

UNIVERSITÀ DEGLI STUDI DI VERONA

Dipartimento di Scienze Umane

PhD School of Verona University

PhD Course in Human Sciences

XXXVI° Cycle

Online intergroup contact:

the role of Allport's conditions for majority and minority group members

S.S.D. (Disciplinary Sector) M-PSI/05 – Social Psychology

Coordinator: prof. Chiara Sità

Supervisors: prof. Elena Trifiletti, prof. Inga Jasinskaja-Lahti

PhD Candidate: Martina Faccini

Abstract

Online interactions have become central in today's digital age. Importantly, they provide social psychologists with new tools to tackle prejudice reduction among different social groups. Initial evidence shows that online contact has the potential to reduce conflicts between majority and minority groups. However, as it is quite clear for the offline environment, simple contact does not automatically lead to improved social relationships. On the contrary, negative consequences are also possible, as suggested by Gordon Allport (1954), who identified four optimal conditions that facilitate prejudice reduction through face-to-face intergroup contact: equal status, cooperation, common goals, and authority support. Although few scholars have recently turned to the investigation of online contact, we still know little about which variables play a distinctive role and about its consequences on the relationships between majority and minority social groups. More specifically, it is not yet clear whether Allport's conditions play a role in facilitating the effects of contact on prejudice even when intergroup interactions occur online. Furthermore, research on online intergroup contact has recently broadened its focus to intergroup relations between people with different sexual orientations. However, there is not yet sufficient evidence to draw firm conclusions about its effects in this intergroup context. Consequently, this thesis aims to investigate the role played by Allport's conditions in the intergroup contact that takes place online, with particular attention to the differences in their effect on sexual majority and minority social groups. To this end, this work is composed of three studies. Study 1 is a systematic review of the literature on online intergroup contact, which aimed to review studies investigating intergroup contact in online settings, with particular attention to the involvement of majority and minority social groups and the investigation/implementation of Allport's conditions in the contact. Results showed that studies on structured online contact implemented the conditions in very different and sometimes not comparable ways, that no studies have tested the effects of contact by comparing the presence with the absence of the conditions, and that no correlational study has investigated their effect in spontaneous and unstructured online contact. Results also showed that social minorities are widely underrepresented in online intergroup

contact literature. Based on this evidence, Study 2 aimed to understand the role played by Allport's conditions in an online intergroup structured interaction for sexual majority and minority social groups. To this end, we developed an intervention in which heterosexual and gay/bisexual participants ($N = 149$) interacted through a pre-programmed chat with an outgroup member in one of the three experimental conditions: Allport's conditions *activated*, Allport's conditions *not activated*, or control. Results showed that participants who interacted with the outgroup member when Allport's conditions were *activated* reported more favorable intergroup attitudes than those who interacted with the outgroup member when Allport's conditions were *not activated* and the control group. Furthermore, only when minority participants were added to the sample was this positive effect of the conditions also found on intergroup empathy. Finally, Study 3 aimed to investigate the role played by Allport's conditions in online intergroup unstructured interactions on social media for sexual majority and minority social groups. To this end, heterosexual ($n = 199$) and gay/lesbian ($n = 90$) participants completed an online survey to assess the quality of online contact, Allport's conditions, and intergroup outcomes. Results showed a three-way interaction between quality of contact, group status, and two of the four Allport's conditions, namely common goals and equal status. For minority participants, when common goals and equal status were perceived as stronger, the positive relation between the quality of online contact and outgroup trust increased (while it decreased for majority participants). Looking at the overall results, the effect of Allport's conditions in online intergroup contact, both structured and unstructured, appears to be quite weak. However, the role of the conditions seems more important for the minority social group. Although two studies are not sufficient to draw definitive conclusions, the present work carried out for the first time an empirical investigation of the role of Allport's conditions in both structured and unstructured online contact, comparing a majority and minority group.

Sommario

Le interazioni online sono oggi diventate centrali ed il loro sviluppo fornisce agli psicologi sociali un nuovo strumento per indagare la riduzione dei pregiudizi tra diversi gruppi sociali. Le prime evidenze mostrano che il contatto online ha il potenziale per ridurre i conflitti tra gruppi di maggioranza e minoranza. Tuttavia, come è ormai chiaro per le interazioni offline, il semplice contatto non porta automaticamente ad un miglioramento delle relazioni sociali, ma sono possibili anche conseguenze negative, come suggerito da Gordon Allport (1954), che ha identificato quattro condizioni ottimali che facilitano la riduzione dei pregiudizi attraverso il contatto intergruppi faccia a faccia: parità di status, cooperazione, obiettivi comuni e sostegno dell'autorità. Sebbene alcuni studiosi si siano recentemente dedicati allo studio del contatto online, sappiamo ancora poco su quali variabili giochino un ruolo chiave e sulle sue conseguenze sui rapporti tra gruppi sociali di maggioranza e minoranza. Nello specifico, non è ancora chiaro se le condizioni di Allport svolgono un ruolo nel facilitare gli effetti del contatto sul pregiudizio anche online. Inoltre, la ricerca sul contatto intergruppi online ha recentemente ampliato la propria attenzione nella direzione delle relazioni intergruppi tra persone con diversi orientamenti sessuali, tuttavia, non ci sono ancora prove sufficienti per trarre conclusioni definitive sui suoi effetti in questo contesto intergruppi. Lo scopo di questa tesi è quello di indagare il ruolo svolto dalle condizioni di Allport nel contatto intergruppi online, con particolare attenzione alle differenze nel loro effetto per i gruppi sociali di maggioranza e minoranza. A tal fine, il presente lavoro si compone di tre studi. Lo Studio 1 è una revisione sistematica della letteratura che ha avuto l'obiettivo di raccogliere gli studi che hanno indagato il contatto intergruppi online, con particolare attenzione al coinvolgimento di gruppi sociali di maggioranza e minoranza e all'indagine/implementazione delle condizioni di Allport. Dai risultati è emerso che gli studi sul contatto online strutturato hanno implementato le condizioni in modi molto diversi e talvolta non comparabili, che nessuno studio ha testato gli effetti del contatto confrontando la presenza con l'assenza delle condizioni, e che nessuno studio correlazionale ha indagato il loro effetto nel contatto online spontaneo e non strutturato. È emerso inoltre che le minoranze sociali sono

ampiamente sottorappresentate nella letteratura sul contatto online. Sulla base di queste evidenze, lo Studio 2 ha avuto l'obiettivo di comprendere il ruolo svolto dalle condizioni di Allport in un'interazione intergruppi online strutturata, per un gruppo sociale di maggioranza e di minoranza. A tal fine, è stato sviluppato un intervento in cui partecipanti eterosessuali e gay/bisessuali ($N = 149$) hanno interagito attraverso una chat pre-programmata con un membro dell'outgroup in una delle tre condizioni sperimentali: condizioni di Allport *attivate*, condizioni di Allport *non attivate* o controllo. I risultati hanno mostrato che i partecipanti che hanno interagito con il membro dell'outgroup quando le condizioni di Allport erano *attivate* hanno riportato atteggiamenti intergruppi più favorevoli rispetto ai partecipanti che hanno interagito quando le condizioni di Allport *non* erano *attivate* e al gruppo di controllo. Inoltre, solo quando i partecipanti di minoranza sono stati aggiunti al campione, l'effetto positivo delle condizioni è stato riscontrato anche sull'empatia intergruppi. Infine, lo Studio 3 ha avuto l'obiettivo di indagare il ruolo svolto dalle condizioni di Allport nelle interazioni intergruppi online non strutturate sui social media per un gruppo sociale di maggioranza e minoranza. Partecipanti eterosessuali ($n = 199$) e gay/lesbiche ($n = 90$) hanno completato un sondaggio online in cui sono stati indagati la qualità del contatto online, le condizioni di Allport e gli atteggiamenti e la fiducia intergruppi. I risultati hanno mostrato un'interazione a tre vie tra la qualità del contatto, lo status del gruppo e due delle quattro condizioni di Allport, ovvero obiettivi comuni e parità di status. Per i partecipanti di minoranza, quando gli obiettivi comuni e la parità di status erano percepiti come più forti, la relazione positiva tra qualità del contatto online e fiducia intergruppi aumentava (mentre diminuiva per i partecipanti di maggioranza). L'effetto delle condizioni di Allport nel contatto intergruppi online, sia strutturato che non strutturato, sembra essere abbastanza debole. Tuttavia, il ruolo svolto dalle condizioni sembra più importante per il gruppo sociale di minoranza. Sebbene due studi non siano sufficienti per trarre conclusioni definitive, il presente lavoro ha operato per la prima volta un'indagine empirica del ruolo delle condizioni di Allport nel contatto online sia strutturato che non strutturato, mettendo a confronto un gruppo di maggioranza e di minoranza.

Content Index

Abstract	3
Sommario	5
Content Index	7
Introduction	10
Chapter 1. Theoretical background	11
Intergroup Contact Theory.....	11
<i>Intergroup Contact Hypothesis: the origins</i>	11
<i>Intergroup Contact Hypothesis: the optimal conditions</i>	12
<i>Intergroup contact: generalization of the effects</i>	14
<i>Intergroup contact effects: mediation processes</i>	15
<i>Intergroup contact effects: moderation processes</i>	17
<i>When direct contact is difficult to achieve: indirect contact</i>	18
<i>Negative intergroup contact</i>	21
Intergroup contact for majorities and minorities.....	22
<i>The disparity</i>	22
<i>Allport's conditions for majorities and minorities</i>	26
Online intergroup contact.....	27
<i>Why move intergroup contact online</i>	27
<i>Online intergroup contact and Allport's conditions</i>	30
<i>Investigating structured vs unstructured online intergroup contact</i>	32
<i>Effects of online intergroup contact: first meta-analytic evidences</i>	34
The present research: aims and overview of the studies.....	37
Chapter 2. Online intergroup contact: a systematic review	42
Method	43
<i>Research questions</i>	43
<i>Procedure and inclusion criteria</i>	43
Results	47
<i>General characteristics of the studies</i>	50
<i>Majorities and minorities in the online intergroup contact</i>	61
<i>Implementation or measurement of the Allport's conditions</i>	63
Discussion	65

<i>General characteristics of the studies</i>	66
<i>Majorities and minorities in the online intergroup contact</i>	68
<i>Implementation or measurement of the Allport's conditions</i>	70
<i>Conclusion</i>	72
Chapter 3. Online intergroup contact: an experimental test of Allport's conditions	74
Method	79
<i>Participants</i>	79
<i>Procedure</i>	80
<i>Materials and measures</i>	82
<i>Analytical approach</i>	87
Results	87
<i>Manipulation checks</i>	87
<i>Main analysis</i>	90
Discussion	92
Chapter 4. Online intergroup contact: Allport's conditions on social media	98
Method	102
<i>Participants</i>	102
<i>Procedure</i>	102
<i>Measures</i>	102
<i>Analytical Approach</i>	104
Results	104
Discussion	112
Chapter 5. Discussion and conclusion	115
Overview of main aims and results of the thesis	115
The role of Allport's conditions in online contact	117
Online contact and Allport's conditions for minorities.....	118
Limitations and future directions for online contact research	119
Reference list	123
Footnotes	147
Acknowledgements	148

Introduction

Given the significant increase in the use of digital devices that characterizes today's society, interactions and exposure to diversity are mediated mainly by these means, offering social psychologists a new environment to investigate intergroup contact dynamics. Initial evidence shows that online contact has the potential to reduce conflicts between majority and minority groups. However, we still know little about which variables play a distinctive role and their consequences on the relationships between majority and minority social groups. More specifically, it still needs to be determined whether Allport's conditions (cooperation, common goals, equal status, and authority support) play a role in facilitating the effects of contact on prejudice, even when intergroup interactions occur online. Furthermore, research on online intergroup contact has recently broadened its focus to intergroup relations between people with different sexual orientations. However, insufficient evidence exists to draw firm conclusions about its effects in this intergroup context. Consequently, this thesis aims to investigate the role played by Allport's conditions in the intergroup contact that takes place online, focusing on the differences in their effect on sexual majority and minority social groups. The work will begin with an in-depth theoretical discussion on the intergroup contact theory, exploring the inequality between majority and minority groups and online intergroup contact. Subsequently, the research will be presented. Study 1 is a systematic review of the literature on online intergroup contact, which aimed to review studies investigating intergroup contact in online settings, focused on the involvement of majority and minority social groups and the investigation/implementation of Allport's conditions in the contact. Study 2 aimed to understand the role played by Allport's conditions in an online intergroup structured interaction for sexual majority and minority social groups. Study 3 aimed to investigate the role played by Allport's conditions in online intergroup unstructured interactions on social media for sexual majority and minority social groups. Finally, the results of the studies and possible implications for future research will be discussed.

Chapter 1. Theoretical background

Intergroup Contact Theory

Intergroup Contact Hypothesis: the origins

Intergroup conflict is one of the most important challenges of past and present times. In a broad sense, conflict between groups involves not only wars but also social situations characterized by negative treatment and discrimination based on group belonging.

The first historical reflections on this theme were characterized by a strongly pessimistic view: each ingroup's sense of superiority was the natural and inevitable cause of the cross-group hostility, and any contact between groups has conflict and hostility as natural consequences (Sumner, 1906). The perception of social scientists began to be more optimistic only after the Second World War, with the early developments of scientific research in this field. A first critical reflection on the topic was made by Williams (1947), who listed four critical contact conditions that predicted positive contact's effects. According to its formulation, the contact would have had more positive effects when a similar status was shared by the two groups, an intimate and personal intergroup contact was fostered by the situation, the participants were not stereotypical representatives of their group, and, finally, the contact activities crossed group lines. Then, field research by Stouffer and colleagues (1949) was set during the Second World War in 1944-1945 in the Battle of the Bulge in Flanders to demonstrate that White American soldiers' racial¹ attitudes would have been improved by fighting side by side with African Americans. This contact worked for different groups of soldiers (officers and enlisted men, Southerners and Northerners) but had the limit of not being extended to post-war situations. Another important large-scale field research was conducted in North America by Deutsch and Collins (1951). They interviewed White housewives across two different public housing projects' situations: the first was characterized by White and Black residents assigned to apartments in separate buildings (segregated). In contrast, in the second, the resident assignment was random (desegregated). The results showed that White housewives in the desegregated project expressed higher esteem for the

Black neighbours, reporting more positive contact with them and greater support for interracial housing in general.

Intergroup Contact Hypothesis: the optimal conditions

As explained by Pettigrew (2021), these three studies have been fundamental in influencing the development of the thought of who would later become the father of the Intergroup Contact Hypothesis: Gordon Allport. According to Allport, one of the main causes of intergroup conflict can be found in the existence of prejudices between different social groups. Prejudice can be defined as an “aversive or hostile attitude toward a person who belongs to a group, simply because he belongs to that group, and is therefore presumed to have the objectionable qualities ascribed to the group” (Allport, 1954, p. 8). Given its negative influence on intergroup relations, Allport was looking for strategies to decrease the level of prejudice, so he started to consider intergroup contact’s positive effect on prejudice reduction. His original hypothesis was then effectively summarized by Pettigrew (1998) in what is now known as the Intergroup Contact Theory. The theory lists four optimal conditions in which intergroup contact can effectively lead to more positive intergroup relations.

At first, contact effects are optimized when the interaction involves members of different groups who have relatively *equal status* in terms of power, influence, or social prestige within the contest of contact. Most research support this concept, although it is difficult to clearly define what the situation of equal status is (Pettigrew, 1998). An important aspect is that in the contact situation both groups should perceive and expect equal status (e.g., Cohen & Lotan, 1995). Some authors (e.g., Brewer & Kramer, 1985) emphasized equal group status coming into the situation and others (Riordan & Ruggiero, 1980) reflected on the fact that it is difficult to achieve equal status within the contact situation without considering pre-existing status differences between the groups involved. Of course, it is difficult to satisfy the equal status condition, and groups of equal status can themselves become competitive with the purpose of achieving positive and distinct identities (Tajfel & Turner, 1979); moreover, individuals can also perceive the future prospect of equal group status as threatening in

contact settings (Saguy et al., 2013). Furthermore, Jackman and Crane (1986) showed negative effects of contact with outgroup members of lower status. Finally, Mullen and colleagues' (1992) meta-analysis showed that intergroup bias increases with relative status in laboratory groups, however an opposite pattern was observed in field studies with real groups. Despite the difficulties in defining status equity and achieving it, this condition continues to be implemented in research on intergroup contact, and to be considered fundamental.

The second optimal condition occurs when groups are encouraged to pursue *common or shared goals*. In other words, the only type of contact that is likely to result in a change of attitudes is the one that leads people to do things together, therefore, the reduction of prejudice requires a goal-oriented and active effort. Athletic teams provide a clear example of this (Chu & Griffey, 1985): considering that interracial teams strive to win, they need each other to achieve this common goal. Goal attainment in turn (e.g., a winning season) facilitates the whole process (Pettigrew, 1998).

The third optimal condition considered by Allport (1954) is *cooperation* between groups. To make this condition occur, common goals attainment must be an interdependent effort without intergroup competition (Bettencourt et al., 1992). This condition was also tested by Sherif (1966) in his famous study called Robbers' Cave. In a phase of the experiment, participants belonging to two different groups were invited to cooperate to achieve a series of common goals. It was shown that aggression and competition between ingroup and outgroup decreased, albeit several situations of such positive interdependence were needed to achieve this result. Another evidence is provided by intergroup cooperation in schools (Brewer & Miller, 1984) and a clear example is the jigsaw classroom technique (Aronson & Patnoe, 1997), which structures classrooms so that students attempt cooperatively to reach common goals.

The second and third conditions are more intuitive and can be considered as interdependent: although groups may have distinct or divergent goals that can be mutually satisfied through cooperation, mutual goals and cooperation are commonly positively correlated, with the benefit of

contact most fully realized when these factors are congruent with the pursuit of common goals through intergroup cooperation (Hodson & Hewstone, 2013).

Finally, the fourth condition is *socialized and institutionalized support* for positive intergroup relations (Allport, 1954). In other words, explicit social approval makes intergroup contact more readily accepted and leads to more positive effects because the support of the authority establishes norms of acceptance (Pettigrew, 1998). Several studies confirm the importance of this support in military (Landis et al., 1984), business (Morrison & Herlihy, 1992) and religious institutions (Parker, 1968). An example of authority support comes from the work of Novak and Rovan (2010), that considered the social integration of employees with disabilities in the workplace. They argued that authority support is present when “management and direct supervisors unequivocally support the integration of employees with disabilities at the worksite” (p. 34) as for example when “supervisors take full responsibility for employees with disabilities and include them in staff meetings and company-sponsored social activities”.

Allport’s contact hypothesis has been consistently supported over the last decades across a variety of situations, societies and groups, even though intergroup contact has shown positive effects also when the four optimal conditions were not satisfied (Pettigrew, 1998; Pettigrew & Tropp, 2006, 2008, 2011).

Intergroup contact: generalization of the effects

A further question relating to the effects of intergroup contact concerns the possibility of understanding whether these effects can be generalized beyond the contact situation. Pettigrew (1998) identifies three forms of attitude generalization. The first, is about whether attitudes toward an outgroup generalize *across situations*. First evidences showed that only the cumulative effect of repeated optimal situations alters one’s attitudes towards the outgroup. For example, the research on the Second World War showed that there was a major improvement in Whites’ attitudes toward Black soldiers after fighting together (Stouffer et al., 1949), but later Whites continued to favour a racially

separate mode. Indeed, the program of racial desegregation worked only when the US army offered many optimal interracial situations (Moscovici & Butler, 1996). Second, whether a change in attitudes toward an outgroup member generalizes *to the outgroup as a whole*. Hewstone and Brown (1986) stated that contact effects are generalized to the outgroup only if group membership is salient in the context of the contact. On the contrary, no intergroup effects should result when group salience is low because the situation is interpersonal. Indeed, only when the interactants are viewed as group representatives from others, the contact becomes an intergroup event (Hewstone & Brown, 1986). Research that supports this salient categorization strategy demonstrates that stereotype change generalizes in a better way to the intergroup level when the individuals who are involved are typical group members (Johnston & Hewstone, 1992). Finally, whether attitudes generalize *from one outgroup to another, uninvolved outgroup*. The two forms cited above are included in this higher-order form, which was seldom investigated in past research, mainly because many scholars considered it as unlikely. Nonetheless, it has been shown that such generalization is possible, for example, having an outgroup friend is related to greater acceptance of different types of minorities (Pettigrew, 1997).

Intergroup contact effects: mediation processes

One of the first questions that researchers asked themselves in relation to intergroup contact is how it improves attitudes toward the outgroup. To answer to this question, researchers tested a wide range of mediation processes. Pettigrew and Tropp (2008), in a meta-analytic test of three mediators, showed that contact reduces prejudice by enhancing knowledge about the outgroup, reducing anxiety about intergroup contact, and increasing perspective taking and empathy. As reported by Pettigrew (1998), the initial theory regarded the process of enhancing knowledge about the outgroup as the most important mechanism through which intergroup contact affects attitudes towards the outgroup. According to this view, contact reduces prejudice because new learning replaces negative views about the outgroup with more positive opinions. Rothbart and John (1985)

concluded that stereotypes are altered by disconfirming evidence only if a positive behaviour of an outgroup member is inconsistent with the stereotype, occurs often in many situations, and outgroup members are seen as typical. However, most contact situations do not respect these criteria. Indeed, although mediational effects were revealed for all the three mediators, the mediational effect of increased knowledge was found to be weaker than those of anxiety reduction and empathy (Pettigrew & Tropp, 2008). As to *intergroup anxiety*, many studies have demonstrated that intergroup contact typically reduces intergroup threat and anxiety (e.g., Blascovich et al., 2001; Paolini et al., 2007; Voci & Hewstone, 2003). Despite threat and anxiety are typically evoked by interactions with people perceived as different (Blascovich et al., 2001), it has been found that White people who had contact with members of other racial/ethnic groups demonstrated lower levels of self-reported anxiety and stress compared to White people who had no contact experience (Blascovich et al., 2001). Finally, intergroup contact, in particular in the form of cross-group close friendship, has been found to increase *perspective taking and empathy*. In other words, positive intergroup interactions may enable individuals to take the perspective of outgroup members and empathize with them. The new perspective in turn could contribute to improved intergroup attitudes, acting as a mediator of intergroup contact effects (Batson et al., 2005). These findings are consistent with other results that show how self-expansion processes can be involved in intergroup contact. In this process, individuals extend their sense of self to include the outgroup (Aron & McLaughlin-Volpe, 2001). Similarly, in an experimental setting it has been found that perspective taking leads to more favourable racial attitudes (Vescio et al., 2003). These perspectives are also in line with McFarland's (1999) research that, using both adult and student samples, shows that empathy is an important negative correlate of prejudice. Another important mediator that has been considered in the intergroup contact literature is *self-disclosure*, which can be described as an act of voluntarily providing a personal or intimate information to another person (Omarzu, 2000). Research in this field has shown that negative bias toward the outgroup is reduced through self-disclosing information to an outgroup member (Ensari & Miller, 2002). Self-disclosure has been also shown to have a negative effect on intergroup anxiety,

as well as a positive effect on intergroup empathy (Tam et al., 2006). Finally, also *common ingroup identification* has been proven as an important mediator for the effect of contact on attitudes towards the outgroups. The Common Ingroup Identity model (CIIM) developed by Gaertner and Dovidio (2000), stated that contact between different groups can be more effective in the improvement of intergroup relations when the intergroup situation is recategorized by the members of the interacting groups. In particular, the common identity will be activated when the members of the groups perceive themselves as members of a more inclusive common group, which includes both. This way, intergroup bias emerging from the categorization in different groups would be reduced, because outgroup members become perceived as ingroup members. Many experimental (Gaertner et al., 1989), longitudinal (Levin et al., 2009), and cross-sectional (Gaertner et al., 1994) studies, supported the importance of the Common Ingroup Identity in the improvement of intergroup relations.

