, we investigate:

- Joint Action
- Joint Attention and Perspective Taking
- Communication
- Agency
- Action Perception
- Problem Solving



Visual information processing and learning laboratory



PI-s: József Fiser Máté Lengyel

Main question:

How structured visual information is *acquired and converted* into sophisticated *internal representations* for controlling cognition and behavior.

Areas of interest:

- Human and animal visual perception
- Statistical and rule learning in adults, infants and animals
- Neural coding of perceptual inference and internal representations



$$P_y(y) \xrightarrow{\text{learning from } P_{data}(x)} \int P_y(y|x) \cdot P_{data}(x) dx$$

Approaches:

- Multi-electrode recording from the awake cortex
- Probabilistic computational analyses and modeling
- Human psychophysical and learning experiments



Experimental economic game research



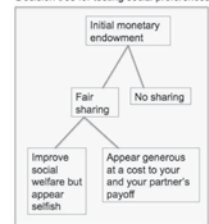
PI: Christophe Heintz

Aim: to investigate what motivates people to cooperate with others and be generous, to what extent is their decisions dependent on how they perceive their partners, on their cultural background, and on other external factors

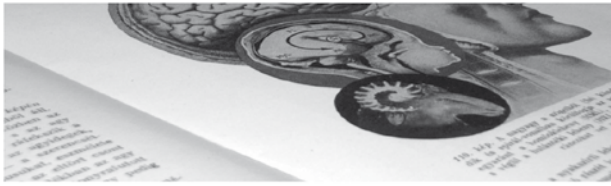
Approach: studying the roles of reputation, fairness, self-esteem and sense of entitlements in economic decision making as well as social cognition of strategic decision making.

Methods: experimental economics, evolutionary psychology, rational analysis

Decision tree for testing social preferences



PRESENTATION OF HUNGARIAN COGNITIVE PSYCHOLOGY



COGNITIVE PSYCHOLOGY DEPARTMENT Eötvös Loránd University



kognitiv.elte.hu

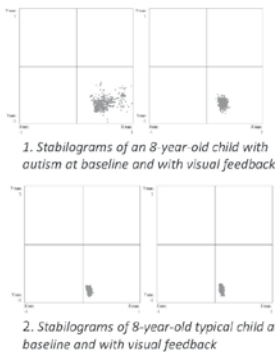
Numerical Cognition Lab lead by Attila Krajcsi



In the Numerical cognition lab the elementary aspects of number processing is investigated. How do children learn to count? How can we count objects? Why is it hard to use Roman numbers? (This is a tricky question: actually, it is easy. Still, why?) Why do number words and written numbers (like Arabic or Roman numbers) have a different structure? What is the cause of developmental dyscalculia? Why is zero difficult to use for preschoolers? (Again, it is not difficult.) Why do we ask sometime the wrong question?



Knowledge and Memory Research Group

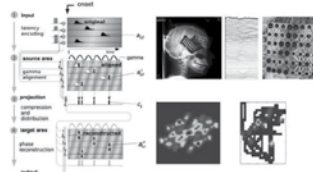


A novel approach of the group lead by Eszter Somogyi contribute to the mapping of postural control in autism with the use of a stabilometric technique that allows the exploration of the effect of contingent visual feedback on postural performance in autism.

Cognitive Electrophysiology Group lead by Zoltán Nádasdy



We are investigating different cognitive functions, such as memory, visual perception and spatial navigation by using various electrophysiology techniques. Among these methods, we use EEG, ECoG, MEG, TMS and started experimenting with a novel intraoperative optical imaging technique.



Our goal is to understand how information is encoded, transferred and integrated into neural representations in selected cortical and limbic areas of the brain. The special areas of interests in our lab are: phase coding, neural oscillations, propagation of potential waves in healthy and diseased brains, spatial navigation, visual motion perception and higher visual information processing, epilepsy and neuro-stimulation.

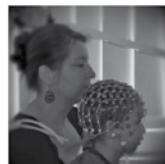
Knowledge and Memory Research Group



The Knowledge and Memory research group's first main topic (studied under the leadership of Anett Ragó) is category learning and representation structures. We investigate the acquisition of new categories of complex artificial stimuli. Our aim is to reveal the basic mechanisms behind prototype generalization and the storage of specific exemplars. Our current results are in parallel with the dual system models of category learning.