Intergroup contact effects: moderation processes

As with mediating processes, researchers have investigated many moderators of contact effects. The two individual difference variables of Social Dominance Orientation (SDO; Sidanius & Pratto, 1999) and Right-Wing Authoritarianism (RWA; Duckitt et al., 2002) are considered especially important in intergroup relations, and it has been hypothesized that they might play a role in the tendency to justify prejudice (Hodson & Esses, 2005). Individuals who are high in SDO tend to view the world as a competitive place where only the toughest will survive. Inequality among social groups and group hierarchies are supported by individuals with high levels of SDO, and intergroup relations are viewed in terms of social competition. Moreover, they have the tendency to express aggressiveness against other groups to attain or maintain social dominance (Pratto, 1999; Sidanius & Pratto, 1999). Individuals high in RWA are inclined to see the world as a dangerous place, where conformity to social relations is required (Duckitt et al., 2002). RWA has been defined as the willingness to defer to authority, to adhere to traditional social convention and tradition, and to aggress against threatening outgroups, with the aim of managing insecurity and fear (Altemeyer,

1996). Authoritarians “may feel justified in their prejudices because of the direct threat to them and the status quo they perceive from groups attempting to improve their lot through social change” (Crandall & Eshleman, 2003, p. 426). A study by Hodson and Esses (2005) showed that SDO and RWA correlated strongly with prejudice. Individuals higher in SDO and RWA are particularly high in ethnic prejudice, less disposed to blame prejudice on negative personal factors (e.g., ignorance) and prefer to indict the society at large. It is important to note that even if individuals who reported higher levels in RWA or SDO tend to be inclined to avoid contact with people from different social groups (e.g., Dhont & Van Hiel, 2009; Pettigrew & Tropp, 2011), they benefit more from this contact. For example, a study by Hodson (2008) demonstrated that White British prisoners higher (vs. lower) in SDO reported lower levels of intergroup bias, after having experienced contact with Black inmates. Similarly, another study (Dhont & Van Hiel, 2009) showed that positive contact with immigrants was strongly and negatively related to racism toward this social group among participants higher in SDO or RWA, but not among low SDO and RWA scorers.

When direct contact is difficult to achieve: indirect contact

Interestingly, a meta-analysis by Paluck and Green (2009) noted that contact field experiments are characterized by a general lack of similarity to the contact conditions specified by Allport (1954) and that there is also a tendency to investigate prejudices that may be considered more like unfamiliarity than a dislike, for example attitudes towards people with disability. Furthermore, in many situations such as in the case of segregation contexts, when social norms do not allow interaction, or when belonging to the outgroup is not immediately visible (e.g., religious orientation), direct intergroup contact can be difficult to implement (White et al., 2021). In addition to these direct obstacles, psychological variables such as anxiety or perceived threat can also lead to negative outcomes of intergroup contact (Allport, 1954). In the light of these evidence, researchers began to investigate alternative forms of intergroup contact that could overcome actual obstacles, such as segregation, as well as avoid the negative effects of psychological factors, such as anxiety. These

alternative forms have been defined as *indirect contact*. As explained by White and colleagues (2021), the theory and research on indirect contact aim to investigate how it can lead to a change of attitudes and behaviours, in particular in relation to the social learning of new information that modifies: a) the perception that one has of the outgroup; b) the understanding of group-based norms and social influence processes associated to them; c) the recategorization processes, namely the change in the cognitive representation of the ingroup and the outgroup that generates the perception that ingroup and outgroup members are part of the same superordinate group (e.g., Black and White students perceived as members of the same team). Given its characteristics, indirect contact can be considered a useful tool for the reduction of prejudice in unstructured natural contexts, where direct contact could not arrive (White et al., 2021).

The first form of indirect contact is *extended contact*, which can be defined as knowing an ingroup member who has a friend belonging to the outgroup (Wright et al., 1997). As noted by Eller et al. (2012), people who have direct intergroup contact base their outgroup perceptions on their own direct experience rather than on the other ingroup members' experiences. However, when direct contact is low or absent, awareness that some ingroup members do have outgroup friends should lead to more positive intergroup attitudes and openness to the outgroup. Based on this prediction, they demonstrated that when direct contact is low, higher levels of extended contact predict lower prejudice and higher voluntary engagement with outgroup culture. However, they also demonstrated that when direct contact is high, extended contact does not affect intergroup relations. These results show that only when there is limited opportunity for direct contact, awareness of ingroup-outgroup friendships can be effective for improving intergroup relations (Eller et al., 2012). The effectiveness of extended contact was also demonstrated through a meta-analysis conducted by Zhou and colleagues (2019), who found that the aggregate relationship between extended contact and intergroup attitudes was $r = .25$, and this relation reduced to $r = .17$ after removing direct friendship's contribution. Despite the proven effectiveness of extended contact for improving intergroup relations, a recent review by White and colleagues (2021) has highlighted two important limitations. The first

is that extended contact is actually based on direct contact. In fact, although extended contact itself is indirect, an ingroup member must have had direct contact with an outgroup member for it to occur. However, as has already been mentioned, this becomes difficult to achieve under conditions of segregation. The second limit is that extended contact can be more difficult to implement in prejudice-reduction interventions, compared to other indirect contact strategies (Brown & Paterson, 2016), precisely because it requires the participant to have an acquaintance within the ingroup who in turn has a friendly relationship with a member of an outgroup.

A form that can be more easily employed in interventions is *vicarious contact*, which can be defined as the simple observation of an ingroup member having a relationship with an outgroup member. As it does not require anyone in one's social network to have direct intergroup contact, but only requires that a person observes or is made aware of an intergroup interaction, it is easier to implement and more practical as an intervention strategy than either direct or extended contact (Brown & Peterson, 2016). Vicarious contact is typically operationalized by asking participants to do different tasks. For example, Mazziotta and colleagues (2011) showed in two video-based experiments that vicarious contact improves attitudes towards the outgroup and increases participants' willingness to engage in direct intergroup contact. Other examples are provided by studies that investigated vicarious contact through the media. Despite the advantages of this type of contact, it also has significant limitations. In fact, intergroup contact shown by the media is not always positive and friendly but, in many cases, it is negative, such as in the case of bad examples reported on the news (Brown & Peterson, 2016).

Another form of indirect intergroup contact is *imagined contact* (Crisp et al., 2009), which can be defined as the mental simulation of a social interaction with an outgroup member. It is based on the idea that mentally simulating a positive contact experience activates concepts normally associated with successful interactions with members of other groups, as for example feeling more comfortable and less apprehensive about the prospect of future contact with the outgroup. This reduced anxiety should in turn reduce negative outgroup attitudes (Crisp & Turner, 2009). Empirical

evidence has shown the effectiveness of this type of indirect intergroup contact. For example, Turner and colleagues (2007) found that participants who were asked to imagine a positive interaction with an outgroup member subsequently expressed more positive attitudes and stereotyped less than participants who did not.

To sum up, the line of research on indirect contact demonstrates that, when there are no possibilities to implement direct intergroup contact interventions, there are also other forms of contact that can be explored and that they still have a positive effect in improving intergroup relations.

Negative intergroup contact

Another aspect of intergroup relations that cannot be ignored is that contacts between people belonging to different social groups are not always positive. On the contrary, especially in informal or unstructured contexts where it is hard to achieve Allport's conditions for optimal intergroup contact (Dixon et al., 2005), contacts with negative connotations can be prevalent. Although negative contact can play a central role in people's everyday lives and has a strong impact on intergroup relations, it has been less investigated than positive contact (Dixon et al., 2005) and intergroup contact research has only recently begun to investigate both types of contact and their interaction, finding that negative contact can cause an increase in prejudice more than positive contact can decrease it (Barlow et al., 2012). One of the first studies on the subject was that of Paolini and colleagues (2010), who demonstrated that negative contact increased the salience of the categorization more strongly than positive contact and – since salience leads to a greater generalization of the effects of the contact to the entire outgroup – it can be inferred that negative contact therefore has stronger effects than positive contact. Then, Barlow and colleagues (2012) found that negative contact has stronger effects on outcomes related to intergroup relations than positive contact, proposing the so called *positive–negative asymmetry* of intergroup contact effects. Nevertheless, evidence about this asymmetry is mixed, with studies supporting it (for a meta-analysis, see Paolini & McIntyre, 2018), others founding

no differences in the positive or negative effects (Árnadóttir et al., 2018), and finally others showing greater effect of positive contact (Brylka et al., 2016).

Furthermore, it is also important to note that in today's digital age, negative contact experiences mainly moved in the online context. Indeed, online interactions have become central in the daily routine of most of the people (Bargh & McKenna, 2004) and online there is the possibility to approach a large amount of material and information, which in turn may lead to increased global presence and availability of negative prejudicial content (Keum & Miller, 2018). Furthermore, according to Keum and Miller (2018), the endurance of this phenomenon is due to many racist materials created by people who took advantage of online anonymity to voice their hate, to the permanence of online contents after they are created and before an action is taken to remove them, and to the enduring helplessness when dealing with some online racist materials produced in virtual spaces without options to discuss the contents. Moreover, due to repeated sharing across users and online communities, online prejudiced materials may become viral content (Becker et al., 2011), also thanks to their advantage of taking different multimedia formats, for example texts, photos, or videos, shaping prejudiced messages in multiple forms and creative ways (Keum & Miller, 2018).

Intergroup contact for majorities and minorities

The disparity

Most of the studies present in the literature on intergroup contact have looked at attitudes of majority members toward minority members, while a smaller number of studies investigate the point of view of the minority or make a comparison between the two parties. For example, a meta-analysis, showed that only 33 studies in a total pull of more than 500 considered participants from both majority and minority social groups (Tropp & Pettigrew, 2005). Findings also showed that the effects of contact were generally weaker for minority group members than for majority group members, even if they remained significant. As Tropp and Pettigrew (2005) suggested, this difference may be due to several reasons. For example, some works (e.g., Devine & Vasquez, 1998; Hyers & Swim, 1998)

have shown that when approaching intergroup interaction, members of majority and minority status groups face different challenges with which they must contend. For example, minority group members' concerns involve becoming the target of prejudice from higher status group members, while majority group members' concerns generally involve being perceived as prejudiced by lower status group members (e.g., Plant, 2004; Plant & Devine, 2003; Shelton, 2003; Stephan & Stephan, 1985; Vorauer et al., 1998). Tropp (2006) also noted that it is fundamental to consider the differences in minority and majority group members' views of the role that group status plays and how this defines relations between them. The author argued that individuals belonging to majority groups are not generally aware of their privileged status (Leach et al., 2002), and they are not inclined to identify with their group (Kim-Ju & Liem, 2003; Pinel, 1999), unless compelled by the demands of their immediate social environment. Conversely, individuals from minority groups often possess an amplified awareness of their group's devalued status. As a result, these regular reminders of their group's devalued status may assume a tangible presence within intergroup relationships from the perspective of minority group members, while these aspects may be less likely to be perceived as inherent to intergroup relationships among those in majority groups. To exemplify this concept, we recall that Black Americans perceive a significantly higher degree of racial discrimination against their group compared to White Americans. On the other hand, most White Americans believe that Blacks in their communities are equally treated. Considering this pattern, it is not particularly surprising that American race relations are often characterized by a prevailing sense of racial mistrust, especially when viewed through the lens of minority status group members (Tropp, 2006). Another fundamental aspect that characterizes the disparity between majorities and minorities in intergroup contact is precisely that of trust. Indeed, members of minority groups are very likely to remain vigilant until they perceive that they can trust higher status outgroup members because they will not engage in stigmatizing and discriminatory behaviours (Tropp, 2006). Trust can be defined as a belief about the benevolence and integrity of another group or another individual (Ferrin et al., 2007). It entails the belief that the other party will attempt to keep commitments, be honest and not take advantage if

given the opportunity (Cummings & Bromiley, 1996). The improvement in the feelings of trust thanks to intergroup contact become particularly important when considering minorities' perspective. Since disadvantaged minority groups are more prone to experience prejudice and discrimination in their everyday interactions with different groups, they are more exposed, compared to majorities, to the risk of developing outgroup distrust (Tropp, 2006). Consequently, a decrease in trust can negatively impact the minority members' interactions with majority group members in many contexts. For example, a study in a high school context by Cohen and colleagues (2004) that investigated the role of trust in both ethnic minority and majority students, found that both minority and majority students reported similar levels of concern about their academic abilities and social anxiety, but ethnic minority students reported greater level of racial mistrust and perceptions of bias against their ethnic group compared to ethnic majority students. Tropp (2008) claimed that investigating relations between majorities and minorities considering the variable of trust can help to understand why intergroup contact is often less useful in improving positive relations for minorities. Indeed, members of majority groups may be viewed with vigilance and suspicion and minority group members may benefit from intergroup contact only if they feel sufficiently confident that majorities can be trusted (Cohen & Steele, 2002). Optimal conditions for intergroup contact proposed by Allport (1954) might have a pivotal role in the improvement of trust via intergroup contact for minorities, given their contribution to the development of good norms about the interaction, creating a more favourable expectations about the interaction with the majority outgroup members. Precisely because of the numerous differences in expectations and in the social roles with which majorities and minorities approach contact, the difference in the effects of contact on intergroup relations becomes understandable, as well as the difference in the variables that are important to investigate for the two different groups. It is therefore considered particularly important to shift the focus to variables that go beyond intergroup attitudes, such as trust, which can play a more relevant role for minority social group.

More recent studies have confirmed the disparity in the effects of intergroup contact between majorities and minorities, extending over a broader set of variables. Indeed, although positive intergroup contact may decrease prejudice that minority group members have toward majorities, it also decreases the perception of their condition of discrimination, relative deprivation, and social injustice, decreasing their support for redress policies and their orientation to collective action (Dixon et al., 2013; Durrheim et al., 2013). For example, a meta-analysis by Reimer & Sengupta (2023) involving diverse minority groups found that intergroup contact was associated with lower perceptions of injustice, collective action, and support for reparative policies.

Another important aspect is that because of the disparity in the number of studies investigating effects of contact for minorities and majorities, little is known also about the difference in the roles of moderation and mediation processes for these two different social groups. Binder and colleagues (2009), drawing on the notion that contact effects are generally weaker for minorities (Tropp & Pettigrew, 2005) argued that it is crucial to understand whether this smaller effect is due to differences in the mediating process. They decided to investigate the role of intergroup anxiety and they found that contact effects were negligible for minority group members for two different indicators of prejudice: negative intergroup emotions and desire for social distance. They also found that contact effects were mediated by intergroup anxiety, but that this process was compromised for minority group members due to a weakened effect of intergroup anxiety on the desire for social distance (Binder et al., 2009). One possible explanation for this result is that for minorities prejudice is not particularly reinforced by negative emotions such as intergroup anxiety, while other factors may come into play. For example, minority members may not experience high levels of intergroup anxiety when interacting with majority members, yet still have other/different reasons for feeling negative about them, which in turn compromises the effects of the contact.

Allport's conditions for majorities and minorities

Another important consideration about the differences between minority and majority status groups in the contact situation is related to the role of Allport's optimal conditions: as reported by Tropp and Pettigrew (2005), optimal conditions predict significantly stronger contact-prejudice reduction effects for majority groups, but do not contribute significantly to predicting contact-prejudice reduction effects for minority groups. An interesting possible explanation suggested by Tropp (2006) is that the positive role of Allport's conditions in the intergroup context may be weaker for members of minorities, because they cannot perceive the situation without even considering the long-standing histories of devaluation by the majorities. So, attempts to implement positive features in the interaction, which suggest norms of tolerance and mutual acceptance, may not be enough to face the negative effects of protracted discriminations. Another aspect concerns specifically the condition of equal status. Many studies (e.g., Cohen, 1982) pointed out that this condition may be defined and interpreted in different ways and members of high and low status groups may not necessarily have the same perception of the extent to which equal status is present within the contact situation (Robinson & Preston, 1976). So, even when the equality of status has been explicitly built, the effect of intergroup contact on intergroup relations may still be different due to different perceptions of this condition generated by previous experiences (Tropp, 2006).

Despite the evidence about the different role of Allport's conditions for majorities and minorities, most of the studies on intergroup contact have focused on activating Allport's (1954) optimal condition in the contact situation, even when both majority and minority groups members are involved, without considering the possibility to identify specific conditions that could enhance contact effectiveness among minority group members. A study that has interestingly investigated the point of view of majority and minority groups in approaching intergroup contact is the one by Tropp and Bianchi (2006), which examined the role of valuing diversity. They suggested that "to have positive orientations toward intergroup contact, it may not be enough for minority group members to value diversity themselves, or even to perceive that diversity is valued on a broader, societal level. Rather,

what may be most crucial for minority group members is the perception that members of the majority outgroup value diversity” (Tropp & Bianchi, 2006, p. 535). Interestingly, they showed that valuing diversity is a predictor of interest in intergroup contact only among majority group members while perceiving that outgroup members value diversity is a predictor of interest in intergroup contact among minority group members. Beyond the usefulness of these results regarding valuing diversity, it remains essential to continue investigating contact conditions that make intergroup contact effective in improving relations for both majority and minority group members.

Online intergroup contact

Why move intergroup contact online

Today, many opportunities for contact between different social groups are moving online. Accordingly, recent research focuses on conceptualizing the online environment as a resource for intervening positively on intergroup relations. For example, Amichai-Hamburger and Hayat (2013) underlined some online characteristics which make the online environment very interesting for intergroup contact because they make the online interaction different from the face-to-face one.

The first characteristic is *anonymity*, which refers to the users' perception that they can browse websites, publish something, or interact with others without disclosing personal information. Applied to intergroup contact, it can be helpful to encourage participants to get involved in the contact, mainly thanks to its effect in decreasing intergroup anxiety (Amichai-Hamburger & McKenna, 2006) and being perceived as less of a threat to the status quo compared to offline contact, because of the less involvement. Of course, Amichai-Hamburger and Hayat (2013) also recognize the limitations of this aspect of online communication, for instance, anonymity can lead people to have less inhibitions in online contexts compared to face-to-face interactions. This, in turn, can enhance aggressive behaviours, such as online flaming (Johnson et al., 2009), which can be defined as antinormative hostile communication characterized using insults and/or other offensive expressions (Lea et al., 1992).

The second characteristic is *control over the physical exposure*. In face-to-face interactions it is not possible to hide some visible hints that reveal, for example, one's gender or ethnic background, and this allows stereotypes to be activated during the interaction. Many online interactions do not reveal any physical and social cues, freeing users from stereotypes, which in turn allows people to express themselves more than in offline situations. This characteristic is very useful, because it gives the possibility to control the salience of group membership, thus limiting the activation of stereotypes in the first phase of the contact. Disclosure of group belonging later is less likely to harm the positive impression already established. Hence, Amichai-Hamburger and colleagues (2015) suggest to first establish a positive contact before switching to intergroup physical exposure.

The third characteristic is *control over the interaction*, thanks to the possibility for Internet users to engage in social interactions from within their own spaces. This characteristic provides users with a sense of security and confidence (Amichai-Hamburger, 2005). The two main factors that combine to create this condition are that: 1) people can formulate their messages privately, double-check and make changes before sending them and 2) they can easily interrupt the interaction if they wish so. These factors help to reduce intergroup anxiety as they diminish the feeling of lack of control, precisely because people in contact interact from within their protected environment, having firm control over the ways and the timing of interaction (Amichai-Hamburger et al., 2015).

Another important characteristic of online interactions is the *ease of finding similar others*, that refers to the ease with which users can identify and be in contact with people based on mutual interests. This feature offers the possibility of overcoming the logistical limitations of face-to-face contact, such as organizational costs and the difficulty of physically meeting people in a specific place. These limitations completely disappear as the interaction moves online. Furthermore, the authors point out that the effects of many face-to-face intergroup contact interventions are very often lost over time, due to the lack of continuity of contacts. Conversely, due to low or zero costs, online interaction can be carried on over time (Amichai-Hamburger et al., 2015).

The ease of finding others is due to another characteristic identified by the authors, namely *high availability and accessibility*, which refers to the universal and constant possibility to easily access the Internet through many devices, allowing users to be online wherever they are and whenever they want. This feature makes it much easier to get in touch with different people, both in unstructured interaction environments such as social media and through participation in structured programs. All those willing to get in touch can do so in this way.

Another essential feature is *equality*, which in the online environment refers to the fact that when users interact, many social context cues that indicate a person's status are typically hidden. Indeed, online interaction occurs without many aspects of non-verbal communication, such as the management of personal space, or does not allow clear perception of the interlocutor's clothing or posture. The authors also argue that the Internet can help overcome language barriers, another critical factor that can underscore differences in status. An online interaction can allow each participant to give shape to their messages in their primary language and translate them instantly.

The last characteristic Amichai-Hamburger and colleagues (2015) identified is fun, which relates to the entertaining and exciting aspect of online interaction. The Internet provides an excellent opportunity to spend free time and relax in the way that each person likes. The authors, therefore, suggest that this aspect can be exploited to build an attractive experience for the participants. A clear example is offered by video games, which can be used to structure online intergroup contact interventions based on highly entertaining and engaging experiences for the participants.

Amichai-Hamburger and Hayat (2013) point out that to deepen our knowledge of online intergroup contact, specific sets of variables should be investigated, including: the extent to which the online intergroup project adheres to the principles of the classical Contact Hypothesis (Allport, 1954); an examination of participants' personalities, given the substantial impact that personality exerts on online behaviour (Amichai-Hamburger, 2002; Amichai-Hamburger, 2005; Amichai-Hamburger et al., 2004); the perception of outgroup participants by individuals, the study of

stereotypes associated with the outgroup before and after the contact, analysis of participants' anxiety levels both before and after the contact (Stephan & Stephan, 1985), exploration of the seven psychological factors related to the Internet and their interplay (Amichai-Hamburger, 2013). Furthermore, according to the authors (Amichai-Hamburger & Hayat, 2013), tools and strategies for investigating online contact might include questionnaires that are easily administered within a structured online contact platform and can be integrated as part of participants' requirements, real-time observations during the interaction, the analysis of the documentation stemming from the interaction (e.g., server log files or any other communication artifacts). In this respect, social media like Facebook provide valuable documentation for analysis.

Online intergroup contact and Allport's conditions

Thanks to its features, the online environment can be considered more suitable than the offline one for implementing Allport's conditions within intergroup contact interventions. There may be difficulties in implementing cooperation to achieve common goals when it comes to face-to-face contact. Since people prefer to cooperate with people who are similar to themselves rather than with people who are very different, they will tend to spontaneously prefer collaborating with ingroup members rather than outgroup members. Furthermore, in the presence of members of different social groups together, the salience of group membership could increase due to exposure. Therefore this phenomenon could be activated even more efficiently, leading individuals to prefer forming homogeneous groups (Hasler & Amichai-Hamburger, 2012). Thanks to some of the characteristics listed in the previous paragraph (such as the possibility to interact anonymously or to control the degree of physical exposure or the interaction modality), online contacts can represent a resource for overcoming these limits. There are numerous studies showing that diversity within online collaborations can be beneficial (e.g., Staples & Zhao, 2006). It has also been shown that identification with a superordinate group was facilitated by members of virtual teams united in collaboration on their task (Walther & Carr, 2010).

The *support of authority* is the condition that provides that both groups that come into contact can perceive that the authority in the context lends its support to the interaction, promoting the importance and equality of both groups at the same time in the contact situation. Also in this case, those authorities who wish to organize interventions based on the Intergroup Contact Theory could encounter practical difficulties on an organizational level, such as finding a place that is equally practical for everyone to reach, that everyone has the same facility to access transport, that everyone has the same availability of time. These aspects are difficult to achieve, especially when the minority social groups involved in the contact are socioeconomically disadvantaged (Hasler & Amichai-Hamburger, 2012). In this case, online contact allows organizers to get around these limits thanks to the previously mentioned characteristics of constant availability and greater accessibility compared to face-to-face interactions and the greater ease of finding like-minded people. Thanks to these features, organizers can eliminate the need to find optimal locations for everyone and eliminate travel times. Hours can also be much more flexible, with the possibility of organizing contact even in asynchronous mode, for example, through the exchange of emails. Naturally, it must be the responsibility of the organizers to ensure that each participant has the same ease of connection. This obstacle can be overcome by providing Internet access and technological support to the participants.