The second important line of research of the group lead by Anikó Kónya investigates the nature of autobiographical memory in terms of phenomenal experience and episodic richness. A recent accomplishment of the group is the Hungarian adoption of the Autobiographical Interview (AI; Levine, Svoboda et al., 2002; Szöllösi et al., 2011, Szöllösi & Kónya, 2011) and the Memory Characteristics Questionnaire (Johnson et al., 1988).

Social Minds Research Group lead by Katalin Egyed & Ildikó Király



The members of the group are particularly interested in fields such as the nature and ontogeny of autobiographical memory, understanding other's minds, the social embeddedness of conceptual thinking, and the role of social partners in knowledge acquisition.

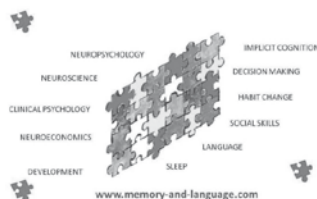


The main accomplishments of the group at ELTE Babylab were:

- It was proved that the natural pedagogy supports the acquisition of general, object-centered knowledge;
- the study of early memory performance highlighted that children do not retrieve one-time, particular memories, but general knowledge and experience they gather from these memories.

Memory and Language Lab

The main focus of research in our lab is the cognitive neuroscience and the neuropsychology behind implicit skill learning. We explore the entire process of implicit skill learning from memory formation to consolidation, and investigate how this process is affected by age, sleep, and various disorders such as autism, SLI, dyslexia, Huntington's disease, Mild Cognitive Impairment, and Spinocerebellar Ataxia. These studies could lead us not only to a deeper understanding of this fundamental learning mechanism but also to discover how humans rewire their skills and boost habit change in general.




COGNITIVE PSYCHOLOGY MA at Eötvös Loránd University



The MA in Cognitive Psychology and Cognitive Development at Eötvös Loránd University Budapest is a research intensive program focused on understanding perception, attention, memory, numerical cognition and language from a developmental and a neuro-cognitive perspective.


The program offers courses in a tutorial setting with small groups. Intensive laboratory practice includes:

- cognitive neuroscience specialization investigating electrophysiological and functional changes
- behavioral correlates of perceptual and cognitive abilities
- cognitive developmental specialization investigating the underlying neural mechanisms of the development of cognition and social learning.




RCNS HAS
scheduled to move here by 2014

Crossing boundaries – Comparative investigation of the social cognition in dogs and humans




Map of Eötvös University Campus, Budapest




Eötvös University

INSTITUTE OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

Comparative Behaviour Research Group




József TOPÁL
Head of the research group



Family Dog Project

DEPARTMENT OF ETHOLOGY

Research Group on Comparative Ethology



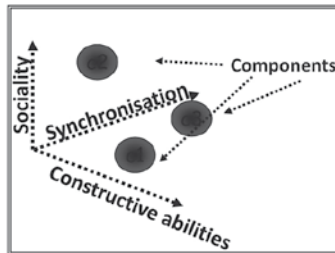
Ádám MIKLÓSI
Head of the research group

THEORETICAL FRAMEWORK

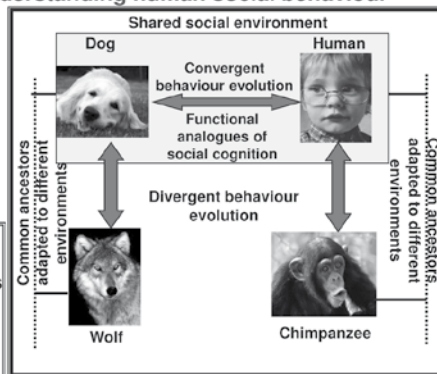
The dog as a model for understanding human social behaviour

Species-specific behavioral traits of humans:

It is the result of a “mosaic evolution” of several skills that gave rise to complex social behaviour in a synergetic way.



Human behaviour complex



Social competence: social tool set*

Convergent dog behaviour complex

COMPARATIVE EXPERIMENTATION

What can dogs (and robots) tell us about human social cognition?

The primary focus of the research group is to investigate the socio-cognitive aspects of dog behaviour by the means of an interdisciplinary approach, which involves genetic, neurobiological, ethological and information technological methods.

Summary of the main topics

- Using data mining technologies for automatization of quantifying behaviour
- Neural correlates of dog-human communicative interactions
- Genetics of human-oriented social behaviour in dogs
- Characterization of dog's social competence: infant-like sensitivity to human communication
- Social learning skills in dogs
- Dogs as a model for human-robot interaction



Institute of Psychology
University of Pécs



Beatrix Kiss



Beatrix Lébadi

RESEARCH ON COGNITIVE DEVELOPMENT

Our research team focuses on social and cognitive processes including spatial cognition, face perception, body representation and understanding mentalization in infancy and early childhood.

One line of research investigates the philosophical side of cognitive psychology such as the famous mind-body problem, consciousness, the problem of other minds, modularity, intentionality, the nature of folk psychology, naturalised epistemology, cognitive architecture and cognitive evolutionary psychology.

Another line of research aims to investigate different topics within cognitive development such as the development of mindreading, causal cognition, the understanding of privileged access to mental states, naive sociology, and the ontogenesis of logic.

We investigate the development in children's knowledge of their own and other's body's physical characteristics such as shape, size and perceptual configuration in typically developing as well as very preterm children.

In spatial cognition domain we investigate how children use geometry and visual features as well as the role of the language when they are disoriented. In infancy how motor development influences the emergence of spatial abilities.



Institute of Psychology
University of Pécs



Árpád Csathó

LABORATORY FOR NEUROCOGNITIVE RESEARCH

The laboratory maintained by the Institute of Behavioural Sciences explores the domains of visual attention and time perception.

Our studies currently aimed at understanding the fatigue related changes in attention. The aspects of both acute and chronic fatigue are in the focus of research with testing cardiovascular patients and healthy participants.

Our approach combines psychophysical as well as various psychophysiological measurements.



Kálmér Karádi

CLINICAL NEUROPSYCHOLOGY

This cognitive neuropsychological lab conducts examinations in the field of clinical neuropsychology and neuroscience.

They have cooperation with the Department of Neurology to help uncovering the cognitive neuroscience backgrounds of Parkinson's disease and Temporal Lobe Epilepsy.

They validate several cognitive test screening dementia and different cognitive disturbances in Parkinson's disease.

In Temporal Lobe Epilepsy we uncover the relationship between molecular mechanism of learning in hippocampus and verbal/non-verbal memory formation in the patients.



Institute of Psychology
University of Pécs



Prof. Tamás Bereczkei

THE EVOLUTIONARY PSYCHOLOGY RESEARCH GROUP

Using „traditional“ psychological methods and fMRI measurements to study the cognitive capacities underlying the „Machiavellians“ success in exploiting others, in spite of their cognitive deficits.

Using experimental games and real-life conditions to figure out why individuals help strangers without the possibility of return.

Using composite faces, and EEG techniques to investigate study the particular facial features related to trustworthiness, deception, and cheater detection.

Using various picture stimuli, specific computer programs, and fMRI measures to study the cognitive bases of mating strategies, including homogeneity, attractiveness, masculine-feminine traits, etc.

SPATIAL ORIENTATION RESEARCH GROUP

The research group makes studies in four particular fields:

Project 1: Spatial navigation strategies in real and virtual spaces.

Project 2: Spatial learning and thigmotaxis in humans.

Project 3: Cognitive neuroscience approach for Rubber Hand Illusion

Project 4: Body and Space: „It belongs to me, but it is not mine“



Prof. János Kállai



Institute of Psychology
University of Pécs

COGNITIVE PSYCHOLOGY RESEARCH GROUP

Face processing

Non realistic figures, abstract pictures and human faces: perceptual features of „figural goodness“

Characteristics of visual information processing in children with autism - Perception of contour-integration, unfinished figure, and anomalous movement illusions in the case of persons with autism

Face recognition: The possible features of sympathy/antipathy on Szondi's Picture Reading from vs. reading „into“ – an investigation of Szondi's pictures: Psychometric features of judgements as sympathy/antipathy on Szondi's average profile

Affective Neuroscience

The research group is interested in the neural background of cognitive and affective mechanisms, and their interaction.

The recent studies have been conducted on emotional information processing: 1. how affective states modulate attention and decision-making; 2. what attributes (valence, arousal, both or other features) have a key role in this modulation effect; 3. individual differences in emotional information processing.