These efforts are also helpful to implement the last condition proposed by Allport for optimal contact: the *equality of status* in the interaction. It can be considered very challenging to achieve in offline interactions, mainly because these interactions are conveyed by non-verbal clues, like dress code, body language, use of personal space, and seating positions (Amichai-Hamburger & McKenna, 2006), that give access to understanding the social status of the people involved in the contact situation. These clues in online communication can be easily hidden, allowing for the achievement of equality of status more easily. This condition can prove advantageous for people belonging to minority groups, who may feel inhibited in expressing their point of view where differences in status are particularly salient, increasing the power inequality even in the immediate context of contact.

Investigating structured vs unstructured online intergroup contact

When addressing the study of online intergroup contact, researchers should be aware that the object under investigation may include various interactions in different web environments, each with unique characteristics. For example, interactions on Facebook – a social media people turn to for fun and leisure – might be substantially different from professional interactions facilitated by a job-oriented community such as LinkedIn. Moreover, online contact could happen in an unstructured or *structured* way. The first type of contact is investigated by correlational studies, and it refers to the spontaneous contact which takes place online, for example, in social media platforms. Most of these studies asked participants to retrospectively report their experiences of online contact with different types of outgroups and then assessed its association with prejudice variables (e.g., attitude, intergroup bias). The second type refers to intergroup contact artificially created in intervention (experimental) studies, where the interaction was built and controlled by the researchers, and the outcome variables were measured to assess the contact intervention's efficacy in improving intergroup relations. About this second type of contact, Amichai-Hamburger and Furnham (2007) have highlighted the possibility that online interactions can evolve from anonymity through various phases, ultimately leading to face-to-face contact. Following this thought, structured online interactions may be more appropriate for groups grappling with profound conflict. In such instances, structured contact offers the benefits of a professional supervisor, a structured program to follow, and safeguards against hostile interactions. As relationships progress and improve, an unstructured setting could serve as the final transitional phase preceding face-to-face contact. When stereotypes are relatively mild and conflicts are not highly intense, an unstructured environment like an open Facebook group might also suffice. Researchers may face considerable difficulty when staging research projects in unstructured online platforms (i.e., Facebook) while integrating a research project in a structured platform specifically designed for this scope appears as a more practical pathway for researchers. Indeed, a structured platform allows researchers to manipulate variables, enhancing their comprehension of the resultant

effects. A good illustration of this approach is the Dissolving Boundaries project in Ireland (Austin, 2006) and the TOCE project in Israel (Hoter et al., 2012).

Another example of an emerging structured online contact strategy, which implements Allport's conditions in online interactions, is the E-contact intervention, defined by White and colleagues (2015) as a type of computer-mediated contact that involves an engagement of the self in the intergroup relationship. The E-contact intervention is also based on *dual identity recategorization*, which refers to the cognitive processes that lead to the simultaneous activation of the ingroup identity and a common or superordinate identity, which also includes the outgroup (Dovidio et al., 2009). In this paradigm, ingroup and outgroup members never meet or see one another physically; they only interact through text messages, using a synchronous Internet chat (White & Abu-Rayya, 2012). Briefly, a text-based E-contact intervention is articulated into two phases. In the first part, participants are invited to exchange some personal information, which also facilitates awareness of each party's group membership; in the second part, a cooperative and goal-directed interaction between parties takes place. A recent review suggested that E-contact interventions can effectively reduce prejudice in various intergroup contexts and with different outcome measures (White et al., 2020). The first investigation of the effectiveness of E-contact was made by White and Abu-Rayya (2012) in a study with Catholic and Muslim students in Australia through nine sessions of text-based contact. Results showed that participants in the E-contact condition reported a greater reduction in intergroup bias than the control condition between T1 and T2 and between T1 and T3. A second study in which this strategy was tested is the one conducted by Abu-Rayya (2017), who investigated whether Israelis' acceptance of Ethiopians' integration into their culture in Israel could be improved by a three-session text-based E-contact intervention. They found that participants in the intervention condition reported a greater decrease in intergroup bias and intergroup anxiety between T1 vs T2 and T1 vs T3 than in the control condition. Subsequently, different E-contact interventions were tested using a pre-programmed procedure. In this new protocol, participants no longer chat with a real member of an outgroup. Instead, the other participant in the chat and the conversation moderator are pre-

programmed. In this way, it is possible to guarantee greater rigor of the experimental manipulations and more robust control over the interaction. An example of this different protocol was provided by White and colleagues (2019a), who tested a single session of E-contact between Catholics and Protestants in Northern Ireland involving a pre-programmed confederate, finding that, compared to the baseline condition, E-contact significantly improved outgroup attitudes.

Effects of online intergroup contact: first meta-analytic evidences

Since studies on the topic have grown, it has been possible to carry out meta-analyses on the effects of online contact on prejudice. Imperato and colleagues (2021a) provided a meta-analysis of studies relevant to reducing intergroup prejudice through online contact, considering overall effects and possible moderating variables. They relied on the hypothesis that online contact reduces prejudice, and this effect is stronger when the virtual environment effectively adapts to Allport's (1954) conditions for optimal contact. In their analysis, they included studies in which (a) intergroup contact occurred online, (b) one or more measures of prejudice were reported, (c) one or more measures of intergroup contact were reported (quantity/frequency or quality), or the contact was manipulated experimentally, (d) the researchers reported sufficient statistics to calculate the effect size. The final pool of studies considered by the authors consisted of 20 published and 3 unpublished records. The authors considered the following characteristics of the studies as potential moderators of the relationship between online contact and prejudice: participants' mean age, percentage of women, sample composed of only students or mixed, year of publication, publication status (published or not), use of a measurement scale vs single item, target of the prejudice, country of data collection, contact modality (only text-based or mixed), structured vs unstructured contact, status of the social group (majority or both majority and minority), Allport's conditions, number of interactions. The studies in the final sample provided 29 different effect sizes based on data from 6576 participants. Results showed a significant overall effect: online contact moderately reduces prejudice. The moderation results showed that there were no significant effects of the age, percentage

of women, or student status of the participants. Furthermore, there were no significant effects for the year of publication, the type of publication, the measurement of the variables by a scale or a single item, the type of outcome, or the target of the prejudice. No specific effects were detected for the data collection country groupings attempted. No specific effect was detected for the text-based or mixed contact modality. Marginal differences were found between experimental and correlational studies, namely between structured and unstructured contact: a slightly stronger effect was found in correlational studies, therefore, when the contact was spontaneous and unstructured. An explanation that the authors provided for this difference was that in unstructured contexts, it is up to individuals to choose to engage in dialogue with outgroup members. The free choice of the outgroup member with whom to interact could lead participants to engage in contact with people for reasons other than their belonging to the outgroup, triggering a decategorization mechanism (Gaertner et al., 2000). Conversely, in experimental studies, participants were asked to interact with an outgroup member based on their membership in a specific target group. Other moderation analyses showed no differences between studies conducted only with majority participants and studies in which participants were both members of the minority and majority groups. Regarding Allport's conditions for optimal contact, no effect emerged for common goals and support from the authority. However, a significant effect emerged for cooperation, with stronger effects when participants were asked to cooperate compared to studies in which cooperation was not controlled. One explanation by the authors for this result was that while common goals are abstract and more linked to a positive future outcome, cooperation is a process that occurs here and now, in the very moment the two group members interact. Finally, no significant effect of the frequency (in correlational studies) or number (in experimental studies) of interactions emerged.

Another meta-analytic study on online intergroup contact was developed by White and colleagues (2020). This study aimed to test the average effect of text-based online intergroup contact on prejudice. The study inclusion criteria were: (a) the study must have experimentally manipulated

text-based online intergroup contact with a real or pre-programmed outgroup member, (b) the intergroup contact must have been compared to a control in which there was no interaction with an outgroup member. The final pool consisted of 12 studies. In this study, the process of searching for records in the databases and screening was not reported. Still, the meta-analysis seems to be carried out starting from the articles discussed by the authors in the review, in which the potential of text-based online contact and the methods of intervention are discussed. Interestingly, the authors proposed a model – comparable to the one proposed by Vezzali and colleagues (2014) for extended contact – in which they categorized the outcomes of text-based online intergroup contact as cognitive/attitudinal, affective, and behavioral. In the model, they represented the outcome variables that emerged from their review. Examples of attitudinal outcomes are image affective bias, blatant and subtle prejudice, outgroup knowledge, outcome expectancies, attitudes, stereotypes, implicit pro-white bias, and similarity. Examples of emotional outcome variables are intergroup anxiety, outgroup empathy, fear, anger, and pity, sympathy, trust, warmth toward the outgroup. Finally, behavioral intention measures include outgroup avoidance, willingness for further contact, social distance, and outgroup friendship (White et al., 2020). The metanalytic results revealed that text-based intergroup online contact, which the authors called E-contact, compared to control, had a significant and large effect on cognitive measures of prejudice, a significant and medium effect on affective measures of prejudice, and a significant and medium effect on behavioral intentions measures of prejudice. However, the last was based on only three effect sizes.

The present research: aims and overview of the studies

As emerges from the previous chapter, intergroup contact has proved to be an effective strategy to counter prejudice and improve intergroup relations. Numerous contact interventions have been implemented in heterogeneous intergroup contexts in different parts of the world, finding consistent empirical evidence for the validity of the intergroup contact theory (Pettigrew & Tropp, 2006). In particular, the four optimal conditions proposed by Allport (cooperation, achievement of common goals, equal status within the interaction, and the support of the authorities for contact) have been implemented mainly in contact interventions. As commented in the previous chapter, a meta-analysis by Pettigrew and Tropp (2006) showed that these conditions are beneficial for improving the effects of contact on intergroup relations but are not essential for influencing the reduction of prejudice. Indeed, even where the conditions were not implemented, an effect on the decrease of prejudice could still be seen. A further interesting aspect concerns the effectiveness of these contact conditions for groups of different social statuses. Another meta-analysis by Tropp and Pettigrew (2005) showed that they are effective in improving the effect of contact on prejudice for majority social groups while not for minority groups. Finally, since most interactions have moved to the online environment in recent years, online intergroup contact has also begun to be investigated (Imperato et al., 2021a). This new interaction environment offers exciting features for scholars who want to implement contact interventions between different social groups. For example, Amichai-Hamburger and Hayat (2013) proposed that the ability to interact anonymously, the strong control over physical exposure and interaction, the accessibility and availability, the ease of finding people with shared interests, the equality, and enjoyment are characteristics that allow the creation of a psychological environment which is very favourable for intergroup interactions. These characteristics can make the online valuable environment for contact to become an effective tool for improving intergroup relations even for minority social groups.

Taken together, the results of the meta-analysis by Imperato and colleagues (2021a) and by White and colleagues (2020) suggest that online intergroup contact, in line with face-to-face

intergroup contact (Pettigrew & Tropp, 2006), reduces prejudice. About Allport's (1954) conditions, the meta-analytic data by Imperato and colleagues (2021a) showed that only cooperation has a role in moderating the relationship between contact and prejudice, while common goals and support from authority do not (equal status was not coded in this study). The study by White and colleagues (2020) provides a handy description of how Allport's conditions were implemented in text-based E-contact interventions without however providing meta-analytic evidence on the effects of the presence of these conditions and excluding from the analysis all studies that implemented online contact interventions other than text-based and studies that investigated spontaneous unstructured contact. Thus, it remains to be understood how the conditions have been implemented and measured in the broader landscape of studies on online intergroup contact, including spontaneous unstructured contact and forms of structured contact beyond text.

Regarding the presence of majority and minority social groups in online intergroup contact studies, Imperato and colleagues (2021a) found no differences in the effects of online contact between studies with majority participants and studies with both majority and minority participants, leaving room for the possibility that online contact can be effective for both majorities and minorities, in contrast with face-to-face contact which is more effective in reducing prejudice for the majorities (Tropp & Pettigrew, 2005). However, it is essential to note that studies involving participants from minority social groups are few; therefore, further studies are needed to confirm this trend.

Until now, many online contact interventions have been designed basing the interaction on Allport's four conditions for optimal contact (see White et al., 2020). However, none of these studies set out to empirically investigate the role of Allport's conditions in online intergroup contact and their effect on intergroup outcomes. Furthermore, since the characteristics of online interactions are different from face-to-face interactions, it may be that Allport's conditions play a different role in these interactions for minority social groups. As seen in the previous chapter, minorities may approach the contact with negative expectations due to the fact of feeling like targets of prejudice on the part of the majority, especially when group affiliations are very salient and cannot be hidden

(Tropp & Pettigrew, 2005). However, the online environment offers the possibility of interacting while maintaining different levels of anonymity or different levels of physical exposure (Amichai-Hamburger et al., 2015), giving the possibility of showing one's group identity as much and when one wants, levelling intergroup anxiety or perceived threat. This climate of greater security and control, and less worry about being the target of discrimination and prejudice, could also allow minorities to have a more authentic experience of cooperation towards a common goal, equal status, and support from authority. Despite these critical potentials of the online environment for minority social groups, no studies have investigated the effects of Allport's conditions on intergroup relations for minority social groups in online contact. In light of these premises, this thesis aims to investigate the role of Allport's conditions in the intergroup contact that takes place online, with particular attention to the differences in the effect of Allport's conditions for majority and minority social groups.

To reach this aim, three studies were conducted: the first study is a systematic review of the literature, the second study is an experimental test of Allport's conditions in a structured intergroup contact online intervention, and the third study is a survey investigating Allport's conditions in unstructured, spontaneous online contact on social media. The structure of the work, with aims and methods for each study, is represented in Figure 1.

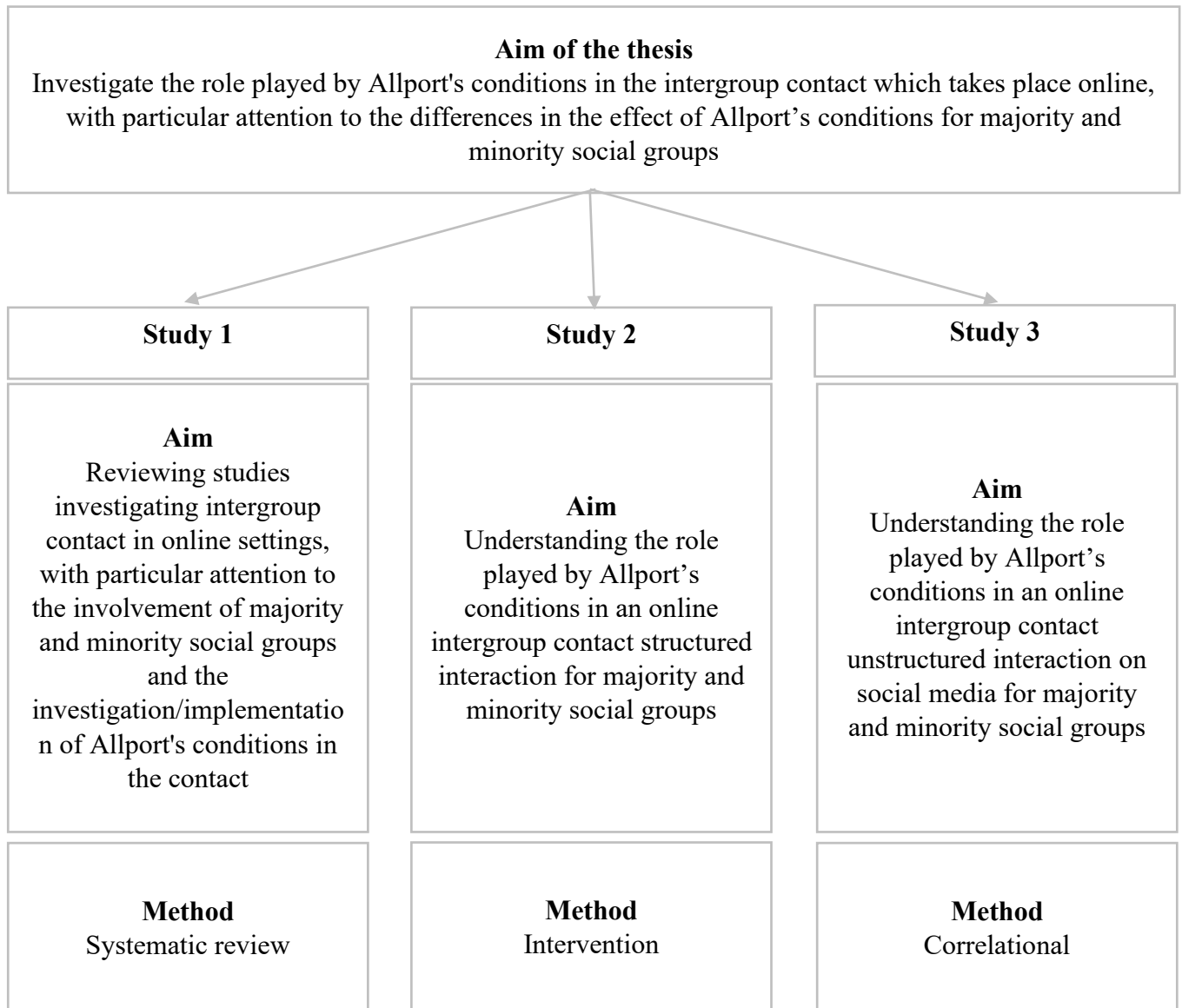
The first study presented in this thesis (Study 1) is a systematic review of the literature that aimed at advancing the literature evaluating the studies on online intergroup contact and its effects on intergroup relations, with particular attention to (1) the presence of majority and minority social groups as participants in the studies and (2) Allport's conditions in contact interventions or their measurement in spontaneous interactions. Therefore, Study 1 will examine the existing evidence on how optimal conditions are implemented or achieved in online contact and the similarities and differences of online contact effects for majority and minority group members. Based on what emerged from the systematic review of the literature, updated compared to those of Imperato and colleagues (2021a) and White and colleagues (2020), and having placed the focus on Allport's

conditions in online contact and on the effects of contact for majority and minority social groups, the following two studies were constructed (Study 2 and Study 3). In particular, no study has compared the effects of online intergroup contact in the presence or absence of Allport's conditions. Furthermore, no study has carried out this comparison between a majority and a minority social group. An experimental study (Study 2) was carried out to fill this gap in the literature. It empirically compared the effects of an online interaction in the presence of Allport's conditions with one in the absence of Allport's conditions. Furthermore, this study involved both sexual majority (heterosexuals) and minority (gay/bisexuals) participants to advance the literature testing the effects of conditions for both groups.

Finally, from the systematic review of the literature, in line with what was also found by Imperato and colleagues (2021a), it emerged that no study has investigated the effects that Allport's conditions can have in unstructured online contact that occurs through social media. To fill this gap in the literature, a third study (Study 3) was conducted with the aim of investigating the role played by Allport's conditions in unstructured, spontaneous contact on social media for majority and minority group members. Even if intergroup contact on social media occurs spontaneously, they still represent a semi-structured context of interaction, in which people use the roles provided by each platform to engage into interaction. Therefore, it is essential to understand whether the perception of these conditions favours a positive relationship between contact and positive intergroup relations. Therefore, we chose to use a questionnaire to investigate the quality and quantity of intergroup contact on social media, Allport's conditions, and two intergroup outcomes (intergroup attitudes and outgroup trust). Again, participants from a sexual majority (heterosexuals) and minority (gay and lesbians) social group participated in the study in order to investigate whether there were any differences between the two groups in the role played by Allport's conditions.

Figure 1

Structure of the thesis and aims of the studies



Chapter 2. Online intergroup contact: a systematic review

The work by White and colleagues (2020) provided a valuable description of how Allport's conditions have been implemented in text-based online intergroup contact. Similarly, Imperato and colleagues (2021a) tested Allport's conditions as moderating variables of the effects of online contact on prejudice; however, in this work, only experimental studies in which the researchers structured the contact were considered. However, it is essential to extend the literature by providing a complete overview of how conditions have been investigated by research on online intergroup contact, not only text-based but also structured through other modalities or unstructured. It is important to remember that spontaneous and unstructured contact represents the daily life of individuals' online relationships. Indeed, the meta-analysis by Imperato and colleagues (2021a) found a slightly greater effect of spontaneous contact than structured contact, so the literature cannot overlook its investigation.

Regarding the status of the social groups involved in the contact, the meta-analysis by White and colleagues (2020) did not analyse this aspect, since most studies in the analysed pull were composed of participants from the majority social group. Regarding the study by Imperato and colleagues (2021a), as previously reported, no differences were found in the effects of contact between when the sample was composed of only majority or majority and minority participants. Although this result is very encouraging, leaving open the possibility that online contact – compared to face-to-face contact – is equally effective for minorities and majorities, it is considered essential to carry out a more in-depth analysis of the studies, focusing on this aspect. Indeed, it is considered essential to compare the results of studies that have included only majority participants with those that have included only minority participants and those in which the samples are mixed. In this way, we will have a clearer idea of the effects of contact for the two groups.

Method

Research questions

Considering what was presented in the previous paragraph, this systematic literature review aims to answer two research questions. The first research question concerns the effects of intergroup contact for majority and minority social groups: "Does online intergroup contact have similar or different effects for majority and minority social groups?". The second research question is related to Allport's conditions in online intergroup contact: "How have Allport's conditions been implemented and investigated by the studies on online intergroup contact?".

To answer these two research questions, we carried out a systematic review that aims to examine (a) similarities and differences of online contact effects for majority and minority group members and (b) the ways optimal conditions are implemented or achieved in the context of online contact.

Procedure and inclusion criteria

We used four databases for the search: PsycInfo, Scopus, PsycArticles, and Web of Science. The following string was entered in each of the databases:

Figure 2

String entered in the databases

(online OR Internet OR web OR SNS OR social network* OR social media OR blog OR chat OR instant message* OR online gaming OR online contact) AND (intergroup relation* OR contact theory OR E-contact OR electronic contact OR Allport OR intergroup contact OR CMC OR computer mediated communication OR Contact Hypothesis) AND (prejudice* OR discrimination* OR stigma* OR intergroup bias OR sexism* OR racism* OR islamophobi* OR homophob* OR ageism* OR intergroup attitude* OR outgroup attitude*).*

The search was conducted following these steps:

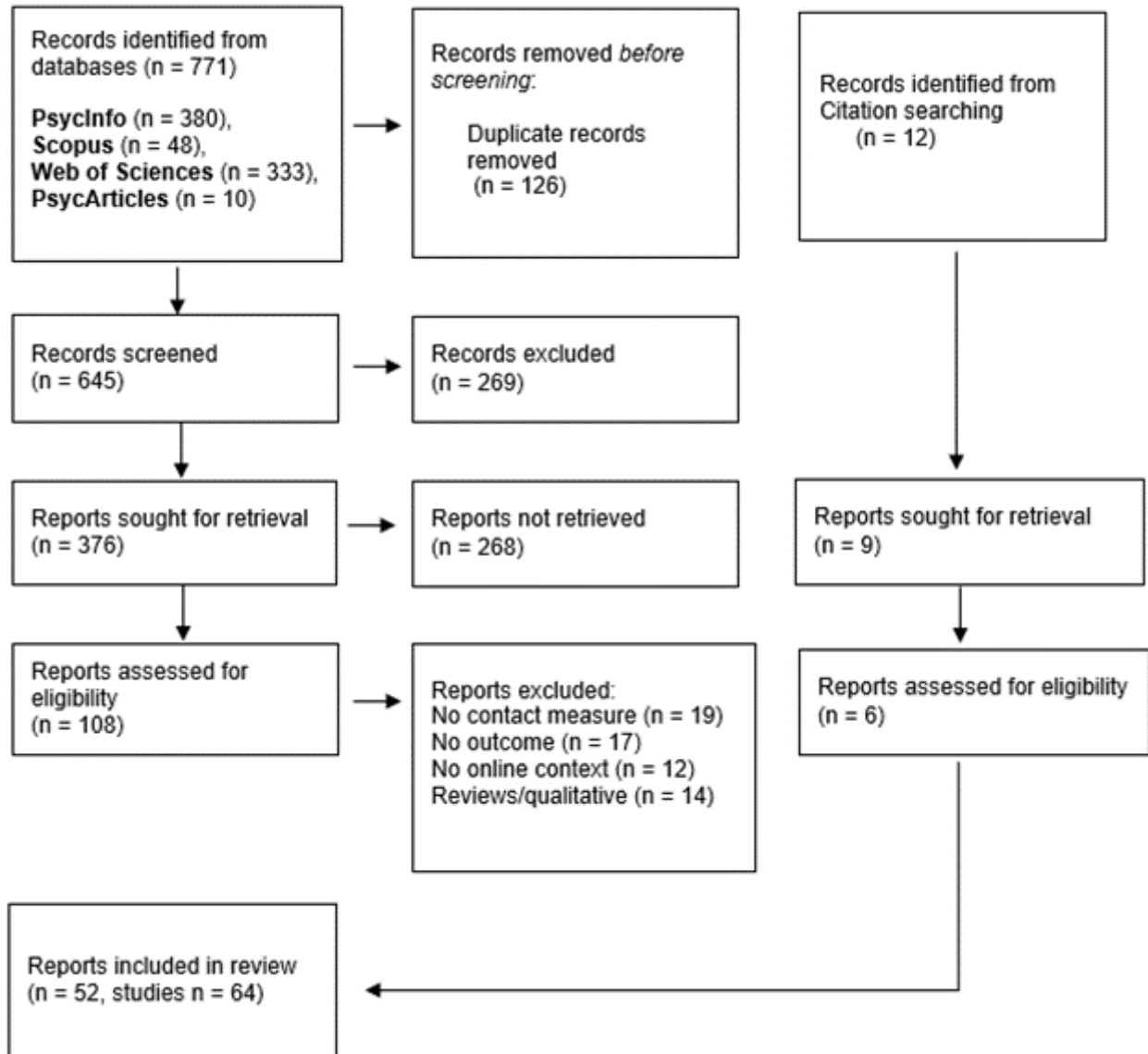
- The search in PsycINFO, Scopus, PsycArticles, and Web of Science was done in July 2021, and 771 records were carried out.
- Other relevant publications ($n = 12$) were found from different sources (e.g., citation searching).
- After removing 126 records that were duplicates, 645 articles were retained for the screening.
- Two independent researchers² proceeded with screening the titles, abstracts, and full-text articles, including in the next step only the articles for which titles, abstracts and full-texts were considered pertinent by the two independent researchers. Only in case of disagreement ($n = 4$), a third member of the research group made an independent evaluation and took the final decision. The studies were included in the review if the following criteria were present: (a) the report contained an online contact measure (in case of correlational studies) or an intergroup contact intervention that manipulated online contact (for experimental studies); (b) the outcome variables included at least one measure of intergroup bias, intergroup attitudes, or prejudice towards the outgroup; and (c) the investigated interaction or the manipulated contact occurred in the online context.
- 269 reports have been excluded based on the title.
- 268 reports have been excluded based on the abstract.
- 108 reports were assessed for eligibility: 19 were excluded because they did not include a contact measure, 19 were excluded because they did not contain an outcome variable such as intergroup bias, prejudice, or attitude, 12 were excluded because the investigated interaction did not take place in the online environment, and 14 were review studies or qualitative studies. Finally, from the citation searching process, six reports were included.

- To assess the risk of bias, the Cochrane Collaboration's tool (Higgins et al., 2019) was used. The risk was classified as high, low, or unclear. The following criteria were adopted: selection bias, performance bias on the experimenter and participant level, detection bias, attrition bias on the participant level and outcome level, and reporting bias. Two independent researchers assessed the risk of bias for each of the studies. Disagreements were solved through a discussion between them.

The final pool consisted of 52 articles, including 64 studies. The PRISMA flowchart summarizing the screening process (Moher et al., 2009) is displayed in Figure 3.

Figure 3

Flowchart of records included in the review



Results

Extracted data are reported in Table 1 and Table 2.

Table 1

Description of the studies included in the final pull

1	2	3	4	5	6	7	8	9	10
Abu-Rayya (2017)	Israel	129	3	1	1	1	1	1	Yes
Adachi et al. (2015)	Canada	138	2	1	1	4	4	5	Yes
Alvidrez et al. (2015)	Spain	104	1	1	1	1	1	1	No
Amzalag & Shapira (2021)	Israel	85	2	1	1	1	1	5	Yes
Andrews et al. (2018)	New Zealand	157	1	1	2	3	1	5	No
Bagci et al. (2021) - Study 1	Turkey	110	1	1	1	1	1	5	Yes
Bagci et al. (2021) - Study 2	Turkey	176	1	1	1	1	1	5	Yes
Boccanfuso et al. (2020)	Australia	114	1	1	1	1	3	1	Yes
Broady et al. (2021)	Australia	2010	3	1	2	3	4	1	No
Bruneau et al. (2021) - Study 3a	USA	192	2	1	1	3	2	1	Yes
Bruneau et al. (2021) - Study 3b	USA	313	2	1	1	3	2	1	Yes
Cao & Lin (2017)	China	60	1	1	1	1 vs 3	1	2	No
Cao & Meng (2020)	Belgium	210	1	2	3	6	1	2	No
Cao et al. (2018)	French	211	1	2	1	6	1	2	No
Douglas & McGarty (2001) - Study 3	Australia	34	1	1	1	1	4	5	No
Finchilescu, G. (2010)	South Africa	402	1	1	1	1	1	3	No
Hsueh et al. (2015)	New Zealand	137	1	1	1	1	1	1	No
Imperato et al. (2021b)	Italy	1018	1	2	3	6	1	5	No
Kim & Wojcieszak (2018)	USA	396	1	1	1 vs 2	1	1, 3	1	No
Kim & Harwood (2020)	USA	126	1	1	2	5	1	1	No
Lev-On & Lissitsa (2015)	Israel	586	1	2	3	6	1	1	No

1	2	3	4	5	6	7	8	9	10
Lissitsa (2016a)	Israel	296	1	2	3	6	1	2	No
Lissitsa (2017a)	Israel	458	1	2	3	6	1	1	No
Lissitsa & Kushnirovich (2018)	Israel	450	1	2	3	6	1	1	No
Lissitsa & Kushnirovich (2019)	Israel	450	1	2	3	6	1	1	No
Lissitsa & Kushnirovich (2020) - Study 1	Israel	716	1	2	2	5	3	1	No
MacInnis & Hodson (2015)	Canada	214	1	1	1	1	3	1	No
Mancini & Imperato (2020)	Italy	357	1	2	3	6	3	4	No
Matsick et al. (2020) - Study 1	USA	198	1	1	2	2	3	1	No
Matsick et al. (2020) - Study 2	USA	186	1	1	2	2	3	1	No
Maunder et al. (2019)	Australia	133	1	1	1	1	4	1	Yes
Mustafa & Poh (2019)	Malaysia	100	4	1	1	1	1	3	Yes
Neubaum et al. (2020)	Germany	1047	1	1	2	5	4	1	No
Park et al. (2019)	USA	151	1	2	3	6	1	4	No
Pertiwi et al. (2020) - Study 1	USA	119	1	2	1	1	1	3	Yes
Pertiwi et al. (2020) - Study 2	Indonesia	133	1	2	1	1	1	3	Yes
Rodriguez-Rivas et al. (2021)	Chile	40	2	1	1	1	4	1	No
Römpke et al. (2019) - Study 1	Germany	100	1	1	1	1 + 4	1	1	Yes
Schumann et al. (2017) - Study 1	Belgium	64	2	1	1	1	4	3	Yes
Schumann et al. (2017) - Study 2	UK	37	2	1	1	1	4	2	Yes
Schwab & Greitemeyer (2015a) - Study 2	USA	251	1	1	2	5	1	4	No
Schwab & Greitemeyer (2015a) - Study 3a	USA	152	1	1	2	5	1	4	No
Schwab & Greitemeyer (2015a) - Study 3b	USA	195	1	1	2	5	1	4	No
Schwab & Greitemeyer (2015a) - Study 4a	USA	151	1	1	2	5	1	4	No

1	2	3	4	5	6	7	8	9	10
Schwab & Greitemeyer (2015a) - Study 4b	USA	167	1	1	2	5	1	4	No
Schwab & Greitemeyer (2015a) - Study 5	USA	129	1	1	2	5	1	4	No
Schwab & Greitemeyer (2015b)	Austria	357	1	2	3	6	1	4	No
Schwab et al. (2019)	Iran and Israel	160	1	2	1	1	1	5	No
Stiff & Kedra (2020)	UK	80	1	1	1	4	4	5	No
Taniguchi & Glowacki (2021) - Study 1	N/S	679	1	1	2	1	4	3	No
Taniguchi & Glowacki (2021) - Study 2	N/S	1280	1	1	2	1	4	3	No
Tavakoli et al. (2010)	Canada and Iran	35	2	1	1	1	1	5	No
Tippin & Maranzan (2019)	Canada	303	3	1	2	3	4	5	No
Tynes et al. (2008)	USA	228	1	2	3	6	1	3	No
Tynes et al. (2013)	USA	217	1	2	1	6	1	3	No
Voelkel et al. (2021) - Study 2	Netherlands	196	1	1	1	1	4	5	No
Voelkel et al. (2021) - Studio 3	Netherlands	267	1	1	1	1	4	5	No
Walther et al. (2015)	Israel	71	2	1	1	1	2	3	Yes
White & Abu-Rayya (2012)	Australia	201	3	1	1	1	2	3	Yes
White et al. (2015)	Australia	188	4	1	1	1	2	4	Yes
White et al. (2019a)	Ireland	86	1	1	1	1	2	3	Yes
White et al. (2019b)	Australia	140	1	1	1	1	3	1	Yes
Wu et al. (2017)	China	980	1	2	1, 2	6	3	1	No
Žeželj et al. (2017)	Serbia, Croatia, Cyprus	374	1	2	3	6	1	1	No

Note. The table includes the *reference of the study and (eventually) the number of the study in the article* (reported in column n°1); *country of data collection* (reported in column n°2); *sample size* (reported in column n°3); *waves of data collection* (reported in column n°4); *the type of contact* (reported in column n°5, classified as: structured = 1, unstructured = 2); *modality of contact* (reported

in column n°6, classified as direct = 1, indirect = 2, non-applicable = 3); *means of contact* (reported in column n°7, classified as: text = 1, photo = 2, video = 3, game = 4, mixed = 5, not specified = 6); *intergroup relation* (reported in column n°8, classified as: ethnic = 1, religious = 2, sexual = 3, other = 4); *status of the involved social group(s)* (reported in column n°9, classified as: majority = 1, minority = 2, both compared = 3, both mixed = 4, non-applicable = 5); and *implementation or measurement of Allport's conditions* (reported in column n°10).

General characteristics of the studies

Most of the studies have been conducted in the USA ($n = 16$), followed by Israel ($n = 10$), Australia ($n = 7$), and Canada ($n = 4$). Other involved countries are New Zealand ($n = 2$), Turkey ($n = 2$), China ($n = 2$), Belgium ($n = 2$), Italy ($n = 2$), Germany ($n = 2$), Netherlands ($n = 2$), UK ($n = 2$), Iran ($n = 2$), Spain ($n = 1$), French ($n = 1$), South Africa ($n = 1$), Malaysia ($n = 1$), Indonesia ($n = 1$), Chile ($n = 1$), Austria ($n = 1$), Ireland ($n = 1$), and Serbia, Croatia, Cyprus ($n = 1$). The total sample size is 18.844 participants ($M = 294.44$ participants for each study). Most studies had only one data collection wave ($n = 49$). Only a few studies had two ($n = 9$), three ($n = 4$), or four ($n = 2$) waves. The studies investigated two *types* of contact: structured ($n = 45$) and unstructured ($n = 19$). Regarding the *modality*, most of the studies investigated direct contact ($n = 36$). The contact was classified as direct when the study's authors explicitly expressed in the paper that the investigated contact occurred through participants' interaction. A smaller number of studies investigated indirect contact ($n = 16$). The contact was classified as indirect when the authors explicitly indicated that participants were exposed to the outgroup without interacting directly. Finally, for some cases, the classification was not applicable because explicit information about the mode of contact was not reported ($n = 12$). As to the *means* of contact, most of the studies investigated text-based contact ($n = 31$). Direct contact was generally implemented through text chat, in which participants exchanged opinions by typing their messages. In contrast, indirect text-based contact was mostly investigated by the exposition to an online text. The studies that used photos as online contact manipulation ($n = 2$) were based on the exposition to a photo profile on Facebook. Studies on video-based online contact ($n = 5$) mainly manipulated the exposition to a video about the outgroup in the case of indirect contact and used videoconferencing in the case of direct contact. Then, few studies ($n = 2$) implemented the intergroup

contact manipulation in an online game, and many studies investigated online contact through mixed means ($n = 9$), such as in the case of social media, where participants can be exposed to the same time to text photos and videos. Finally, for many studies on unstructured contact ($n = 15$), the means of contact cannot be explicitly classified because this information was not assessed. Regarding the investigated intergroup relation, more than half of the studies ($n = 35$) investigated ethnic relations, assessing intergroup outcomes towards people from different countries or with different ethnic backgrounds. Other studies ($n = 6$) investigated contact between different religious groups and between participants with different sexual orientations ($n = 8$). Finally, other intergroup relations were investigated, such as those based on different political orientations, belonging to different organizations/universities, or related to mental illness ($n = 14$). The studies included in the review investigated a variety of intergroup outcomes: positive and negative outgroup attitudes ($n = 29$), prejudice ($n = 13$), personal/social distance ($n = 9$), stigma ($n = 5$), approach/avoidance tendencies ($n = 5$), social acceptance ($n = 5$), behavioural intentions ($n = 5$), discrimination ($n = 3$), and intergroup bias ($n = 3$), covering a variety of outcome categories, including cognitive, behavioural, attitudinal, and emotional variables. Cognitive measures can be described as related to perceptions, judgments, knowledge, and reasoning about the outgroup; behavioural measures are related to the participant's behaviours or behavioural intentions towards an outgroup; attitudinal outcomes involve evaluations of an outgroup; and, finally, emotional outcomes are related to the emotions aroused by interactions with the outgroup. Predictors, intergroup outcomes, and results for the main outcomes are reported in Table 2.

Table 2

Predictors/intervention, main outcomes, and results for the main outcomes of the studies included in the review

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Abu-Rayya (2017)	(1) Integrationist orientation (intervention); (2) Intergroup bias, Intergroup anxiety	Participants in the intervention condition reported a greater decrease in Intergroup bias and Intergroup anxiety between T1 vs T2 and T1 vs T3 than in the control condition.
Adachi et al. (2015)	(1) Intergroup cooperation; (2) Prejudice/attitudes; Categorization as one team, Discrimination	Attitudes toward both University of Buffalo students and Americans became significantly more favourable after cooperating in the video game with an outgroup member. No changes in attitudes for the control group. No evidence of a secondary transfer effect to other unrelated outgroups. No significant difference in the degree to which participants in the intergroup condition categorized themselves and their partner as belonging to one team compared with participants in the intragroup condition. No post-game discrimination.
Alvidrez et al. (2015)	(1) Confirming vs. disconfirming behaviour; (2) Sterotypicality, Prejudice, Lasting identification	Manipulation check: more lasting identification in the depersonalized condition than in the personalized one. Greater prevalence of stereotypic attributions for the confirming condition than for the disconfirming one. Greater perceived typicality of the outgroup member in the confirming condition than in the disconfirming one.
Amzalag et al. (2021)	(1) Online contact program; (2) Attitude towards multiculturalism	Higher openness towards multiculturalism, cultural identity, acquaintance via online media and behavioural changes after the intervention.
Andrews et al. (2018)	(1) Observing positive vs. negative vs no contact; (2) Prejudicial attitudes, Perceived outgroup variability	Observing positive intergroup contact between NZ and Russian poker players significantly increased positive attitudes toward Russians relative to observing no intergroup contact or negative contact. Exposure to negative contact increased prejudice toward Russians relative to exposure to no intergroup contact. Exposure to intergroup contact in an online poker context had a non-significant effect on perceived outgroup variability toward Russians.
Bagci et al. (2021) - Study 1	(1) E-contact with higher vs lower self-disclosure; (2) Outgroup attitudes, Approach tendencies, Avoidance tendencies	Participants in the higher self-disclosure condition displayed more positive attitudes toward Kurds than in the lower self-disclosure and control conditions. Lower and higher self-disclosure conditions improved approach tendencies compared to the control condition. The difference between the two E-contact conditions was not significant. Only the higher self-disclosure condition led to a significant decrease in outgroup avoidance. The comparison between the control group and the lower self-disclosure condition was not significant, as the difference between the two E-contact procedures.
Bagci et al. (2021) - Study 2	(1) E-contact with higher vs. lower self-disclosure; (2) Outgroup attitudes, Approach	Outgroup attitudes: significant difference between higher self-disclosure and control condition. The difference between lower and higher self-disclosure conditions and between lower self-disclosure