Another research topic is the brain activation responding to emotionally evocative stimuli from the International Affective Picture System (IAPS).



György Révész



Anita Deák

DEPARTMENT OF COGNITIVE- AND
NEUROPSYCHOLOGY,
INSTITUTE OF PSYCHOLOGY, UNIVERSITY
OF SZEGED



FOUNDED BY HILDEBRAND
DEZSŐ VARKONYI IN 1929

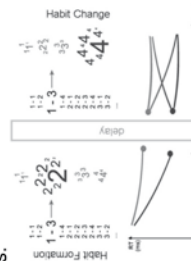
The Institute is located at the campus of the Faculty of Arts. It is the longest-standing psychology institute in Hungary (founded in 1929).

The Cognitive Science and Neuropsychology Program has been organized by Csaba Pléh, in 1999, at the Institute of Psychology, University of Szeged.



Eszter
CSÁBI
Assistant professor

There is a growing body of evidence suggests that sleep contributes to the consolidation of memory by the enhancement of the neuronal plasticity, which leads to the memory representation being more resistance to interference and forgetting. The beneficial effect of sleep on memory consolidation has not been comprehensively characterized so far. Our investigations focus on the relationship between sleep and different memory processes to clarify this question. Furthermore, we investigate the effect of daytime nap on memory functions, the effect of sleep deprivation on memory processes by examining patients with sleep pathologies and shift workers.



Emese
HALLGÁTÓ
Assistant Professor

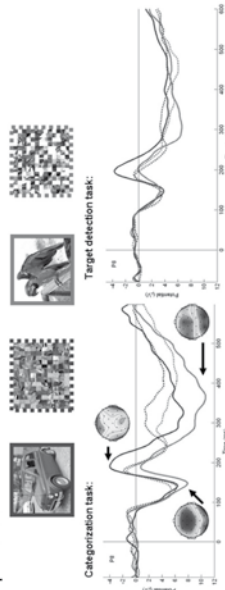


A very important deal of our daily cognition occurs automatically or even without us being aware of it. This kind of knowledge is evident in some of our skills or habits that we gain without intention, or intentionally but without having a conscious control of the learning process. We investigate the amount of practice that is needed for participants to gain implicit knowledge that is profound enough to consider it a habit, and we are also interested in how much new learning is necessary to change this habit into a new one.

The EEG Lab at the Institute of Psychology, University of Szeged was established in 2009 and named after a world-famous Hungarian neurophysiologist Endre Grastyán. The work at our lab primarily focuses on what determines the recognition and categorization of visual objects. More specifically, we are investigating various aspects of local/global information processing, contextual effects and task-induced modulations during entry-level and superordinate object categorization. In the field of face perception, we are interested in the way how certain personality traits modulate underlying brain processes. Our other main topic relates to the prediction of stimulus characteristics determined by self-paced changes in the visual environment. Within this project, our future aim is to assess if neural correlates of such anticipatory processes are altered in patients with psychotic disorders, primarily schizophrenia.



Gábor
Csifcsák
Head of Lab



Event-related potentials at occipitotemporal sites are clearly modulated by semantic category as soon as 130 ms post-stimulus in the categorization task for intact images, whereas for scrambled, yet recognizable stimuli, amplitude changes are evident only after 250 ms. In the target detection task however, the effect of image category occurs later, after 350 ms. These results have implications in the contribution and task-related modulation of ventral visual areas in local image analysis both in early and late stages of processing.



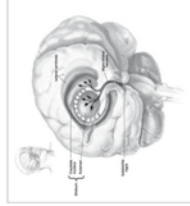
István
WINKLER
Consultant



Tamás
SEFCSIK
Assistant professor

MAIN INTEREST:

- Neuropsychology of neurodegenerative disease
- The role of cerebellum and basal ganglia in cognitive processes
- Risk of postpartum depression
- The effect of carotid stenosis on cognitive functioning and anxiety



Ágnes
Szokolszky

Is Head of the Cognitive and Neuropsychology Department, currently designated for a one-year term. She is habilitated associate professor and director of the Institute of Psychology. She is member of the Cognitive Science and Neuropsychology Group since 1999. Her main research interests are in theoretical and historical aspects of psychology and cognitive science, ecological psychology and embodiment.