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Boccanfuso et al. (2020)	tendencies, Avoidance tendencies, Perceived ethnic conflict	and control conditions were not significant. Approach tendencies: Participants in higher and lower self-disclosure conditions reported higher levels than control conditions. The difference between the two E-contact conditions was not significant. Outgroup avoidance tendencies: lower self-disclosure E-contact condition did not significantly reduce it; higher self-disclosure E-contact significantly reduced it. Perceived interethnic conflict: no differences in effect.
Broady et al. (2021)	(1) Transgender/Cisgender contact; (2) Transgender stigma (1) Exposition to a video of an outgroup; (2) Negative attitudes, Controllability (higher scores=more blame), Personal Distance Opinions (negative)	Transgender stigma was significantly lower in the transgender contact condition compared to the cisgender contact condition. Men recorded significantly higher transgender stigma than women. Post intervention: significant decrease in negative attitudes toward all the groups except for HIV. Significant decrease in controllability for all the groups (no available data for sex workers). Significant reduction of distance toward all the groups. Significant reduction in negative opinions toward Hepatitis B and C, no significant reduction for HIV, Drug use, Sex workers. By three-month follow-up, the HIV intervention group demonstrated long-term improvements in relation to personal distance compared to the control group, and the hepatitis B intervention group demonstrated long-term improvements in relation to attitudes and personal distance compared to the control group. Across intervention and control groups, long-term reductions in negative attitudes were found in relation to HIV controllability, hepatitis B controllability and opinions, hepatitis C controllability and opinions, and injecting drug use attitudes and opinions.
Bruneau et al. (2021) - Study 3a	(1) Conversation via videoconferencing; (2) Dehumanization, Meta-dehumanization	Pre-program levels of meta-dehumanization and dehumanization were significantly reduced after the program.
Bruneau et al. (2021) - Study 3b	(1) Conversation via videoconferencing; (2) Dehumanization, Meta-dehumanization	Pre-program levels of dehumanization were nearly identical for the experimental group and the control group; dehumanization became significantly lower in the experimental group over time, whereas it became marginally significantly higher in the control group. Pre-program levels of meta-dehumanization were similar for the experimental group and the control group; post-program meta-dehumanization was significantly lower than pre-program for the experimental group and numerically (but not significantly) higher in the control group.
Cao & Lin (2017)	(1) Online contact; (2) Attitudes towards the targeted outgroup member; Attitudes towards the outgroup as a whole	Interactions that occurred through video-based CMC were found to have a greater positive influence on one's attitudes toward specific outgroup members than those conducted via text-based CMC, while text-based CMC produced a stronger impact than video-based CMC in ameliorating one's attitudes towards the outgroup as a whole.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Cao & Meng (2020)	(1) Face-to-face contact, Online contact; (2) Social capital (Bridging capital Bonding capital)	Online contact was not directly related to global attitudes, global skills, bridging social capital, and bonding social capital. Face-to-face contact was directly and positively related to all four variables. Global attitudes, rather than global skills, predicted bridging social capital. Global skills, rather than global attitudes, predicted bonding social capital.
Cao et al. (2018)	(1) Face-to-face contact; Online contact; (2) Social connectedness with the mainstream society, Perceived social support, Perceived prejudice	Face-to-face contact has a non-significant direct effect on the dependent variables. Online contact has a significant positive effect on social connectedness and social support and a significant negative effect on perceived prejudice.
Douglas et al. (2001) - Study 3	(1) Identifiable vs anonymous response via computer to an outgroup member's Internet message; (2) Involvement in the issue of racism during the interaction	Anonymous communicators felt more strongly about the racism issue than those who were identifiable.
Finchilescu, G. (2010)	(1) Metastereotypes, Prejudice; (2) Intergroup anxiety	White participants in the intergroup contact condition reported significantly greater anxiety than those in the intragroup condition. Metastereotypes and prejudice do not explain anxiety when there is no intergroup contact. The effect of meta stereotypes was higher in the intergroup than in the intragroup condition. The effect of prejudice was higher in the intergroup than in the intragroup condition.
Hsueh et al. (2015)	(1) Antiprejudice vs prejudice norm; (2) Online comments, Explicit prejudice, Implicit prejudice	Online comments: participants in the prejudiced social norm condition expressed more prejudiced sentiments than those in the anti-prejudiced condition. Explicit prejudice: participants in the prejudice norm condition showed less favourable feelings toward Asians relative to those in the antiprejudice norm condition. Implicit prejudice: participants in the prejudiced norm condition demonstrated higher levels of implicit prejudice toward Asians than participants in the antiprejudice norm condition.
Imperato et al. (2021b)	(1) Online intergroup contacts; (2) Anti-racist behaviour	Online intergroup contact is positively related to mediated and vicarious discrimination, but not with anti-racist behaviour, positively associated with online community commitment, but not with emphatic feelings. Online community commitment is negatively associated with anti-racist behaviour. Empathic feelings are positively related to anti-racist behavior.
Kim & Wojcieszak (2018)	(1) Online reader's (homosexual vs. immigrant vs unspecified) comment immediately under a short news blurb; (2) General threat, perceived symbolic threat, Perceived realistic threat, Social distance	Direct online contact significantly reduced general threat, symbolic threat, and social distance, but not realistic threat, towards gays and lesbians. However, it did not significantly affect any of the four variables toward undocumented immigrants. Extended online contact did not significantly affect general, symbolic or realistic threat and social distance for both outgroups studied.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Kim & Harwood (2020)	(1) Exposition to the profile of an outgroup member with high vs low English proficiency; (2) Desire for future contact with the outgroup member in person and on Facebook; Desire for future contact with the outgroup	The high English proficiency condition resulted in more desire for future interaction with the outgroup member on Facebook than the low proficiency condition. This effect did not extend to the desire for future contact with her in person.
Lev-On & Lissitsa (2015)	(1) Frequency of online contact, Frequency of face-to-face contact, (Social distance); (2) Social distance, (Frequency of online contact, Frequency of face-to-face contact)	Online and face-to-face contacts are associated with self-perceived social distances. Both contacts minimize the social distances that Israeli Jews maintain toward Arabs, and those who feel closer to Arabs are more likely to interact with them online and face-to-face. The effect of face-to-face contact on social distances was stronger than that of online contact. There is a positive correlation between the frequency of face-to-face and online contacts.
Lissitsa (2016a)	(1) Frequency of online contact, (Social distance); (2) Social distance, (Frequency of online contact)	More frequent online contacts are associated with fewer social distances from Ashkenazim, while smaller social distances are associated with more frequent online contacts. The effect of frequency of online contacts on social distances from Mizrahim was insignificant, while smaller social distances are associated with more frequent online contacts. More frequent online contacts are associated with less social distance from Arabs; the effect of social distances on the frequency of online contacts was insignificant. More frequent online contacts are associated with less social distance from seculars, and less social distance is associated with more frequent online contacts. The effect of online contacts on social distances from religious was insignificant; less social distance is associated with more frequent online contacts. More frequent online contacts are associated with less social distance from Ultra-orthodox, while social distance is not associated with the frequency of online contact.
Lissitsa (2017a)	(1) Frequency of online contact, Political position, and Online political participation; (2) Self-perceived social distance toward Israeli Arabs	The more Jews are in contact with Arabs on social media, the closer they feel to them. A significant positive correlation was found between political participation and the frequency of online contact.
Lissitsa & Kushnirovich (2018)	(1) Frequency of online contact, Quality of online contact; (2) Attitudes towards Israeli Palestinians, Attitudes towards Non-Israeli Palestinians	A direct positive relationship between the frequency of online positive contact with Israeli Palestinians and attitudes towards them. Direct negative relationship between the frequency of online negative contact with Israeli Palestinians and attitudes towards them.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Lissitsa & Kushnirovich (2019)	(1) Frequency of online contact, Exposure to negative content about Arabs in digital media, (Face-to-face contact); (2) Subtle prejudice towards Arabs, Blatant prejudice towards Arabs	Those who interacted more frequently with Arabs in digital media were less likely to report extreme subtle prejudice; however, the impact of online contact on blatant prejudice was nonsignificant. Higher exposure to negative content about Arabs in the digital media was associated with lower (and not higher) levels of subtle prejudice; exposure to negative content about Arabs in the digital media did not affect blatant prejudice.
Lissitsa & Kushnirovich (2020) - Study 1	(1) Exposure to LGBT content in online news, Exposure to LGBT content on social media; (2) Frequency of face-to-face LGBT contact Frequency of online LGBT contact	There was a significant relationship between exposure to LGBT online news and face-to-face LGBT contact, but the relationship to online LGBT contact was non-significant. More frequent exposure to LGBT content on forums, blogs, and social networks results in increased face-to-face and online LGBT contact. The study found that exposure to LGBT content both in online news and on social media had positive significant effects on attitudes toward the LGBT community.
MacInnis & Hodson (2015)	(1) Early discovery of partner's belonging to sexual minority vs. late (post-interaction); (2) Attitudes toward gay men and lesbians	The manipulation had no direct effect on attitudes towards homosexual people.
Mancini & Imperato (2020)	(1) Online contact; (2) Mediated Perceived Online Sexual Discrimination, Vicarious Perceived Online Sexual Discrimination	Online intergroup contact was positively associated with both mediated and vicarious perceived discrimination.
Matsick et al. (2020) - Study 1	(1) Rainbow filter vs no filter on profile picture by queer vs heterosexual woman; (2) Attitudes towards LGBTQ people, Willingness to interact with the target, Perceived closeness to outgroup	Participants who saw profiles of homosexual couples reported lower scores in the "hate" subscale of the attitude's questionnaire. No other effect was detected. No effect of sexual orientation and filter use on willingness to interact and perceived closeness to outgroup.
Matsick et al. (2020) - Study 2	(1) Rainbow filter vs no filter on profile picture by queer vs heterosexual woman; (2) Feeling thermometer, Attitudes towards LGBTQ people, Modern rights, Perceived closeness to outgroup	No main effects on feeling thermometer. No main effects on attitudes, modern rights, or perceived closeness either.
Maunder et al. (2019)	(1) Intergroup E-contact with a person with Schizophrenia vs. ingroup contact vs. no contact; (2) Stereotyping, Social Distance.	E-contact significantly reduced fear, anger, pity, and stereotyping towards people with schizophrenia compared to both control groups. No effect on social distance.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Mustafa & Poh (2019)	(1) Intergroup vs ingroup contact, CMC vs face-to-face; (2) Intercultural attitudes	The intervention carried out in CMC did not affect attitudes over time. In the CMC condition, prejudice decreased when there was intergroup contact (vs ingroup condition).
Neubaum et al. (2020)	(1) Visualizing the Facebook profile of three different male vs female outgroup members; (2) Stereotypes (warmth and competence; emotional imbalance); Prejudice (benevolence); Intended discrimination (social acceptance)	Contact positively affected perceived warmth towards people with schizophrenia and perceived competence towards people with schizophrenia and transgender people. There was no effect on emotional imbalance. Contact positively affected benevolence and social acceptance towards people with schizophrenia.
Park et al. (2019)	(1) Frequency of online contact, Frequency of face-to-face contact; (2) Wrongfulness of offline/online race-based exclusion and non-race-based exclusion	Participants rated race-based exclusion as more wrong across levels of online contact and exclusion context compared with non-race-based exclusion.
Pertwi et al. (2020) - Study 1	(1) Frequency of online contact; (2) Outgroup evaluation	Not reported
Pertwi et al. (2020) - Study 2	(1) Frequency of online contact; (2) Outgroup evaluation	Online contact significantly predicts outgroup evaluations
Rodriguez-Rivas et al. (2021)	(1) E-contact with a person with schizophrenia; (2) Attitudes towards people with schizophrenia	The experimental group showed better attitudes towards people with schizophrenia compared to the control group. No significant effect of time.
Römpke et al. (2019) - Study 1	(1) Chat, cooperative game, inducing common ingroup identity; (2) Sympathy, Trust, Perceived similarity, Willingness for further contact	The experimental group had higher sympathy, trust, perceived similarity, and willingness for further contact than the control group.
Schumann (2017) - Study 1	(1) Online contact (anonymity of the outgroup member: yes vs. no, anonymity of the self: yes vs. no); (2) Explicit negative outgroup attitudes	Non-baptized students had better attitudes towards baptized ones after online intergroup contact. Baptized students' outgroup attitudes did not change over time.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Schumann et al. (2017) - Study 2	(1) Online contact (anonymity of the outgroup member: yes vs no, anonymity of the self: yes vs no); (2) Feeling thermometer, Positive explicit out-group attitudes, Identification with the superordinate group	Feelings of warmth (feeling thermometers), positive attitudes, and identification with a superordinate group increased following contact.
Schwab & Greitemeyer (2015a) - Study 2	(1) Common Facebook friends belonging to the ingroup; (2) Feeling thermometer	No effect of the intervention on intergroup attitudes (feeling thermometer).
Schwab & Greitemeyer (2015a) - Study 3a	(1) Common Facebook friends belonging to the ingroup; (2) Feeling thermometer	No effect of the intervention on intergroup attitudes (feeling thermometer).
Schwab & Greitemeyer (2015a) - Study 3b	(1) Common Facebook friends belonging to the ingroup; (2) Feeling thermometer	No effect of the intervention on intergroup attitudes (feeling thermometer).
Schwab & Greitemeyer (2015a) - Study 4a	(1) Common Facebook friends belonging to the ingroup; (2) Feeling thermometer	No effect of the intervention on intergroup attitudes (feeling thermometer).
Schwab & Greitemeyer (2015a) - Study 4b	(1) Common Facebook friends belonging to the ingroup; (2) Feeling thermometer	No effect of the intervention on intergroup attitudes (feeling thermometer).
Schwab & Greitemeyer (2015a) - Study 5	(1) Common Facebook friends belonging to the ingroup; (2) Implicit attitudes, Prosocial intentions	No effect of the intervention on implicit intergroup attitudes and prosocial intentions.
Schwab & Greitemeyer (2015b)	(1) Number of FB friends belonging to outgroups (i.e., a home country other than the participants'); (2) Attitude towards immigrants, ethnic minorities, foreigners, Muslims, and Jews	Positive correlation between the percentage of FB friends belonging to an outgroup and overall attitudes towards outgroups
Schwab et al. (2019)	(1) Online contact on Facebook; (2) Attitude towards Iranians/Israeli	Significant positive correlation between online contact and attitude towards the outgroup.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Stiff & Kedra (2020)	(1) Play partner: outgroup vs alone; Opponent type: human vs controlled; (2) Attitude toward the outgroup	Participants expressed a more positive attitude toward the outgroup when they had played with an outgroup member than when they had played alone. Opponent type was not a significant main effect, but the examination of the means seemed to suggest attitude toward the outgroup was more positive when playing against a human opponent compared with a computer opponent.
Taniguchi & Glowacki (2021) - Study 1	(1) Coping strategies to depression, Peer support received on social media; (2) Social support intentions, Empathy, Social distance, Depression stigma	Coping strategies did not influence empathy but were associated to support intention (poor coping was associated to greater support intention than good coping. Balanced coping did not significantly differ from either one) and social distance (poor coping was associated to greater desire for social distance compared to both balanced and good coping). Depression stigma was not affected by the manipulation. The manipulation of peer support on social media did not affect any of the DVs.
Taniguchi & Glowacki (2021) - Study 2	(1) Coping strategies to depression, Peer support received on social media; (2) Social support intentions, Empathy, Social distance, Depression stigma	Coping strategies did not influence empathy but were associated to support intention (poor coping was associated to greater support intention than good coping and balanced coping. Balanced coping didn't significantly differ from good coping) and social distance (poor and balanced coping were associated to greater desire for social distance compared to good coping). The manipulation of peer support on social media affected empathy (response condition was associated to greater empathy) and social distance (no response condition was associated to greater desired social distance). Depression stigma was not affected by the manipulation.
Tavakoli et al. (2010)	(1) Online interacting in pairs Canadian-Iranian; (2) Knowledge and Attitudes, Behaviour Intentions, Stereotype, Perception of Similarities, Evaluation of Activity	Canadians and Iranians significantly increased their average self-ratings about knowledge of the other culture. No difference in behavioural intentions. Interaction improved the stereotype of typical members of the culture. Perception of similarity did not change.
Tippin & Maranzan (2019)	(1) Watching a photovoice video vs control video; (2) Perceived dangerousness, Social distance, Attributions (responsibility, anger, fear)	Participants in the experimental condition showed lower anger, fear, desired social distance, and perception of dangerousness. Follow up: only desired social distance was still significantly lower 1 month after the intervention.
Tynes et al. (2008)	(1) Online intergroup contact (Ethnic identity); (2) Other group orientation	Greater online intergroup contact was related to greater outgroup orientation for European Americans, no significant correlation for minorities. Outgroup orientation was found to be correlated with learning from diverse groups online for European Americans, but not for ethnic minorities and multiracials.

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
Tynes et al. (2013)	(1) Online contact, Face-to-face contact, Online racial discrimination; (2) Racial climate experiences	African American students reported significantly higher levels of individual online racial discrimination, vicarious online discrimination, diverse offline contact, diverse online contact, and lower levels of racial climate experiences than European American students. Individual online racial discrimination is a negative predictor of the perception of campus racial climate. Online diverse contact and vicarious online discrimination are not significant predictors.
Voelkel et al. (2021) - Study 2	(1) Discussion with two political outgroup members (virtual confederates): inclusion vs exclusion; (2) Momentary prejudice	Participants in the political inclusion condition were significantly less prejudiced toward the political outgroup than participants in the control condition. Participants in the political exclusion condition were not significantly more prejudiced toward the political outgroup than participants in the control condition. Participants in the political inclusion condition were less prejudiced than participants in the political exclusion condition, but this difference was not statistically significant.
Voelkel (2021) - Studio 3	(1) Discussion with two political outgroup members (virtual confederates): inclusion vs exclusion; (2) Momentary prejudice	Participants in the political inclusion condition were significantly less prejudiced toward the political outgroup than participants in the control condition. Participants in the non-political inclusion condition were also significantly less prejudiced toward the political outgroup than participants in the control condition. Participants in the two inclusion conditions reported similar levels of prejudice.
Walther et al. (2015)	(1) Social identification with their group (6 members, two for each religious group) Participation in virtual groups; (2) Prejudice toward each religious/cultural group	Participation in the virtual groups over time exerted a decrease in outgroup prejudice. Participants' attitudes toward their initially most unfavoured religious group became less unfavourable after the virtual groups experience, while attitudes toward less different groups remained relatively unchanged or slightly less favourable. The CMC multicultural virtual groups participants were less prejudiced toward outgroups than were control subjects who did not participate. This was true for religious Jews' attitudes toward Muslims, and for Muslims' attitudes toward both religious Jews, as well as toward secular Jews. Secular Jews' post-test scores did not differ between course participants and control subjects. There was no significant association of members' level of social identification with their virtual group and their final attitude toward their respective outgroup.
White & Abu-Rayya (2012)	(1) E-contact; (2) Intergroup bias, Prejudice	No effect of the condition on prejudice. Participants in the DIEC condition reported a greater reduction in intergroup bias than the control condition between T1 and T2, as well as between T1 and T3 (greater for Muslims participants). Main effects of time: reduction maintained across time for intergroup bias, intergroup anxiety, and growth of outgroup knowledge.
White et al. (2015)	(1) E-contact; (2) Intergroup bias	Controlling for Time 1 values of intergroup bias, this measure was significantly lower in the DIEC chat groups than control chat groups at Time 2, Time 3 and Time 4. The intervention significantly increased affect, and positive emotion words, and significantly decreased anger and sadness words, among the DIEC chat groups compared to Control chat groups. There was also a marginal decrease in negative emotion

Study	(1) Predictors/Intervention (2) Outcome(s)	Results for the main outcome
		words among the DIEC chat groups compared to Control chat groups. The intervention did not have any notable effect on anxiety expression.
White et al. (2019a)	(1) E-contact; (2) Outgroup attitudes	Compared to the baseline condition, E-contact significantly improved outgroup attitudes. Across all dependent measures there were no main effects for religion.
White et al. (2019b)	(1) E-contact; (2) Sexual prejudice; Outgroup avoidance	Participants in the E-contact condition reported reduced outgroup avoidance relative to the control condition (intragroup). No significant effect of the E-contact condition on sexual prejudice.
Wu et al. (2017)	(1) Online LGB contacts, Interpersonal-mediated contact, Parasocial-mediated contact; (2) Tolerance of homosexuality, Acceptance of homosexuality	Interpersonal-mediated interaction positively predicted the levels of tolerance and acceptance. Parasocial-mediated interaction isn't a positive predictor of the levels of tolerance and acceptance. Online contacts positively predict both parasocial mediated contact and interpersonal mediated contact.
Žeželj et al. (2017)	(1) Online interethnic friendships, Face-to-face interethnic contacts; (2) Positive outgroup attitudes	Online friendships were significantly positively related to out-group attitudes. These effects were found over and above the significant direct and indirect effects of face-to-face contacts.

Majorities and minorities in the online intergroup contact

Some of the 64 analysed studies investigated the point of view of a majority social group ($n = 24$) or of a minority social group ($n = 5$). The remaining studies considered both majority and minority social groups separately ($n = 12$) or mixed in the same sample in the analyses ($n = 10$). Finally, for some of the included studies ($n = 13$), it is impossible to apply a majority/minority intergroup categorization. Most of the studies which involved majority group members focused on the ethnicity ($n = 11$), on the relation between Israeli majority and Israeli Ethiopian minority in Israel (Abu-Rayya, 2017), Spanish majority and Latin Americans minority in Spain (Alviderez et al., 2015), New Zealanders majority and Asians minority in New Zealand (Hsueh et al., 2015), Americans majority and undocumented immigrants minority in the US (Kim & Wojcieszak, 2018), Americans majority

and Chinese international students minority in the US (Kim & Harwood, 2020), Jewish majority and Arabs minority (Lev-On & Lissitsa, 2015; Lissitsa, 2017; Lissitsa & Kushnirovich, 2019) and Israeli Palestinians minority (Lissitsa & Kushnirovich, 2018) in Israel, Germans majority and Paraguayans minority in Germany (Römpke et al., 2019, study 1), and Serbs majority and Albanians minority in Serbia, for Greek Cypriots majority and Turkish Cypriots minority in Cyprus, and Croats majority and Serbs minority in Croatia (Žeželj et al., 2017). Two studies (Bruneau et al., 2021, Study 3a and Study 3b) focused on the intergroup relationship between the American majority and Muslim minority in the US. Other studies which involved majority group members focused on sexual orientation ($n = 7$): on the relationship between cisgender majority and transgender minority in Australia (Boccanfuso et al., 2020), sexual majority and LGBT individuals in Israel (Lissitsa & Kushnirovich, 2020), heterosexual men and women and gay man and lesbian women in Canada (MacInnis & Hodson, 2015), Australia (White et al., 2019), and China (Wu et al., 2017), and heterosexual men and women and LGBTQ people in the US (Matsick et al., 2020, study 1 and study 2). Then, other studies ($n = 4$) focused on different forms of disease, investigating attitudes towards population groups affected by blood-borne viruses in Australia (Broady et al., 2021), stigma and social distance towards people with schizophrenia in Australia (Maunder et al., 2019), stereotypes and prejudice towards people with physical disability and schizophrenia in Germany (Neubaum et al., 2020), and attitudes and stigma of university students toward people with mental disorders in Chile (Rodriguez-Rivas et al., 2021). As for the studies involving majority social groups, as well as for those involving minority social groups, most focused on ethnicity ($n = 4$), investigating mainland Chinese students' attitudes towards Hong Kong people in Hong Kong (Cao & Lin, 2017), social capital of Chinese students in Belgium (Cao & Meng, 2020), Chinese students' relations with French majority in France (Cao et al., 2018), and Former Soviet Union immigrants' relations with Israeli veterans in Israel (Lissitsa, 2016). Then, Schumann (2017, study 2) investigated students' evaluations of higher status students in university. The studies with mixed samples mainly focused on ethnic majorities and minorities ($n = 4$) in the US (Park et al., 2019; Schwab & Greitemeyer, 2015a, study

2) and Austria (Schwab & Greitemeyer, 2015b) and on sexual majorities and minorities in Italy (Mancini & Imperato, 2020). Finally, only one study by White et al. (2015) focused on different religious groups, in particular on Muslims and Christians in Australia. Of the studies in our sample that made a comparison between majority and minority participants, most ($n = 7$) focused on ethnic intergroup relations, for example, between Black and White students in South Africa (Finchilescu, 2010), Chinese and Malay in Malaysia (Mustafa & Poh, 2019), European Americans and Chinese Americans in US, and Javanese and Chinese Indonesians in Indonesia (Pertwi et al., 2020, study 1 and study 2), different ethnic groups in US (Tynes, 2006), European Americans and ethnic minority subgroups (Tynes et al., 2008), and European Americans and African Americans (Tynes et al., 2013). Other studies ($n = 3$) involved different religious groups, like Religious Jews, Secular Jews, and Muslims in Israel (Walther et al., 2015), Christians and Muslims in Australia (White & Abu-Rayya, 2012), and Catholics and Protestants in Ireland (White et al., 2019). Then, Taniguchi and Glowacki (2021, study 1 and study 2) involved people who experienced or did not experience depression. Finally, Schumann and colleagues (2017, study 1) involved baptized and non-baptized students in Belgium.

Implementation or measurement of the Allport's conditions

Regarding Allport's conditions for optimal intergroup contact (cooperation, common goals, equal status, and authority support), only less than one-third of the studies ($n = 20$) implemented or measured them. Only two studies (Pertwi et al., 2020, Study 1 and Study 2) measured them in a correlational study. However, they measured them in relation to the social context (not online) and therefore do not provide us with specific knowledge of their perception in unstructured online contact. The remaining studies manipulated the interaction, including the four conditions in the contact intervention.

In a study by White and Abu-Rayya (2012), Muslim and Christian high school students interacted through the E-contact paradigm to cooperatively exchange opinions on how their

respective religious beliefs and habits could be used together for the superordinate and common goal to improve a water and energy saving or recycling solution for a sustainable Australia from an environmental point of view. Moreover, the interacting groups were composed of a balanced number of Christian and Muslim students. Finally, the intervention had the support of principals and teachers – school authorities – because the program was included in the studies curriculum (White & Abu-Rayya, 2012). In another E-contact study, Allport's conditions were incorporated by assigning a balanced number of Ethiopian and Israeli students to the chat groups, who were instructed to cooperate to achieve the cultural common goal, supported by professionals (Abu-Rayya, 2017). In a pre-programmed E-contact study involving Catholic and Protestants in Northern Ireland, participants had to interact with the outgroup member working together cooperatively with the common aim to propose a strategy to help future new students face their first year of university. A chat moderator supervised and supported the interaction (White et al., 2019a). Another example of how conditions are implemented in the E-contact interventions to reduce transgender stigma can be found in Boccanfuso and colleagues' (2020) study in which participants were instructed to cooperate with the chat partner, with the common goal of proposing solutions through which Australian people can improve their free time and achieve a better work-life balance. A pre-programmed moderator supported all the chat interaction. The equal status between the two participants (the real one and the pre-programmed one) was highlighted in the first part of the online chat by the moderator (Boccanfuso et al., 2020). In addition to the studies investigating the E-contact paradigm, other research has also used Allport's conditions as characteristics to base the manipulated interaction. For example, in a study by Adachi and colleagues (2015), university students (of the same status) played collaboratively, working together with the aim of killing zombies in an online game. Another study by Amzalag and Shapira (2021) reported an online professional development program for teachers supported by the Ministry of Education. This program took place in an online environment, which created an equal starting point among participants, who were all teachers who shared an equal professional identity. They cooperated in groups with the common aim of developing their skills

related to intergroup relations. Bruneau and colleagues (2021) tested a video interaction in small groups composed of 8 or 10 college students from a different religion; the interaction was characterized by normative support and equal status, cooperation on projects with shared goals (e.g., critically analysing video clips). Mustafa and Poh (2019) tested intercultural contact in virtual pairs in which participants had equal status, being all first- or second-year university students, and they were asked to cooperate to reach a common goal in four different sessions. All the students gained their teachers' approval and support for their participation. Röpke and colleagues (2019) asked participants to cooperate with a pre-programmed outgroup member by completing a nine pieces jigsaw puzzle that ended in a colourful work of modern art. Both participants were university students with common interests. Schumann and colleagues (2017) implemented the four conditions by instructing participants (all university students) to discuss with an outgroup student about the possibility of using the social media site Facebook to study and prepare for exams. They also told participants that the university administration was interested in considering their proposals. Finally, a study by Walther and colleagues (2015) investigated a virtual intervention incorporating cooperative pedagogies. Moreover, they implemented equal status among participants through the intervention of the instructors that minimized differences in their skills related to the task. Institutional support was activated by administering credits for participation and by a public endorsement by the heads of the colleges.

Discussion

The present systematic review aimed to examine (a) similarities and differences of online contact effects for majority and minority group members and (b) the ways optimal conditions are implemented or achieved in the context of online contact. To this end, following the PRISMA guidelines (Moher et al., 2009), the present systematic review led to a final pull of 64 studies.

General characteristics of the studies

From a general overview of the studies, most have been conducted in Western countries, with most studies conducted between North America, Australia, and Europe. Instead, the countries of East Asia and South America are largely underrepresented, and the African continent is completely absent in this research panorama. This asymmetry reflects a bias widely present in international scientific literature, “produced in western nations, by western authors for western readers” (Young, 2015, p. 29). In relation to the research on intergroup contact, this bias can play a particularly relevant role since the investigated outgroups often belong to these geographical and cultural areas. Applying a Western filter to this investigation can lead to misleading results: future studies could, therefore, approach this field of research with a more informed and aware vision of this bias.

Moving attention to the design characteristics of the analysed studies, a greater number of experimental studies, which manipulated online intergroup contact, emerge, compared to the number of correlational studies. This numerical advantage of the experimental designs in online contact research is possibly because it is easier to run an online intergroup contact experiment compared to implementing offline contact programs, due to the numerous advantages of the online environment in building intergroup contact contexts, as discussed in the first chapter of the thesis. A second factor that may lead researchers to choose an experimental protocol rather than a cross-sectional one may be the difficulty in investigating the phenomenon of online intergroup interactions through the questions used to investigate intergroup contact quality and quantity, as widely used in face-to-face contact research. In fact, these questions may be too general. They may not capture the type of contact experience the participants face online, resulting in the risk of running into very broad questions, which, therefore, return less informative answers on the phenomenon.

Among the latter, none has a longitudinal research design (i.e., more than one wave of data collection), however, longitudinal observation would allow the investigation of participants' experiences of online intergroup contact keeping subjective variables and individual differences

constant, therefore it would be important to expand the literature on online contact through this type of research design. Furthermore, in the cross-sectional studies examined in this systematic review, participants were asked to report retrospectively the amount of online contact with the outgroup, or the number of contacts on social media (e.g., Schwab & Greitemeyer, 2015b) in a very general way (e.g., Pertiwi et al., 2020). This type of measurement leads to very vague information on the participant's contact experience, failing to define the nature of the experience exactly. Future studies could investigate online contact experiences in more detail, to understand more clearly what characteristics of contact make it have significantly positive effects on intergroup relations (e.g., Amichai-Hamburger et al., 2015). It is also important to note that direct contact experiences have been investigated more widely than indirect contact experiences. Although it is very important to understand the dynamics and effects of online direct interactions with the outgroup, future research could focus more on online forms of indirect contact. In fact, most contacts currently take place through social media, which allows watching published content without interacting directly with outgroup members (e.g., by scrolling through the reels, without adding comments). Given the strength with which this way of spending time is developing and given the diversity of contents to which people are exposed, it is certainly of great importance for contact research to focus on this aspect. A similar aspect emerged from the classification of the means through which contact occurs. In fact, more than half of the studies investigated contact that occurs via chat. Although it is important to investigate this means of contact, interactions and exposure to online content evolve rapidly, and text is increasingly giving way to images and videos, where the textual component is limited to some subtitles, or to short exchanges of comments below these audio-visual stimuli. Consequently, it is extremely important to align the research to the rapid changes occurring in the modalities of online interaction.

Finally, another important issue concerns the groups involved in the research. In line with the literature on face-to-face contact (Pettigrew & Tropp, 2006), an imbalance towards ethnic intergroup

relations also emerged from the pull of the studies considered in this review. However, the richness and diversity of online materials allow direct contact or exposure to many types of diversity, shifting attention to very different social groups, even with identities that are not immediately visible. For this reason, it is extremely important that future research broadens its focus to include intergroup relations that deviate from the classic ones.

Majorities and minorities in the online intergroup contact

Moving attention to the status of the groups involved in the contact, a disproportion in favour of majority social groups emerges. In fact, most studies involved participants from majority social groups, investigating whether and how online contact can improve their perception of minority social groups. This characteristic also aligns with the classic literature on intergroup contact (Pettigrew & Tropp, 2006). Although this asymmetry is understandable, given the greater availability of majority participants in research for simple numerical reasons, this disparity in representativeness in research could contribute to reinforcing disparities in society. Consequently, it is very important that research on intergroup contact attempts to achieve greater representativeness and inclusion in its studies, to ensure that particular groups or communities are neither unfairly underrepresented nor excluded from research.

When moving the attention to the few studies involving participants from minority social groups, it emerges that the results are inconsistent. For example, Cao and Meng (2020) found that online contact was not directly related to global attitudes and social capital for Chinese students in Belgium, while face-to-face contact was directly and positively related. Conversely, Cao and colleagues (2018) found that online contact had a significant positive effect on social connectedness and social support and a significant negative effect on perceived prejudice for Chinese students in France, while face-to-face contact had a non-significant direct effect. Investigating the relation between Former Soviet Union immigrants and Israeli veterans in Israel, Lissitsa (2016) found that the association between frequency of online contact and social distance was significant only for some

of the investigated target sub-groups of Israelis. Finally, Schumann and colleagues (2017) found increased feelings of warmth, positive attitudes, and identification with a superordinate group following contact, investigating students' attitudes toward other students from a higher-status university. Therefore, given the limited number of studies and the diversity of the groups and relationships investigated, it is very difficult to draw conclusions about the effectiveness of online contact for minority groups.

Even studies that compare the effects between majority and minority groups do not provide a clear picture. A first set of studies that compared the groups suggested that the effects of contact on prejudice are greater for majority social groups, in line with evidence on face-to-face contact (Tropp & Pettigrew, 2005). Indeed, Mustafa and Poh (2019), by investigating the relationship between Chinese and Malay in Malaysia, found that online contact had a higher positive effect on prejudice reduction among the majority social group compared to the minority social group. Also, Tynes and colleagues (2008) found that greater online intergroup contact was related to greater outgroup orientation for European Americans, while they found no significant correlation for minorities. Furthermore, Schumann and colleagues (2017) found that the main effect of online interaction on reduced prejudice was only significant for the majority social group. Differently, more encouraging results come from the study by White and colleagues (2019a) who found no influence of the group belonging on the effect of E-contact on outgroup attitudes of Catholics and Protestants in Ireland. Finally, White and Abu-Rayya (2012) found the positive effect of E-contact intervention on the reduction of intergroup bias to be greater for Muslim participants – even though they reported higher levels of this variable before contact – compared to Christians. To summarise, although there appears to be a tendency to report more positive effects of online contact on intergroup relations for majority social groups, the scarcity of studies and the diversity of intergroup relations investigated make it impossible to draw a conclusion with certainty.

Turning our attention to the involved groups, from a general look at the studies, what emerges is the absence of studies investigating the point of view of sexual minorities in online intergroup contact. In fact, while there are studies that investigate online contact, both spontaneous (e.g., Lissitsa & Kushnirovich, 2020) and controlled (e.g., White et al., 2019b), by the point of view of people with majority sexual orientations, no study has collected the experiences of intergroup contact of minorities. Therefore, it is necessary to expand the literature on contact by also investigating the point of view of this social group.

Furthermore, it is also important to pay attention to the variables investigated when including minority groups. The use of variables such as attitude towards the outgroup, or perceived discrimination, is typical in classic research on intergroup contact, which however has its roots in ethnic intergroup relations, and was developed around the 1950s in the United States, investigating intergroup relations between Whites and Blacks, in a context of strong social tension. However, as contact research expanded, it began investigating other intergroup relationships. Therefore, it was also extended to other minorities, including religious minorities, political minorities, sexual minorities, and related to physical and mental health status. It becomes evident that the type of discrimination perceived by an ethnic minority may be different from the discrimination perceived by a person with a minority sexual orientation, for example, due to the fact that the former group is much more intuitively identifiable - and therefore exposed to direct discrimination - than the latter. Consequently, it is no longer sufficient to retest the variables investigated in the classic literature on contact. However, it becomes necessary to identify other variables that are able to more precisely intercept the specific experiences and perceptions of the different minority groups.

Implementation or measurement of the Allport's conditions

As regards the optimal conditions of contact proposed by Allport (1954), i.e., cooperation, common goals, equal status, and support from the authority, only a third of the experimental studies implemented them in the interaction. An even smaller number of studies measured them to understand

whether the participants actually perceived them. Of these experimental studies, none have tested whether the conditions are effective by comparing a condition in which they are activated and one in which they are not. Certainly, the implementation of Allport's conditions online can have some limitations, especially in relation to the creation of *cooperative tasks* and the achievement of *common goals*. In fact, if in face-to-face contact, it may be sufficient to organize a simple task that must be carried out collaboratively and which leads to the construction of something concrete and tangible, which can be easily perceived by the participants, in online contact, this is more difficult. Moving to the online studies that we have reviewed, in most cases, they were manipulated through a short interaction via chat. A possible limitation of this type of implementation is that cooperation never occurs through a task actually performed together, which leads to a tangible result (for an exception, see Röpcke et al., 2019 and White & Abu-Rayya, 2012), that can be visualized by the participants as the concrete result of their task carried out together. A possible implication of the lack of a tangible outcome (such as a shared victory) may lead cooperation towards a common goal to be less perceived by participants and, consequently, to have less impact in strengthening the effects of contact. Regarding *equal status*, in most studies, it is taken for granted as the participants were all students. This aspect can also limit the participants' perception of the condition. In fact, student status is related to their "occupation" which refers to their social identity and not the contact situation investigated. Consequently, as participants bring their social identities into the contact situations, other aspects may also be salient, such as ethnic differences. These differences are also expressed through language, which, in most studies investigated, is the main means of interaction. Thus, status differences are not actually cancelled out, but are still reflected in the contact. An interesting aspect concerns the definition of equal status, which must be such *within* the interaction (Pettigrew, 1998). In this sense, therefore, future studies could pay more attention to verifying that equal status is perceived by participants *in the situation in which they interact*, rather than in relation to their identity in general. Finally, *authority support* was often manipulated through teachers' approval for participation in programs or by awarding points for participation. This, too, can limit the perception of this condition.

Since the participants are mostly students, this type of support can be perceived more as a social expectation or reward. However, this condition is defined as authority support for diversity and positive contact (Pettigrew, 1998), rather than participation in a specific program. Therefore, future studies could focus on making participants perceive that authority in the context promotes diversity and integration, without focusing on rewards or expectations.

Given the heterogeneity in the implementation of conditions across studies and that only a small number of the studies which implemented the conditions added a control measure of them, it is difficult to draw conclusions on the possibility that the presence of Allport's conditions favoured the effects of contact on the reduction of prejudice. Although in the studies that measured them (see White et al., 2020) participants reported them as present – the mean condition scores are higher than the midpoint of the scale – none of these studies compared an interaction in which the conditions were present and one in which the conditions were absent. Therefore, none of the studies currently present in the literature on online contact allow to understand whether the conditions strengthen the effects of contact on prejudice. However, since online contact has different characteristics from face-to-face contact (Amichai-Hamburger et al., 2015), which can also influence the role of Allport's conditions in online contact, it is necessary to empirically test the role of the conditions in online contact. Finally, no study has investigated their presence in intergroup interactions online via social media. However, this mode of interaction is predominant today, and social media are relatively structured environments, in which the interaction methods are pre-established, and which have the possibility of dictating behavioural guidelines. Therefore, it becomes critical to understand whether Allport's conditions are perceived in these environments and whether they play a role in facilitating the effects of contact.

Conclusion

The present systematic review aimed to consider (a) similarities and differences of online contact effects for majority and minority group members, and (b) the ways optimal conditions are

implemented or achieved in the context of online contact. In relation to the first aim, a large disproportion has emerged between the presence of majority and minority groups in studies on online intergroup contact, with a much smaller number of studies involving minority social groups. Furthermore, studies investigating the point of view of sexual minorities in online intergroup contact are completely missing. Regarding online contact effects for majority and minority group members, there appears to be a tendency to report more positive effects of online contact on intergroup relations for majority social groups. Nevertheless, the scarcity of studies and the diversity of intergroup relations investigated make it impossible to draw a conclusion with certainty. In relation to the second aim, what emerges is that no study has so far manipulated Allport's (1954) conditions for optimal intergroup contact in online interactions to compare their presence with their absence to understand if they can still be considered as facilitating the contact to be effective. Furthermore, no study has investigated their presence in intergroup interactions online via social media. The studies presented in the next two chapters aim to fill these gaps in the literature on online intergroup contact.

Chapter 3. Online intergroup contact: an experimental test of Allport's conditions

The literature on intergroup contact is characterised by many studies that have developed contact interventions based on the optimal contact conditions proposed by Allport (1954). An important meta-analysis on face-to-face contact carried out by Pettigrew and Tropp (2006) demonstrated that Allport's conditions played a facilitating role in the effects of contact on prejudice, even if they were not essential for these effects to remain present. This study also showed that this facilitating effect was present for the majority but not for minority social groups. In line with the literature on offline contact, the metanalysis by Imperato and colleagues (2021a), showed that online contact moderately reduced prejudice towards the outgroups. Furthermore, they found that – out of the four Allport's conditions – cooperation facilitated the effects of online contact on prejudice. However, this study still leaves questions to be investigated. First, the authors could not code the presence or absence of equality of status, interpreting it as always present, since the studies considered were all intervention studies. Second, the authors did not explicitly state the criteria for which the conditions were interpreted as present or absent. However, from the analysis of the studies considered in the systematic review presented in the previous chapter, it emerges that the conditions have been implemented in very different and not always comparable ways. It also emerged that only a small number of the studies that implemented the conditions added a control measure of them. Given this evidence, it is difficult to draw a conclusion on the possibility that the presence of Allport's conditions favoured the effects of contact on the reduction of prejudice. In the studies that measured the conditions (see White et al., 2020), participants reported them as present. Indeed, the mean condition scores were higher than the scale's midpoint. Nevertheless, none of these studies compared an interaction in which the conditions were present and one in which the conditions were absent. Therefore, none of the studies currently present in the literature on online contact allow to understand whether the optimal conditions strengthen the effects of contact on prejudice. However, since online contact has different characteristics from face-to-face contact (Amichai-Hamburger et al., 2015), which can also influence the role of Allport's conditions in online contact, it is necessary to

empirically test the role of the conditions in online contact. For this reason, it was deemed necessary to create an experimental manipulation in which it was possible to empirically compare the presence and absence of conditions while keeping all other variables constant.

Another evidence that we know so far from the meta-analysis by Imperato and colleagues (2021a) is that they found no differences between the studies that involved only majority social group participants and studies in which the participants belonged to both minority and majority social groups (Imperato et al., 2021a). Although this evidence is encouraging, it is considered important to directly compare a majority and a minority social group. In this way, we will have a clearer idea of the effects of contact for the two groups. Indeed, it has been shown that minorities are more prone to approach the contact with negative expectations, due to their feeling of being targets of prejudice by the majority, especially when the group membership is explicit and cannot be hidden (Tropp & Pettigrew, 2005). Interestingly, the online environment offers the possibility of interacting while maintaining different levels of anonymity or physical exposure (Amichai-Hamburger et al., 2015). This feature of online interaction leaves the possibility of showing one's group identity as much and when one wants, levelling intergroup anxiety or perceived threat. This climate of greater security and control and less worry about being the target of discrimination and prejudice could allow minorities to have a more authentic experience of cooperation towards a common goal of equal status and support from authority. Despite these important potentials of the online environment for minority social groups, no studies have investigated the effects of Allport's conditions on intergroup relations for minority social groups in online contact.

Interestingly, another meta-analysis by White and colleagues (2020), already discussed in the previous chapters, revealed that text-based intergroup online contact, which the authors called E-contact, compared to control, had a significant and large effect on cognitive/attitudinal measures of prejudice, a significant and medium effect on affective measures of prejudice, and a significant and medium effect on behavioural intentions measures of prejudice. However, the last was based on only

three effect sizes. Since in this study we also used a text-based online contact intervention, inspired by the paradigm of White and colleagues (2020), we decided to refer to this theoretical model proposed by the authors in order to test the effects of Allport's conditions in a structured online contact on attitudinal, emotional and behavioural intention outcomes. As for the attitudinal outcome, we focused on intergroup attitudes (Wright et al., 1997). As for the emotional outcomes, a series of studies included in the meta-analysis (White & Abu-Rayya, 2012; White et al., 2014; Abu-Rayya, 2017; White et al., 2019a; White et al., 2019b), proved the importance of intergroup anxiety. An explanation of the role played by intergroup anxiety provided by the authors is that text-based online contact creates for the participants a situation in which they could have a high degree of control over how they present themselves to the other group and may give more room to the creation of the desired impression people want to make, reducing intergroup anxiety (White et al., 2020). Regarding the role of other emotional outcomes, White and colleagues (2020) reported the investigation of intergroup empathy. However, only a few studies have looked at it in online contact (see Berry and White, 2016), and from the limited evidence, it seems to play a less relevant role (White et al., 2020). However, more evidence is needed to understand the role of this variable. A possible reason for the few investigations relating to this variable may be that online relationships may be considered less engaging and sometimes more depersonalized compared to face-to-face ones. It, therefore, may have less effect on an emotional variable such as empathy. In particular, some of the characteristics listed by Amichai-Hamburger and colleagues (2015), such as anonymity and the possibility of avoiding physical exposure, can hinder the development of empathy in online contexts. However, no study has currently investigated the effects of Allport's conditions on this variable, which remains of fundamental importance in intergroup relations (Pettigrew & Tropp, 2008). Finally, among behavioural intentions variables, we decided to focus on self-disclosure. Many studies about computer-mediated self-disclosure suggest that the online environment may be suitable for people to be encouraged to share more personal information (Schouten et al., 2009), given the sense of security this type of interaction guarantees. Furthermore, White and colleagues (2015) suggest that online

contact can perform a preparatory function for face-to-face contact precisely because it takes place in a psychologically safer context. This suggests that an optimal online interaction that occurs in the presence of Allport's facilitating conditions could lead to increasing individuals' self-disclosure intentions even in face-to-face contact. The only study that to date has investigated self-disclosure in online intergroup contact is the one by Bagci and colleagues (2021). They found that participants in the higher self-disclosure condition displayed more positive attitudes toward the outgroup than in the lower self-disclosure condition and the control condition and both lower and higher self-disclosure conditions improved approach tendencies compared to the control condition. However, no study has yet investigated whether Allport's conditions play a role in facilitating the effects of online contact on self-disclosure.

As emerges from the systematic literature review presented in the previous chapter, the meta-analysis by White and colleagues (2020), and the meta-analysis by Imperato and colleagues (2021a), no study so far has experimentally investigated whether Allport's (1954) conditions are still effective when intergroup contact interventions are implemented online. In particular, no study has compared an experimental condition in which the optimal conditions were present with one in which they were absent. Furthermore, no study has made this comparison between a majority and a minority social group. Intending to fill this gap in the literature, the study presented in this chapter had two aims: (a) investigate whether Allport's conditions still prove to be facilitating the effects of intergroup contact on the reduction of prejudice when an intervention takes place online, (b) investigate these effects in a majority and a minority social group.

Since no study in the literature has investigated the point of view of sexual minorities in online contact, it was chosen to investigate intergroup contact between people with different sexual orientations. To keep the number of experimental conditions limited, we included all participants of the same gender. Since previous research has shown that men exhibit a greater level of prejudice towards people with different sexual orientations than women, it was decided to include only male

participants in the sample (Herek & McLemore, 2013). To achieve these aims, it was decided to create a structured online contact situation inspired by the E-contact paradigm developed by White and colleagues (2020). That is, the study participants were asked to participate in an online chat in which they would interact with another participant and with a moderator who would guide the interaction. In reality, both the other participant and the moderator were pre-programmed by the researchers, in line with the modality introduced by White and colleagues (2020) in their pre-programmed E-contact protocol. This choice allows us to maintain strong control over the experimental manipulation. Furthermore, it allowed the duration of the interaction to be controlled to ensure that the duration of contact did not influence the effects of the manipulation. In line with the study by Boccanfuso and colleagues (2020), which inspired the paradigm adopted in the present study, the research was presented to the participants as being composed of two different studies: the first (the chat interaction) concerning the topic of work-life balance in Italy, and the second (a questionnaire) concerning some social relationships in Italy. This choice was made to avoid that the participants understood that the study aimed to investigate the effects of their chat interaction on their prejudices and, therefore, to limit the effect of social desirability on participants' responses.

As dependent variables, in addition to intergroup attitudes, it was decided also to investigate intergroup anxiety, intergroup empathy, and self-disclosure.

We expected that participants who interacted with Allport's conditions *activated* would perceive them more strongly than those who interacted with Allport's conditions *not activated* and the control. Instead, we did not expect significant differences in the perception of the conditions between those who interacted with the conditions *not activated* and the control.

Based on the evidence on face-to-face intergroup contact that emerges from the meta-analysis of Tropp and Pettigrew (2006) and on the evidence on online contact that emerges from the meta-analysis of Imperato and colleagues (2021a) that cooperation played a facilitating role in the effects of contact on prejudice, we hypothesized that online contact with Allport's conditions *activated* could

have more positive effects on intergroup attitudes, intergroup anxiety, self-disclosure and intergroup empathy than contact with Allport's conditions *not activated* and the control (H1).

Finally, based on the notion that the Internet may represent a more protective psychological environment compared to the face-to-face one (Amichai-Hamburger et al., 2015), that this could create for the participants a situation in which they could have a high degree of control over how they relate themselves to the other group (White et al., 2020), and in line with Imperato and colleagues' (2021a) who found no differences between the studies which involved only majority social group participants and studies in which the participants belonged to both minority and majority social groups, we hypothesized that online contact with Allport's conditions *activated* could have more positive effects on intergroup attitudes, intergroup anxiety, self-disclosure and intergroup empathy than contact with Allport's conditions *not activated* and the control for both the majority and the minority groups (H2).

Method

Participants

One hundred and seventy-five participants took part in the study. Of these, eight were excluded from the analyses because they realized that the contact was pre-programmed, 15 failed the attention checks, two identified themselves as female, and one did not complete the dependent variables section of the study. The final sample was composed of 149 male participants. The mean age of the sample was 32.7 years ($SD = 13.6$), ranging from 18 to 73 years. Regarding nationality, 147 participants were Italian, one was Romanian, and one was Moldovan. They all lived in Italy and spoke the Italian language. One hundred twenty-five participants identified as heterosexual (majority sexual orientation), while the remaining identified with a minority sexual orientation (6 bisexual and 18 homosexual). Importantly, homosexuals and bisexuals may perceive themselves as belonging to different sexual minority groups based on the attraction toward people of the same gender only vs. the attraction toward both men and women. However, since they are both likely to feel belonging to

a common group that is still highly stigmatized by the majority group because of sexual orientation (Herek & McLemore, 2013), we decided to include both homosexuals and bisexuals in the same subsample. As regards educational qualifications, 7 participants had a middle school diploma, 4 participants had a professional institute diploma, 71 had a high school diploma, 33 had a bachelor's degree, and 29 had a master's degree. Regarding employment, 20 declared to be students, 97 workers, 11 were both students and workers, two were unemployed, three were retired, and 16 did not provide this information.

Procedure

The protocol of this study was evaluated and approved by the Ethics Committee of the Department of Human Sciences of the University of Verona (internal code: cod.2021_16).

The recruitment of participants took place mainly online: the researchers proposed the research through groups/forums on social media. The research was presented to participants as split into two different studies. Participants were told that the first study involved a short survey and the participation in a chat where they had to discuss work-life balance with another participant, to find and propose solutions to improve the balance in the Italian context. The second study was then presented as a survey where they had to complete a questionnaire on social relationships. If persons agreed to participate, they were asked for an email contact. Each participant was sent an email with a link to choose a date and time for their participation in the study. This procedure enhanced the likelihood that participants perceived to be chatting with two real individuals (the moderator and the partner) and not with a pre-programmed script. The text of this first email was as follows:

“Dear participant, thank you for agreeing to participate in the research! You will be asked to take part in two different studies. The first consists of completing a short initial questionnaire and participating in a short chat in which you will interact with a researcher and another participant to provide your opinion on the topic of work-life balance. The second consists of completing another questionnaire concerning factors that can lead people from different social groups to experience more

positive relations. IT IS IMPORTANT THAT YOU ARE CONNECTED FROM YOUR COMPUTER (not from a smartphone or tablet). The total participation time will amount to approximately 20 minutes. Any information that could identify participants will be removed to guarantee their anonymity. Additionally, the email address provided will be deleted at the end of the search. You will not be asked for any data that will allow you to identify it. We kindly ask you to click on the following link to select a day and time when you want to connect to be able to be paired with another participant to chat with: Link. You will receive an email confirming the appointment and the link to connect to the chat. Thank you for your precious collaboration! Best regards, The research team”. After choosing the time slot for the chat interaction, participants received a confirmation email with the link to connect. The text of this second email was as follows:

“Dear participant, we confirm the appointment on “Day of the week, day number/month/year”. Here is the link to participate in the research: Link. You will be able to connect 5 minutes before the scheduled time of the confirmed appointment. IT IS IMPORTANT THAT YOU ARE CONNECTED FROM YOUR COMPUTER (not from a smartphone or tablet). You can cancel and make a new appointment by clicking on the following link: Link. Thank you for your precious collaboration! Best regards, The research team”.

Once participants clicked on the link, the first page of the study displayed the informed consent. Only those who agreed to participate and consented to the use of data collected through their participation then continued with the subsequent sections of the study. In the consent form, it was clearly explained that each participant could stop participating at any time without providing any explanation and obtaining the non-use of the data provided. However, none of these cases occurred and all participants completed the study to the end. After the informed consent, participants completed a demographics section, which asked for their age, nationality, gender, and sexual orientation. Since the intergroup relation investigated was based on sexual orientation, this last question was used to match participants in the chat with a pre-programmed participant with a different sexual orientation.

Afterwards, the participants completed some filler questions, to strengthen the cover story of the study focused on the theme of work-life balance. They were asked if they were married, the number of sons, their main occupation, hours of work per week, their hobby, and hours dedicated to it. Responses to these items were not analysed. After this section, participants entered the chat and were randomly assigned to one of three experimental conditions: (a) Allport's conditions *activated*, (b) Allport's conditions *not activated*, and (c) control (see below). Subsequently, participants filled out attention checks and manipulation checks. Finally, they moved on to what was presented to them as the second study of the research, namely the assessment of the dependent variables through a questionnaire. Before concluding, they had the opportunity to complete a box in which to report to the researchers anything they wanted in relation to the study they had just carried out. Once data collection was concluded, participants received complete information about the aims and method of the study and had the opportunity to request the non-use of the data provided, considering the complete information they had received. No participant took advantage of this possibility.