MAIN INTEREST:

- Measuring working memory and executive functions after stroke
- Neglect
- Investigating the neuropsychological background of Sclerosis Multiplex developmental disorders
- Age-related changes in verbal fluency across the lifespan



Tímea
TÁNCZOS

PRESENTATION OF HUNGARIAN COGNITIVE PSYCHOLOGY

Department of Cognitive Science



Budapest University of Technology and Economics

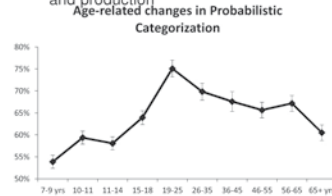
Psycholinguistics Research Group

Non-linguistic cognitive functions in language acquisition and language processing:

- motor organization, executive functions and implicit learning in Specific Language Impairment (SLI)
- Effects of individual differences in working memory and cognitive control on processing and production



Agnes Lukács (PI) and Ferenc Kemény



Implicit learning: Artificial Grammar Learning, Probabilistic categorization, Serial Reaction Time Task

- Lifespan development
- Modality-, domain- and stimulus dependence
- SLI, Parkinson's syndrome, Aphasia

Visual Neurosciences Group

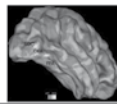
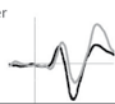
POSITION SPECIFICITY TEMPORAL CONTEXT
 PREDICTIVE CODING N170 FACES fMRI EEG/ERP
 REPETITION SUPPRESSION OBJECTS NOISE PROCESSING
NEURAL BASES OF VISUAL PERCEPTION
 PROSOPAGNOSIA MULTIMODAL PROCESSING PRIMING PSYCHOPHYSICS
ADAPTATION INTER-INDIVIDUAL DIFFERENCES
 FACE AFTEREFFECTS REPETITION SUPPRESSION DECISION MAKING
 SENSORY AND BIASED COMPETITION
 TRANSCRANIAL DIRECT CURRENT STIMULATION



Gyula Kovács
Head



Márta Zimmer
PI

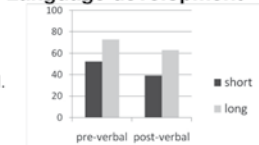


Experimental Pragmatics Research Group

Language processing: information packaging and scalar implicatures

- The fuzzy line between semantic and pragmatic meaning: The effects of context, motivation and cognitive load.
- Gricean versus Relevance Theoretic models of pragmatic competence

Language development



- Young children's apparent insensitivity to implicatures
- Pragmatic development and Theory of Mind



Anna Babarczy, PI

Neuroimaging Research Group

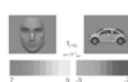
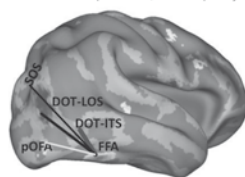
MAIN INTEREST: Neural plasticity, visual attention and object recognition

- Noise and irrelevant information suppression in the human brain
- Characterizing object-selectivity of the temporal cortex using functional connectivity
- Attentional selection during reading in normal and dyslexic subjects
- Studying visual perception during free viewing using fixation-related potentials
- Exploring and characterizing the neural backgrounds of amblyopia as a model of visual suppression

APPROACH: fMRI: uni- and multivariate analyses, connectivity analyses; EEG: event- and fixation related potentials, time-frequency analyses.



Zoltán VIDNYÁNSZKY
Head of the group



Learning & Memory Research Group

TOPICS:

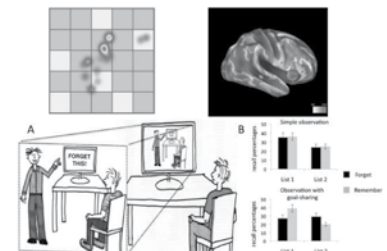
- Control processes in memory retrieval
- Retrieval and memory consolidation
- Working memory
- Memory functions in psychiatric and neurological disorders

METHODS:

- behavioural paradigms
- neuropsychological methods
- eye-tracking
- fMRI



Mihály Racsmány
head of the group





Laboratory for Cognition, Perception & Clinical Neuroscience

at the University of Szeged, Kecskemét County Hospital,
and National Psychiatry Center, Hungary



Nikoletta Bódi



Einat Levy-Gigi



Imola Seres



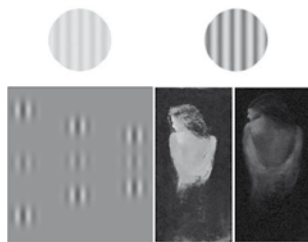
Oguz Kelemen



Szabolcs Kéri

The main questions we ask: Can cognitive science contribute to the understanding of neuropsychiatric disorders? Is there an interface with molecular neuroscience? We are interested in:

- how patients with schizophrenia sense the world
- how representations of visual categories are changed in Parkinson's and Alzheimer's disease
- how trauma, such as natural disasters and terror attacks, affects context in learning and perception



Dysfunctions of basic visual processes (contrast detection, perceptual organization) contribute to reality distortion in schizophrenia. This is modulated by a translation regulator, *Fragile X Mental Retardation Protein*, and a growth factor, *Neuregulin 1*, which are implicated in neurodevelopment and synaptic plasticity.

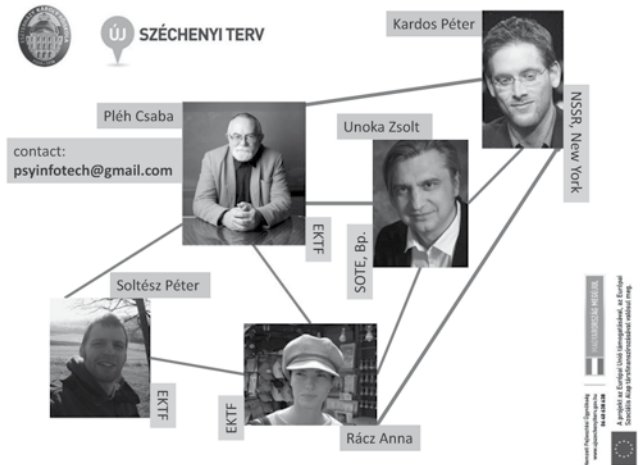
Alpha-synuclein, a key factor in neurotransmitter release and in the pathogenesis of Parkinson's disease, modulates how we learn from:



and



Survivors of trauma fail to establish context in rapid scene perception and recognition, similarly to pre-Alzheimer's. Cognitive behavioral therapy may ameliorate this deficit via the cortisol-receptor modulator *EMRP5* in the hippocampus.



ego-network, social-space and psychopathology

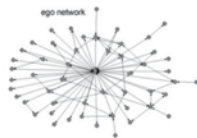
How do ICT (Info-Communication Technology) and modern software environment change our social space, interpersonal communication and relationships?

How does relationship quality affect social network organization and mental problems?

How do childhood experience and attachment style shape, through the development of relationship schemas, adult social networks?

Does the dominant attachment style determine every relationship in the individual's network or are other attachment models distributed in one's social network and selectively activated in different ego-alter relationships?

contact:
psyinfotech@gmail.com



impact of ICT on learning & multitasking



The changing role and value of multitasking in the ICT environment

How does ICT technology affect learning and productivity, especially in multitasking environments?

What kind of impact does ICT have on student's learning styles and habits?

Does ICT change how we acquire, store and retrieve different types of information?

How can we categorize multitasking behaviors?

Is multitasking a choice or necessity in modern ICT interaction?

What are the psychological consequences of, as well as the individual differences in, multitasking preferences?

contact:
psyinfotech@gmail.com

ICT impact on relationships & emotions



How and why do the physical presence of mobile devices, or lack thereof, influence mental and emotional states as well as behavior?

contact:
psyinfotech@gmail.com

...external memory aids might only help us extend our social network on the emotional periphery.

consequences

...mobile devices and their contact lists serve as external memory aids in helping recall more personal relationships. However, these additional relationships are emotionally less important than those recalled without these aids.

results

Analysing ego-network data, we found that attachment styles (ABCD model), relational models (Fiske) and relational closeness are closely related.