Materials and measures

Software for the data collection. To collect the data, ad hoc software was created. This is a cloud software, created in 2021, provided in ASP (Application Service Provisioning) mode. The registered domain name is socialsurveys.it. The programs, both user and management (back office) were written using the following languages: HTML (HyperText Markup Language), JavaScript, CSS (Cascading Style Sheets), SQL (Structured Query Language), VBScript (Microsoft's Visual Basic Scripting Edition) and have been tested to work on the following web browsers: Google Chrome, Firefox, Microsoft Internet Explorer, Microsoft Edge, and Safari. The utilized database is MySQL. To facilitate the transfer of data into specific analysis software, a data extraction program in Microsoft Excel format has been set up. Information security was guaranteed by an encrypted connection via TLS (Transport Layer Security). The server is hosted in a data center with the following certifications: ISO 9001 quality, ISO 27001 security, ISO 14001 environmental management, and ISO 50001 energy

management system and has ISO cloud security controls declarations of conformity /IEC 27017, for cloud personal data management ISO/IEC 2018 and security incident and event management ISO/IEC 27035. A triple daily data backup was carried out, one on the same server for quick restores and two on external servers to ensure security during disaster recovery.

The software was programmed to randomly allocate participants in three different chats, one for each of the three experimental conditions. The presence and absence of Allport's conditions in the intergroup interaction were manipulated through the tasks that the moderator asked the participants to carry out.

Cooperation. This condition was manipulated by asking the two participants to work together on the same solution, asking one to modify and approve the other's proposals and vice versa (“What is asked you is to cooperate to identify together 2 possible solutions relating to the topic of this research. We believe it is very important that the solutions you propose are discussed together and shared with a common goal. So, I will ask one of you to write a solution and then the other to leave it as is or add something”). The *absence of cooperation* was manipulated by having participants propose their solutions individually, without being asked to intervene in the other's proposal (“What you are asked to do is to identify and individually list 1 solution relating to the topic of this research. We believe it is very important that the solutions you propose are thought of by each participant separately and have different objectives. Then, I will ask one of you and then the other to write one solution at a time”).

Common goals. The presence of common goals was manipulated by asking participants to work together on the solution to the same problem (“[Participant], why don't you start and propose a solution with the AIM OF IMPROVING WORK-LIFE BALANCE?” and “Thank you! [Pre-programmed participant], can you propose a solution with the same AIM OF IMPROVING WORK-LIFE BALANCE?”), while the *absence of common goals* was manipulated by having the two participants work on different goals (“[Participant], why don't you start and propose 1 solution with

the AIM OF IMPROVING WORK MANAGEMENT?” and “Thank you [Participant], [Pre-programmed participant], can you propose 1 solution with the AIM OF IMPROVING LEISURE TIME MANAGEMENT?”).

Equality of status. This condition was manipulated stating that the proposals from all the participants would have been ordered in the final analysis following the criterion that the most recurring solutions would be given greater importance (“Before concluding, I must inform you that, due to the large number of participants in the study, it will be necessary to order the solutions by importance in the analyses. For this reason, the most recurring solutions will be given greater importance”). In the *different status* condition one of the two participants was entitled to choose which of the proposals to consider in the final analyses. To be consistent with the asymmetry present between majority and minority in society, the participant from the majority group was asked to decide which solution to send for analysis (“Before concluding, I must inform you that, due to the large number of participants in the study, it will be necessary to order the solutions by importance in the analyses. For this reason, I will ask one of you to choose which proposal you consider most important. [Participant], can you write in a message which solution you consider most important?”).

Support from the authority. This condition was manipulated through a statement taken from the statute of the University of Verona posted by the moderator at the beginning of the chat, together with the display of the university logo at the top right of the screen during the chat interaction (statement: “This study is organized by the University of Verona, in line with its principles, in particular Art. 1, Paragraph 3 of the statute, according to which the University promotes a culture of peace, respect for human rights and the dignity of the person human nature, pluralism of ideas and valorisation of differences, guarantees equal opportunities in work and study, protects full freedom of thought and expression and rejects ideas of violence, discrimination and intolerance”). The *absence of authority support* was manipulated by replacing the initial statement with a generic one regarding the study's cover story and with the absence of the University of Verona logo on the screen during

the interaction (“This study is organized by the University of Verona and will concern the topic of work-life balance, in line with Art. 10, Paragraph 1 of the statute. The aim of the study is to promote the quality of working and studying life, paying attention to working and studying conditions, with particular reference to well-being in carrying out activities; to the conciliation of work and lifetimes and the promotion of cultural, sporting, and recreational free time activities”).

Control condition. The moderator informed the participant that the person paired with him in the chat had not been able to connect, and he was, therefore, asked to complete the various tasks alone and to answer the moderator's questions.

Once the chat was concluded, the participants completed a check of the experimental manipulations and subsequently completed a questionnaire to assess the dependent variables.

Manipulation checks. An item ad hoc was used for each of the four Allport's conditions to verify that the participants had perceived them when they were activated. To assess *cooperation*, we asked: “Did you work collaboratively with the other participant to propose solutions?”, for the *common goals*: “Were you given tasks that had different aims?” (reverse coded), for the *equality of status*: “Did you and the other participant in the chat have the same importance in deciding the proposal that was ultimately sent?”, and for the *authority support*: “Is the University of Verona interested in supporting the diversity and pluralism of ideas?”. Response options ranged from 1 (*completely disagree*) to 9 (*completely agree*).

Intergroup anxiety. This measure consisted of 10 items adapted from Stephan and Stephan (1985). We asked participants: “First, we ask you to imagine yourself in the following scene: you are in a social situation such as a dinner or a work project and you start talking about sexual orientation. All the other participants express a different sexual orientation from yours, defining themselves as homosexual/gay-bisexual. How would you feel? I would feel... (1) At ease, (2) Uncertain, (3) Safe, (4) Uncomfortable, (5) Worried, (6) Threatened, (7) Anxious, (8) Nervous, (9) Confident, (10)

Friendly”. Response options ranged from 1 (*none*) to 7 (*very much*). The scores were combined into a single index of intergroup anxiety, with higher scores indicating higher anxiety ($\alpha = .89$).

Self-disclosure. This measure consisted of 4 items adapted from Turner and colleagues (2007). We asked participants “Now we ask you to imagine that you are talking to a heterosexual/gay-bisexual man who you happen to meet. In this situation... (1) Would you talk about your personal problem with this person? (2) Would you tell this person an exciting secret? (3) Would you tell this person your idea on a topic that is very important to you? (4) Would you reveal personal or intimate information to this person?”. Response options ranged from 1 (*none*) to 7 (*very much*). The scores were combined into a single index of self-disclosure, with higher scores indicating higher self-disclosure ($\alpha = .94$).

Intergroup empathy. This measure consisted of 4 items adapted from Capozza and colleagues (2013). We asked participants: “Now we ask you to think about heterosexuals/gay-bisexual men, not one in particular, but their social group more generally. When you think about gay/bisexual men, to what extent... (1) Do you feel in tune with them? (2) Do you feel you share their emotions? (3) Do you understand their feelings? (4) Do you share their joys and sorrows?”. Response options ranged from 1 (*none*) to 7 (*very much*). The scores were combined into a single index of intergroup empathy, with higher scores indicating higher empathy ($\alpha = .87$).

Intergroup attitudes. This measure consisted of 5 items adapted from Wright and colleagues (1997). We asked participants: “Now we ask you to think about heterosexual/gay/bisexual men in general. Next, you will find a series of pairs of adjectives; for each one, we ask you to indicate the alternative that best represents your general impressions. (1) Negatives – Positive, (2) Cold – Warm, (3) Suspicious – Reliable, (4) Hostile – Friendly, (5) Contemptible – Worthy of respect”. Bipolar response options ranged from 1 to 7. The scores were combined into a single index of intergroup attitudes, with higher scores indicating more positive intergroup attitudes ($\alpha = .85$).

Analytical approach

Analyses were conducted using Jamovi. As a preliminary analysis, we conducted a check of the experimental manipulation, performing a one-way ANOVA to test the univariate effect of the four Allport's conditions to verify if there were significant differences between the three experimental conditions in the perception of the cooperation, common goals, equality of status, and authority support. As the main analysis, we performed a MANOVA to verify if there were significant differences between the three experimental groups in the mean scores of the investigated variables (intergroup anxiety, self-disclosure, intergroup empathy, and intergroup attitudes). Unfortunately, the size of the minority subsample was not sufficient to be compared to the majority subsample in the same model. Therefore, we chose to carry out the main analyses first on the majority group, and then we repeated the analyses adding the minority participants to the sample, to check whether adding this subsample to the analyses would alter the results.

Results

Manipulation checks

The one-way ANOVA resulted in significant differences between the three experimental groups for each of the four Allport's conditions: cooperation, $F(2,117) = 28.52, p < .001$, common goals, $F(2,117) = 4.12, p = .02$, equal status, $F(2,114) = 26.41, p < .001$, and authority support $F(2,116) = 6.05, p = .003$. The means and standard deviations for each experimental group are presented in Table 3.

Table 3

Means, standard deviations, and sub-sample sizes for each experimental group (majority sample)

	Conditions <i>activated</i> <i>n</i> = 45 <i>M</i> (<i>SD</i>)	Conditions <i>non activated</i> <i>n</i> = 44 <i>M</i> (<i>SD</i>)	Control <i>n</i> = 32 <i>M</i> (<i>SD</i>)
Cooperation	7.62 (1.80)	4.27 (2.73)	3.74 (3.07)
Common goals	6.76 (3.06)	4.84 (3.27)	6.22 (3.13)
Equal status	7.95 (1.72)	4.37 (3.22)	4.00 (3.04)
Authority support	8.00 (1.41)	6.98 (2.03)	6.48 (2.45)

Mean differences between the three experimental groups for the four Allport's conditions and *t*-tests are displayed in Table 4. As expected, post-hoc tests revealed that *cooperation*, *equality of status*, and *authority support* were perceived more by participants with Allport's conditions *activated* compared to participants with Allport's conditions *not activated* and to the control group. The difference between the group with these conditions *not activated* and the control group was not significant. The only inconsistent pattern emerged in the case of *common goals*, which was perceived more by participants with Allport's conditions *activated* compared to participants with Allport's conditions *not activated*, while the difference between the group with common goals *activated* and the control group was not significant, as well as the difference between the participants with Allport's conditions *not activated* compared to the control group.

Table 4

Mean differences between the three experimental groups for the four Allport's conditions and t-tests (majority sample).

	Cooperation			Common Goals			Equal status			Authority support		
	Mean difference	<i>t</i>	df	Mean difference	<i>t</i>	df	Mean difference	<i>t</i>	df	Mean difference	<i>t</i>	df
(1-2)	3.35***	6.26	117	1.92*	2.80	117	3.58***	6.18	114	1.02*	2.46	116
(1-3)	3.88***	6.59	117	.54	0.72	117	3.96***	6.18	114	1.52**	3.31	116
(2-3)	0.53	0.90	117	-1.38	1.85	117	0.37	0.58	114	0.49	1.08	116

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Response scale: 1-9. Conditions' coding: 1 = Allport's conditions activated; 2 = Allport's conditions not activated; 3 = control group.

When re-tested after the inclusion of the minority participants in the sample, the one-way ANOVA resulted in significant differences between the three experimental groups for each of the four Allport's conditions: cooperation, $F(2,140) = 34.45$, $p < .001$, common goals, $F(2,140) = 5.71$, $p = .004$, equal status, $F(2,137) = 36.46$, $p < .001$, and authority support $F(2,140) = 7.35$, $p < .001$. The means and standard deviations for each experimental group are presented in Table 5.

Table 5

Means, standard deviations, and sub-sample sizes for each experimental group (total sample)

	Conditions <i>activated</i> <i>n</i> = 55 <i>M</i> (<i>SD</i>)	Conditions <i>non activated</i> <i>n</i> = 51 <i>M</i> (<i>SD</i>)	Control <i>n</i> = 43 <i>M</i> (<i>SD</i>)
Cooperation	7.58 (1.67)	4.24 (2.73)	3.78 (3.09)
Common goals	6.85 (3.06)	4.82 (3.27)	6.32 (3.13)
Equal status	8.02 (1.62)	4.24 (3.10)	4.00 (3.07)
Authority support	8.04 (1.36)	6.88 (2.21)	6.61 (2.28)

Mean differences between the three experimental groups for the four Allport's conditions and *t*-tests are displayed in Table 6. As expected, post-hoc tests revealed that *cooperation*, *equality of status*, and *authority support* were perceived more by participants with Allport's conditions *activated* compared to participants with Allport's conditions *not activated* and to the control group. The difference between the group with these conditions *not activated* and the control group was not significant. The only inconsistent pattern emerged in the case of *common goals*, which was perceived more by participants with Allport's conditions *activated* compared to participants with Allport's conditions *not activated*, while the difference between the group with common goals *activated* and the control group was not significant, as well as the difference between the participants with Allport's conditions *not activated* compared to the control group.

Table 6

Mean differences between the three experimental groups for the four Allport's conditions and t-tests (total sample)

	Cooperation			Common Goals			Equal status			Authority support		
	Mean difference	<i>t</i>	df	Mean difference	<i>t</i>	df	Mean difference	<i>t</i>	df	Mean difference	<i>t</i>	df
(1-2)	3.35***	6.91	140	2.03**	3.30	140	3.78***	7.35	137	1.15**	3.03	140
(1-3)	3.79***	7.17	140	.54	0.81	140	4.02***	7.13	137	1.43**	3.46	140
(2-3)	0.45	0.84	140	-1.50	2.20	140	0.24	0.41	137	0.28	0.66	140

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Response scale: 1-9.

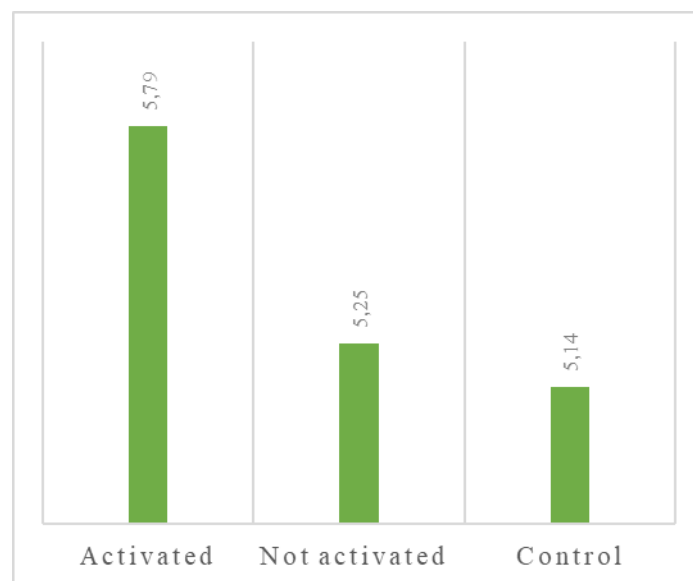
Main analysis

First, the main analyses were carried out on the subsample composed of the majority social group (heterosexuals). The multivariate test showed no significant effect of the experimental manipulation on the dependent variables, $F(8, 214) = 1.63$, $p = .117$. However, when univariate effects were tested, a significant effect of experimental conditions emerged on intergroup attitudes $F(2, 117) = 4.63$, $p = .012$, while no significant differences emerged for intergroup anxiety ($p = .60$),

self-disclosure ($p = .29$), and intergroup empathy ($p = .07$). Post-hoc analysis revealed that participants who interacted with the Allport's conditions *activated* reported more favourable intergroup attitudes compared to participants who interacted with Allport's conditions *not activated*, $t(2, 117) = 2.38, p = .049$, and to the control group, $t(2, 117) = 2.76, p = .02$. The difference between participants who interacted with Allport's conditions *not activated* and the control group is not significant ($p = .88$). Different levels of intergroup attitudes for the three different experimental conditions are reported in Figure 4.

Figure 4

Different levels of intergroup attitudes reported by the majority participants in the three different experimental conditions



When the minority subsample was included, consistently with the analyses carried out on the majority subsample, the multivariate test showed no significant effect of the experimental manipulation on the dependent variables, $F(8, 260) = 0.89, p = .06$. In this case, when univariate effects were tested, a significant effect of experimental conditions emerged on intergroup attitudes, $F(2, 141) = 4.70, p = .01$, and intergroup empathy, $F(2, 145) = 3.44, p = .04$, while no significant differences emerged for intergroup anxiety ($p = .99$) and self-disclosure ($p = .46$). Post-hoc analysis

revealed that participants who interacted with Allport's conditions *activated* reported more favourable intergroup attitudes, $t(2, 141) = 2.82, p = .02$, and more intergroup empathy, $t(2, 145) = 2.41, p = .04$, compared to participants in the control group. The difference between participants who interacted with Allport's conditions *not activated* and the control group is not significant for both intergroup attitudes ($p = .84$) and intergroup empathy ($p = .89$). The difference between participants who interacted with Allport's conditions *activated* and participants who interacted with Allport's conditions *not activated* is not significant for both intergroup attitudes ($p = .053$) and intergroup empathy ($p = .11$). Different levels of intergroup attitudes and intergroup empathy for the three different experimental conditions are reported in Figure 5 and Figure 6.

Figure 5

Different levels of intergroup attitudes reported by the total sample in the three different experimental conditions

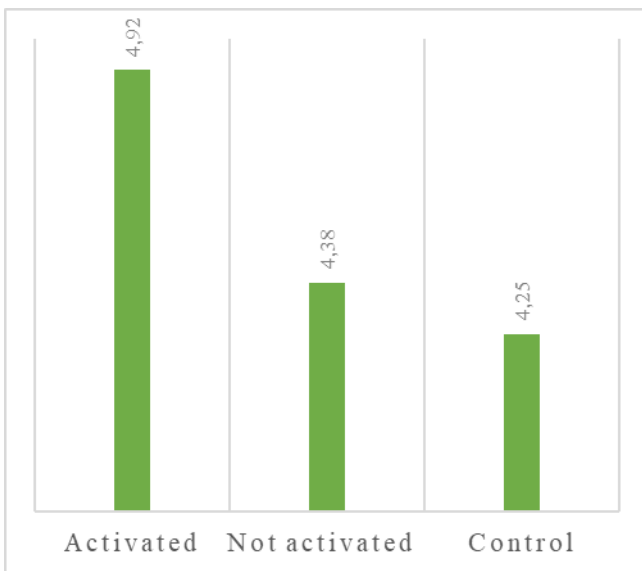
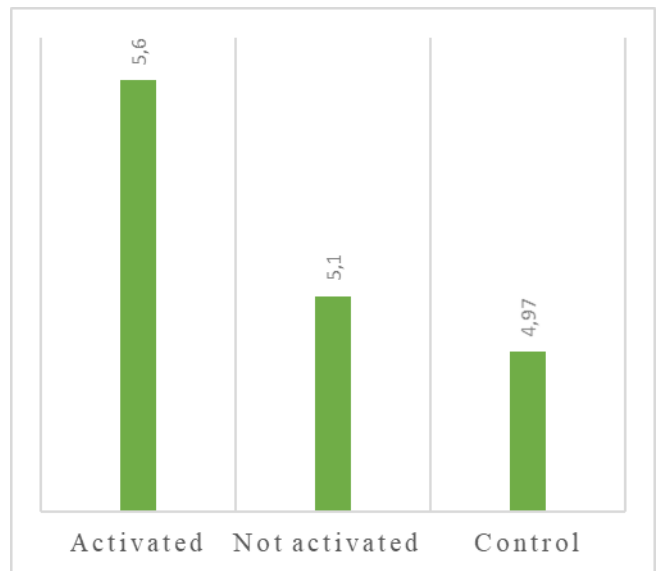


Figure 6

Different levels of intergroup empathy reported by the total sample in the three different experimental conditions



Discussion

The present study aimed to investigate the effectiveness of the optimal conditions for intergroup contact proposed by Allport (1954) in facilitating the effects of a structured online intergroup contact intervention on improving intergroup relations, for majority and minority social

groups. Study participants, heterosexual (majority) or gay/bisexual (minority) men, participated in a pre-programmed chat in which they interacted with a person with the opposite sexual orientation, guided by a moderator. The interaction could occur with Allport's conditions *activated* or with Allport's conditions *not activated*. Additionally, there was a control group in which participants completed a task independently. The manipulation of the experimental conditions was satisfactory. A significant difference was expected between the group with Allport's conditions *activated* and the one with Allport's conditions *not activated* and between the group with Allport's conditions *activated* and the control, while no significant differences were expected between the group with Allport's conditions *not activated* and the control. The fact that no significant difference emerges in the perception of common goals between the group with Allport's conditions *activated* and the control can be explained by the reason that the participants in the control performed the task alone, and therefore they response to the manipulation check could have been less accurate, or they might have answered the question by reporting what they thought to be the "right" answer if they had participated in the chat with another participant.

The first hypothesis of the study was that online contact with Allport's conditions *activated* could have more positive effects on intergroup attitudes, intergroup anxiety, self-disclosure, and intergroup empathy than contact with Allport's conditions *not activated* and the control (H1). Our results showed that for the majority participants, when the interaction occurred with Allport's conditions *activated*, participants reported significantly more favourable attitudes towards the outgroup compared to participants who interacted with Allport's conditions *not activated* or to the control, while the difference between participants who interacted with Allport's conditions *not activated* and the control group was not significant. However, no other significant differences emerged for the other dependent variables: intergroup anxiety, self-disclosure, and intergroup empathy. Thus, H1 was only partially confirmed. For the majority group, the findings about intergroup attitudes seem consistent with what emerges from research on face-to-face contact,

whereby the conditions are facilitating the contact to be effective (Tropp & Pettigrew, 2006), and with the results of the meta-analysis by Imperato and colleagues (2021a) and their first evidence about the facilitating role played by cooperation (Imperato et al., 2021a). However, the results are not directly comparable, because we were not able to test the effect of the conditions individually, so we could not understand whether one of the conditions had more effect than another and what condition might have been. Furthermore, in our study, this effect seems to be very weak, as it does not extend to the other dependent variables, namely intergroup anxiety, self-disclosure, and intergroup empathy, also in contrast with the literature on online contact (White et al., 2020), in which it emerges instead that text-based online contact had a positive effect on the reduction of intergroup anxiety. The positive effects on attitude can be explained by the fact that even a very short and structured interaction is sufficient for the conditions to function as facilitators in the effects on this variable. Therefore, it may be that this brief positive interaction (even if not very spontaneous) is enough for the conditions to work. However, the other variables investigated can activate different processes. For example, intergroup anxiety is activated when a person anticipates worrying about interacting with a member of an outgroup. In this case, in this structured interaction, the participant may have felt a certain level of anxiety due to the fact of having to carry out a structured task in which he had to answer pre-established questions and had to do so through interaction with a member of the outgroup. Consequently, the manipulation developed may not have truly met the indications proposed by Amichai-Hamburger and colleagues (2015), that is, that online interaction can level anxiety by allowing participants to control the interaction (in our case, for example, once the message was sent it was taken into consideration without being able to be revised by the participants). Furthermore, the contact was synchronous, so it did not allow participants to let much time pass before sending their responses. It is important to note that although the participants connected from home, it was still an experimental situation in which they probably felt they had to meet certain expectations. The combination of all these considerations may have meant that having structured the contact based on Allport's conditions was not sufficient to bring about differences in the levels of anxiety subsequently

reported by the participants. Also regarding self-disclosure, no significant differences emerged between the different experimental conditions in which the participants took part. This lack of difference can be explained by the brevity of the interaction and its structured characteristics. The exchange of information that the participants carried out in the chat was short (less than 10 minutes) and very structured (they answered the moderator's very specific questions). Consequently, to maintain further control over the experimental conditions, participants were not given the opportunity to share information spontaneously, thus missing what Pettigrew (1998) proposed as another condition of extreme importance for the effects of contact, namely the potential for friendship to be created. The author maintained that in addition to the four conditions proposed by Allport for the contact to have positive effects on intergroup relations, it was essential that the participants had the time to exchange a series of information that was useful for getting to know each other well and develop a more intimate relationship, and therefore create the potential to develop a friendship relationship. In the case of our manipulation, this potential was absent. This lack can explain the total absence of effects of manipulation on self-disclosure, which is precisely the predisposition to share important and personal information with a member of the outgroup. This can give us an important indication to integrate in future studies and also the possibility for participants to get to know each other better, thus activating the potential of friendship identified by Pettigrew (1998) as fundamental.