Suicidal patients reported significantly less active relationships and perceived lower average support in their personal networks.

contact:
psyinfotech@gmail.com

The number and supportiveness of close relationships correlated with Early Maladaptive Schemas (Young)

ongoing research

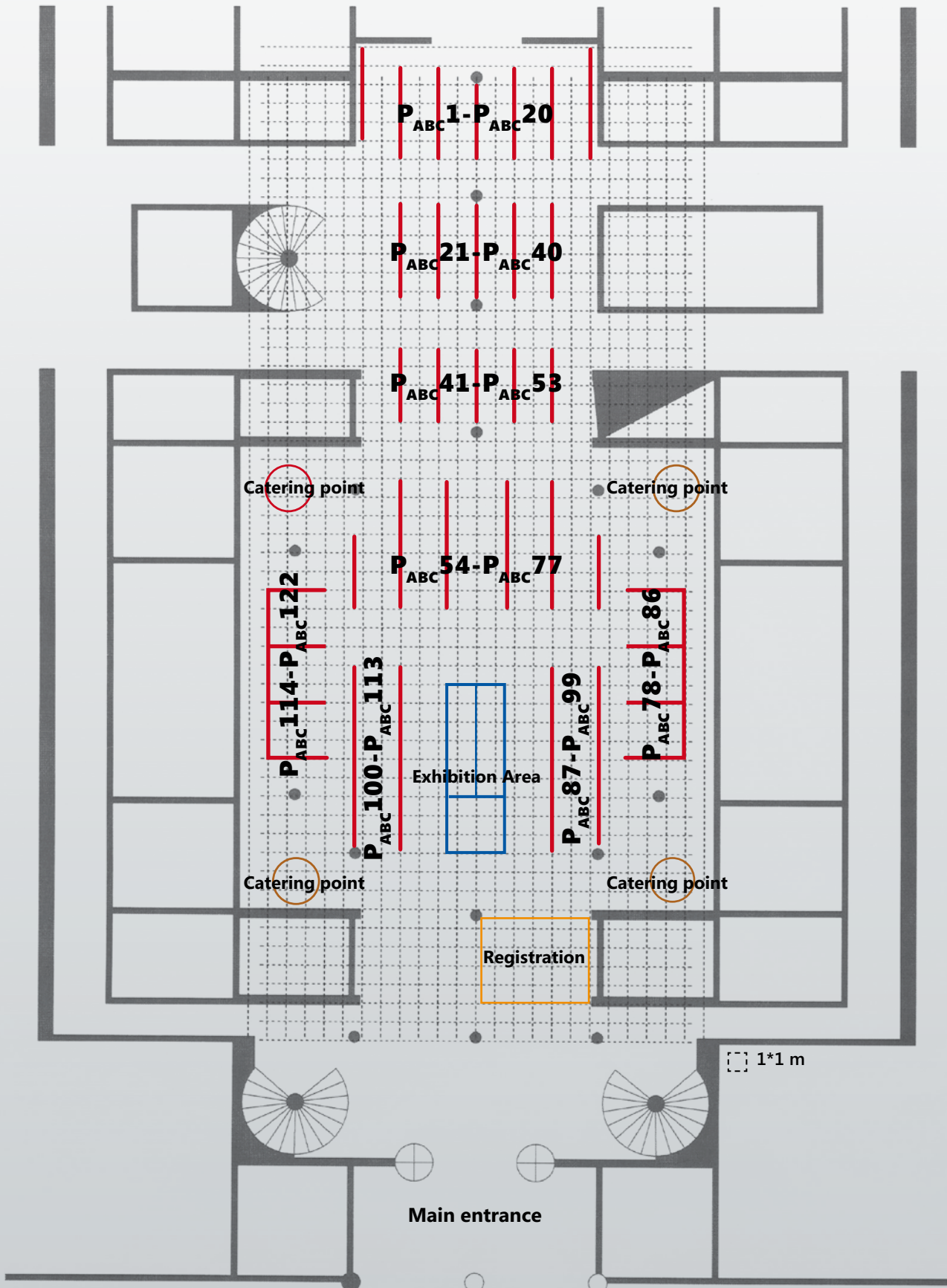
- ❖ mapping ego-networks with Dunbarian and other name generators
- ❖ online self-reported questionnaire on ICT use in preparing for exams
- ❖ testing the effects of multitasking on task speed and accuracy
- ❖ online research of children's ICT use, cognitive skills and achievement

Suicide prevention therapies should partly focus on widening the support-group of the individual and correcting Early Maladaptive Schemas

conclusions

results & ongoing research

POSTER MAP



ESCOPE 2013
18TH MEETING OF THE
EUROPEAN SOCIETY FOR COGNITIVE PSYCHOLOGY
AUGUST 29 – SEPTEMBER 1, 2013 – BUDAPEST, HUNGARY