The second hypothesis of the study was that online contact with Allport's conditions activated could have more positive effects on intergroup attitudes, intergroup anxiety, self-disclosure, and intergroup empathy than contact with Allport's conditions not activated and the control for both the majority and the minority groups (H2). Also, H2 was only partially confirmed. The results about intergroup attitudes, intergroup anxiety, and self-disclosure commented so far remain constant between the analyses carried out only with the majority group and those carried out by adding the minority sub-sample. An interesting divergence emerges, however, for the last variable taken into consideration, i.e., intergroup empathy. This variable was included in the study for exploratory

purposes since studies on online contact have not particularly investigated it. Surprisingly, our results demonstrated that once the minority sub-sample was added to the analyses, the difference between the contact with Allport's conditions activated and the control became significant. Those who interacted with the Allport's conditions activated reported higher levels of intergroup empathy than those who did not interact (control group), while the difference between those who interacted with the Allport's conditions not activated and in control was not significant. Thus, the effects of contact on intergroup empathy, when the sample also included the minority, proved to be present only when Allport's conditions were activated.

Unfortunately, having carried out the analyses by combining the two groups, the conclusions that can be drawn from these results must be discussed with extreme caution and cannot give us truly clear and definitive indications of the role played by Allport's conditions for this variable and the minority social group. The first limitation of this study is that the size of the minority subsample was too small, not allowing a comparison between the two experimental groups in the same model. This limitation is due to the difficulty encountered in recruiting participants from the minority social group. Despite this disparity, it was still considered very important to include the analyses and results for the minority subsample in the report to make a first comparison between the two groups. Indeed, our results may represent a tentative indication that implementing Allport's conditions in structured online contexts may also become important for minorities, whereas offline has not been useful enough to improve the effects of contact on intergroup relations for these social groups.

Interestingly, there were no significant differences in the effects of contact on the dependent variables between the group that interacted with the Allport conditions *not activated* and the control group. This result is not in line with the classic literature on face-to-face intergroup contact that proves that Allport's conditions enhance the effects of contact on prejudice, although these effects are still present even with the conditions not explicitly manipulated (Pettigrew & Tropp, 2006). Furthermore, even in the literature on online intergroup contact, where Allport's conditions have not always been

activated, effects of contact on intergroup outcomes have been found (Imperato et al., 2021a). A possible explanation for this divergence in results may be how we structured the interaction in our experiment. It may be that in the condition with Allport's conditions *not activated*, the participants, not having carried out a task by collaborating towards a common goal, perceived to be interacting in a situation more detached and distanced from the interaction partner, thus more similar to the control situation, and were much less involved in the contact. This perception may have resulted in a lack of difference in the dependent variables between this condition and the control condition.

Another important limitation of the study is that it proved very complex to develop the manipulation of Allport's conditions in a pre-programmed interaction while maintaining all the other features of the interaction unchanged. This limitation may help explain the lack of significant results. The creation of a climate of mutual collaboration and shared goals, simultaneously with the standardization of pre-programmed responses to maintain high control of the interaction, meant that the exchanges had to be very short, giving participants little opportunity for personal expression. This may have meant that the participants probably did not feel particularly involved in the interaction. Given that participants interacted in a highly structured and standardized context, they were not able to choose the channel and communication methods, just as they were not able to choose the topic to discuss. However, this method entails the limitation of investigating a type of interaction that is very distant from what happens in the daily lives of individuals. One of the characteristics mentioned by Amichai-Hamburger and colleagues (2015) in relation to online contact is precisely that of giving individuals the possibility of finding similar people with whom to share topics of interest and passions, through the channels that are considered most pleasant and entertaining by the individuals themselves. For this reason, it was decided to shift the focus of the latest study to the interactions that take place on social media, which characterize most daily interactions for individuals.

Chapter 4. Online intergroup contact: Allport's conditions on social media

In the previous chapter, Allport's conditions were investigated in online intergroup contact that occurs in a structured environment, within a pre-programmed chat. However, most intergroup contact occurs in unstructured environments, where interactions are spontaneous and not regulated by a moderator. Social media represent a particular environment of spontaneous interaction. A set of evidence from correlational studies is starting to show the potential of online contact in its most spontaneous form through social media platforms to reduce prejudice. Focusing on ethnic relations, Imperato and colleagues (2021b) found that the quantity of online intergroup contact with people from different countries (in terms of the number of Facebook friends) was positively associated with online community commitment, which in turn was positively associated with participants' perception of both mediated and vicarious discrimination and with anti-racist behaviour. Another study by Žeželj and colleagues (2017) showed that students from Croatia, Cyprus, and Serbia with more Facebook friends belonging to the outgroup also displayed more positive outgroup attitudes through reduced intergroup anxiety and perceived ethnic threat. Also, Schwab and colleagues (2019) found a positive correlation between the amount of virtual contact and attitudes toward the outgroup between Iranians and Israelis. It is important to note that although social media is a context of spontaneous and unstructured interaction, it still represents a context with a specific structure and characteristics. Their structured component is highlighted in the fact that there are rules of conduct to be respected established by the various social media and rules of behaviour that must be accepted, which sanction individuals who do not respect them through the removal of contents or the suspension of accounts. On the other hand, they can be considered unstructured because individuals are not required to carry out any activities within them. They can decide to take on the role of passive readers/spectators of the contents presented or to actively interact in response to the contents proposed by others, as well as develop and propose new contents and ways of presenting them in turn. Furthermore, everyone actively "builds" their feed based on the content they choose to expose themselves to. Because of this ambivalent characteristic of social media, which represents both a structured and unstructured

environment, it was considered important to investigate how Allport's conditions influence the association between online contact and prejudice in these interaction environments. Another extremely important feature of social media is that it gives space and voice to diversity. As a result, people from different social groups meet frequently through these channels, becoming exposed to each other's content with an intensity exponentially greater than what happens in offline interactions. An example of this can be found in the media coverage that social and emancipation campaigns carried out by different ethnic, religious, and political minorities in different parts of the world receive. This information greatly impacts the deconstruction of many prejudices in different fields and the general awareness of this phenomenon, which was previously mainly faced in academic reflections rather than in public discourse. Considering these characteristics, social media represents a place of excellence where majority and minority social groups can meet. For this reason, we decided to investigate the role of conditions in this interaction context for both a majority and a minority social group.

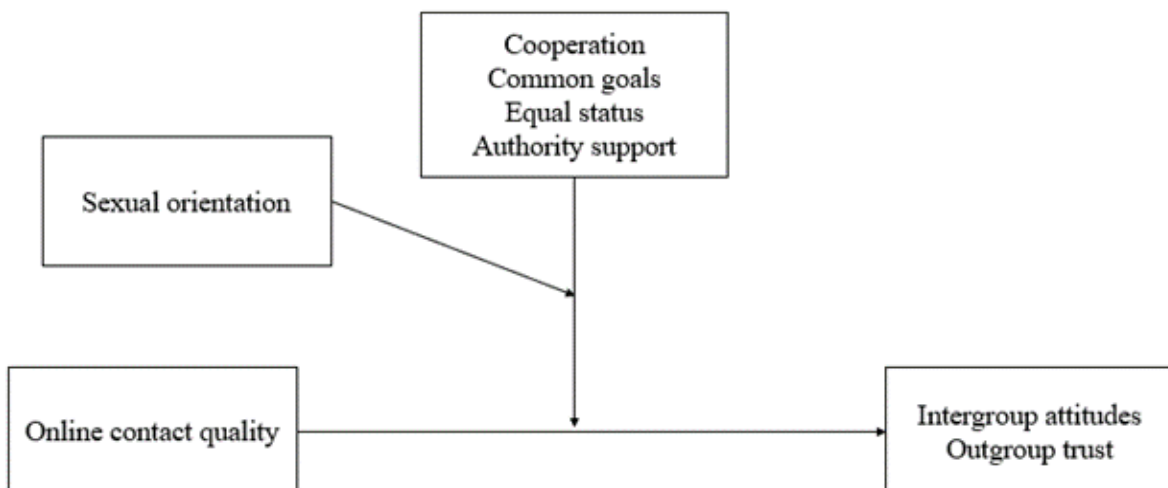
The present study is twofold. Firstly, we aimed to test the moderation role played by the conditions for optimal intergroup contact (Allport, 1954) – namely the equality of status during the interaction situation, cooperation and common/shared goals between groups, and support from the authority, low, and costumes – in the associations between online contact on social media and outgroup trust (Tropp, 2008) and attitudes towards the outgroup (Pettigrew & Tropp, 2006). While attitudes have been extensively tested as a key intergroup outcome in the contact literature among social majority groups, outgroup trust is viewed as extremely relevant among social minority groups (Tropp, 2008). Thus, it deserves further investigation, not as thoroughly explored.

Secondly, we aimed to test whether the investigated associations and the moderation by Allport's conditions differed for the majority and the minority social groups. As in the study reported in Chapter 3, the intergroup relation under investigation is between people with different sexual orientations, in particular between heterosexual individuals (majority social group) and gay and

lesbian people (minority social group), which the extant research has started to consider concerning the online intergroup contact literature (for a metaanalysis, see Imperato et al., 2021a). While there is some early evidence of the positive effect of direct online contact on the reduction of social distance towards homosexual people among the heterosexual majority (Kim & Wojcieszak, 2018), exposure to LGBT content in online news and on social media on the majority’s attitudes toward the LGBT community (Lissitsa & Kushnirovich, 2020), and of the reduction of prejudice towards sexual minority men and women (White et al., 2019b), the perspective of sexual minorities has been largely ignored. The novelty of this study lies in the fact that it explores and compares the perspectives of both the sexual minority and majority social group participants for the first time, investigating if the moderation role played by Allport’s conditions on the effects of contact is different between the majority and the minority.

Figure 7

Theoretical model. Optimal conditions and group status (heterosexuals: majority status; gay men and lesbian women: minority status) were used as moderating variables



In line with the findings of the meta-analysis by Imperato and colleagues (2021a) that online intergroup contact moderately reduces prejudice, and the findings of the meta-analysis by White and colleagues (2020) that text-based intergroup online contact compared to control, had a significant and large effect on cognitive measures of prejudice, a significant and medium effect on affective measures of prejudice, and a significant and medium effect on behavioral intentions measures of prejudice, we elaborated the following hypothesis: (H1a) online social media intergroup contact is significantly and positively associated with attitudes towards the outgroup, and (H1b) online social media intergroup contact is significantly and positively associated with outgroup trust. Then, based on the finding of Imperato and colleagues (2021a) about Allport's conditions that cooperation played a moderating role, with stronger effects when participants were asked to cooperate compared to studies in which cooperation was not controlled, we elaborated the following hypothesis: (H2a) Allport's optimal conditions (i.e., cooperation, common goals, equal status, and authority support) plays a strengthened role on the positive association between the quality of social media online contact and attitudes towards the outgroup and outgroup trust, and (H2b) out of the four Allport's conditions, cooperation has a stronger interaction effect on attitudes towards the outgroup than the remaining conditions.

Finally, based on the notion that Allport's conditions enhance norms that improve positive expectations about outgroup members' intentions, and that this is especially important for minority group members to overcome their feelings of suspicion and distrust towards majority group members, we elaborated the last hypothesis: (H3a) the relationship between online social media intergroup contact and outgroup trust would be stronger at higher levels of the optimal conditions among the minority (but not the majority) group members, while no specific hypothesis for attitudes towards the outgroup as a dependent variable was formulated. However, we exploratory tested moderation also for this outcome variable.

Method

Participants

Four hundred and four participants initially took part in the study. Fifty-one participants were excluded from the analyses for an excessive percentage of missing data (more than 25%). Then, since it has been decided to include in the sample only heterosexual, gay, or lesbian participants, data from 64 individuals who reported to be bisexual ($n = 47$) or “other” ($n = 17$) have not been retained in the final sample. This decision was made to avoid possible identification differences within the minority group since homosexuals and bisexuals are likely to perceive themselves as members of sexual minorities but also belonging to groups differing on sexual orientation (attraction toward people of the same gender only vs. attraction toward both men and women). The final sample is composed of 289 Italian adults (133 males, 153 females, 3 missing data). The mean age of the final sample is 30.63 years ($SD = 11.54$), ranging from 18 to 67.

Procedure

The Ethics Committee of the Department of Human Science of the University of Verona approved the research protocol (cod. 2021_11). An e-survey was created through the Microsoft Forms platform for data collection, which took place between May and October 2021. The link to the survey was shared via social media (Facebook, Instagram, and WhatsApp), thus adopting a snowball sampling technique. Before completing the survey, participants read a study introduction and gave their consent to participate. Anonymity was guaranteed to all participants throughout data collection and analysis.

Measures

The measures in the study were adapted from previous research. Each scale was subsequently translated into Italian by a native Italian speaker and then back-translated into English by a native English speaker, both of whom were members of the research team.

Online Contact Quality. To assess the quality of online contact on social media, we adapted three items from Capozza et al. (2010). We asked participants to report the quality of their social media contact with homosexual/heterosexual individuals. An example of an item was: "hostile-friendly." Respondents used a scale from 1 to 5 with bipolar response options. The scores were combined to create a single index of online contact quality. Higher scores indicated more positive intergroup contact (Cronbach's alpha $\alpha = .66$ for the minority, $\alpha = .78$ for the majority). Then, we assessed online contact quantity with four items, as a control variable. To this end, we adapted three items from Lissitsa and Kushnirovich (2020), and one additional item was included. These items measured the frequency and number of homosexual/heterosexual people participants interacted with on social media. We created a single index of online contact quantity combining the scores from these four items. Higher scores show more intergroup contact experiences ($\alpha = .70$ for the minority, $\alpha = .79$ for the majority).

Allport's conditions for optimal intergroup contact. We assessed Allport's conditions utilizing a single item for each of the four conditions. The items were adapted from Di Bernardo et al. (2019). We asked participants about their feelings regarding social media contact with homosexual/heterosexual individuals regarding cooperative interactions, common goals, equality of status, and support by social media. Respondents used a scale ranging from 1 (*none*) to 5 (*very much*). We analysed the above-mentioned conditions separately and as a composite score ($\alpha = .74$ for the minority, $\alpha = .78$ for the majority).

Attitudes towards the outgroup. We adapted this scale from Wright et al. (1997). It consisted of five items with a bipolar response scale, from 1 to 5. Participants were asked about their general feelings toward homosexual/heterosexual people. An example of an item was: "negative-positive". We then combined the scores of the five items into an intergroup attitudes composite index. Higher scores showed more positive attitudes towards the outgroup ($\alpha = .88$ for the minority, $\alpha = .89$ for the majority).

Outgroup Trust. We adapted 5 items from Fuochi et al. (2020). Participants were asked to indicate the degree to which they felt various trust-related perceptions when thinking about homosexual/heterosexual people. An example item was: "distrust" (reverse-coded). The response scale ranged from 1 (*none*) to 5 (*very much*). We then combined the scores into an outgroup trust single index. Higher scores indicated higher outgroup trust ($\alpha = .89$ for the minority, $\alpha = .78$ for the majority).

Analytical Approach

Data were analysed using SPSS 28. Initially, a MANOVA was conducted to examine if there were significant differences in mean scores of the variables between minority and majority groups. Following this, Pearson correlations (r) were calculated for the study variables. The correlations for the two subsamples (majority status group and minority status group) were calculated separately. We used the PROCESS macro for SPSS by Hayes (2022, Model 3) to test the hypotheses. We tested one model for each of the four optimal conditions and one model for each of the two dependent variables, for a total of eight different models.

Results

Descriptive statistics, including mean scores and standard deviations of the study variables and univariate effects of the group status, are presented in Table 7.

Table 7

Mean scores (M) with standard deviations (SD) for the majority and minority groups and for the total sample, and univariate effects of the group status

	Total sample	Majority	Minority			
	<i>N</i> = 289	<i>n</i> = 199	<i>n</i> = 90			
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i> (1, 262)	<i>p</i>	η_p^2
Contact quality	4.17 (0.76)	4.24 (0.79)	4.03 (0.70)	5.11	.03	.02
Contact quantity	2.80 (1.09)	2.31 (0.83)	3.91 (0.76)	211.44	<.001	.45
Cooperation	3.13 (0.90)	3.20 (0.93)	2.98 (0.82)	5.11	.03	.02
Common goals	3.15 (0.95)	3.31 (0.95)	2.79 (0.84)	22.69	<.001	.08
Equal status	3.41 (1.00)	3.55 (0.95)	3.11 (1.04)	13.49	<.001	.05
Authority support	3.06 (0.97)	3.09 (0.92)	3.01 (1.07)	0.82	.37	.003
Intergroup attitudes	3.84 (0.71)	3.95 (0.69)	3.60 (0.71)	14.70	<.001	.05
Outgroup trust	3.91 (0.69)	4.11 (0.54)	3.49 (0.79)	49.47	<.001	.06

Note. Response scale: 1-5

The multivariate analysis indicated a significant multivariate effects of group status: $F(8, 255) = 45.40, p < .001$. Regarding the univariate effects, except for online contact quantity, the results demonstrated small to medium effect sizes. Heterosexuals (representing the majority) reported higher levels for all the variables measured (refer to Table 7), with two exceptions: authority support, for which there was no significant difference between the two groups, and online contact quantity, which appeared to be higher among gay men and lesbian women (the minority).

Table 8

Pearson correlations (r) between the variables for the gay men and lesbian women (n = 90) and heterosexuals (n = 199)

	1	2	3	4	5	6	7	8
1. Contact quality	—	.36**	.56**	.54**	.48**	.22**	.51**	.53**
2. Contact quantity	.23*	—	.43**	.39**	.31**	.12	.09	.22**
3. Cooperation	.56**	.21*	—	.73**	.60**	.32**	.30**	.39**
4. Common goals	.45**	.17	.74**	—	.65**	.33**	.32**	.43**
5. Equal status	.53**	.15	.49**	.46**	—	.29**	.33**	.39**
6. Authority support	.25*	.18	.27*	.28**	.32**	—	.03	.14
7. Intergroup attitudes	.56**	.12	.31**	.33**	.40**	.17	—	.59**
8. Outgroup trust	.57**	.22*	.43**	.40**	.57**	.16	.71**	—

Notes. Correlations are shown in the upper part of the table for the majority subsample, in the lower part for minority subsample.

* $p < .05$, ** $p < .01$.

The correlations between the variables for both groups are presented in Table 8. Online contact quality showed positive associations with the optimal conditions, attitudes towards the outgroup, and outgroup trust for both minority and majority. In accordance with prior literature, correlations between quantity of online contact and all the other variables were not significant or weaker, particularly for the minority. For both minority and majority, the association between cooperation, common goals, and equality of status and intergroup attitudes and outgroup trust were positively associated, while the correlations between authority support and intergroup attitudes and outgroup

trust were not significant. Lastly, there was a significant and positive correlation between outgroup trust and attitudes toward the outgroup for both minority and majority.

Model Testing

As reported in Table 9, when the dependent variable was attitudes towards the outgroup, there were no significant two-way interactions between online contact quality and Allport's conditions. Similarly, there were also no significant three-way interactions between online contact quality, Allport's conditions, and group status.

Table 9

Direct and moderated effects of online contact quality, Allport's conditions, and group status on attitudes towards the outgroup

	Cooperation							
	<i>F</i>	<i>Df</i>	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Model 1	17.25	8, 271	.00					
Quality				.43	.07	[.29, .57]	6.04	.00
Cooperation				.04	.06	[-.07, .16]	.72	.47
Sexual orientation				-.14	.11	[-.37, .08]	-1.25	.21
Quality x Sexual orientation				.19	.14	[-.08, .46]	1.35	.18
Quality x Cooperation				-.05	.06	[-.16, .06]	-.83	.40
Sexual orientation x Cooperation				-.05	.11	[-.27, .16]	-.47	.64
Quality x Cooperation x Sexual orientation				.06	.12	[-.16, .29]	.55	.58
Quantity				-.07	.05	[-.16, .03]	-1.42	.16
	Common Goals							
	<i>F</i>	<i>Df</i>	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Model 2	16.89	8, 266	.00					
Quality				.41	.07	[.27, .54]	5.95	.00
Common Goals				.07	.06	[-.04, .18]	1.28	.20
Sexual orientation				-.14	.12	[-.36, .10]	-1.10	.27
Quality x Sexual orientation				.13	.14	[-.14, .40]	.92	.36
Quality x Common goals				-.05	.05	[-.15, .06]	-.86	.39
Sexual orientation x Common goals				.02	.10	[-.18, .22]	.17	.86
Quality x Common goals x Sexual orientation				.03	.12	[-.21, .26]	.20	.84
Quantity				-.07	.05	[-.16, .03]	-1.38	.17

	Equal status							
	<i>F</i>	<i>df</i>	<i>p</i>	<i>b</i>	SE	95% CI	<i>t</i>	<i>p</i>
Model 3	17.73	8, 268	.00					
Quality				.39	.06	[.27, .52]	6.08	.00
Equal status				.10	.05	[-.00, .20]	1.89	.17
Sexual orientation				-.16	.12	[-.39, .07]	-1.38	.17
Quality x Sexual orientation				.20	.14	[-.07, .46]	1.44	.15
Quality x Equal status				-.05	.04	[-.15, .04]	-1.09	.28
Sexual orientation x Equal status				-.01	.09	[-.18, .16]	-.09	.93
Quality x Equal status x Sexual orientation				.14	.10	[-.06, .33]	1.38	.17
Quantity				-.07	.05	[-.16, .03]	-1.37	.17
	Authority Support							
	<i>F</i>	<i>df</i>	<i>p</i>	<i>b</i>	SE	95% CI	<i>t</i>	<i>p</i>
Model 4	16.00	8, 262	.00					
Quality				.46	.06	[.34, .58]	7.62	.00
Authority Support				-.05	.05	[-.14, .05]	-.98	.13
Sexual orientation				-.17	.11	[-.38, .05]	-1.51	.33
Quality x Sexual orientation				.11	.11	[-.10, .33]	1.03	.30
Quality x Authority Support				-.06	.06	[-.17, .05]	-1.05	.29
Sexual orientation x Authority Support				.07	.08	[-.08, .23]	.93	.35
Quality x Authority Support x Sexual orientation				.06	.10	[-.14, .26]	.56	.58
Quantity				-.05	.05	[-.14, .04]	-1.08	.28

When moving to outgroup trust, the two-way interaction between online contact quality and Allport's conditions is confirmed not significant (refer to Table 10). However, in this case, the three-way interaction between online contact quality, Allport's conditions, and group status was significant for two conditions: common goals and equal status. It was not significant for cooperation and authority support. The associations between online contact quality and outgroup trust at different levels of perceived common goals and equal status, for different group status, are detailed in Table 11. Among minority participants, the relation between online contact quality and outgroup trust was

stronger when the perception of common goals and equal status were high. In contrast, for majority participants, the associations between online contact quality and outgroup trust were stronger when perceived common goals and equal status were low.

Table 10

Direct and moderated effects of contact quality, Allport's conditions, and group status on outgroup trust.

	Cooperation							
	<i>F</i>	<i>df</i>	<i>p</i>	<i>b</i>	SE	95% CI	<i>t</i>	<i>p</i>
Model 5	27.25	8, 271	.00					
Quality				.28	.06	[.15, .41]	4.39	.00
Cooperation				.08	.05	[-.02, .19]	1.61	.11
Sexual orientation				-.57	.10	[-.77, -.37]	-5.55	.00
Quality x Sexual orientation				.32	.12	[.08, .56]	2.61	.01
Quality x Cooperation				-.06	.05	[-.16, .03]	-.31	.19
Sexual orientation x Cooperation				.06	.10	[-.14, .25]	.58	.56
Quality x Cooperation x Sexual orientation				.15	.10	[-.05, .36]	1.48	.14
Quantity				.03	.04	[-.06, .11]	.60	.55
	Common Goals							
	<i>F</i>	<i>df</i>	<i>p</i>	<i>b</i>	SE	95% CI	<i>t</i>	<i>p</i>
Model 6	28.15	8, 266	.00					
Quality				.28	.06	[.16, .40]	4.55	.00
Common Goals				.11	.05	[.02, .21]	2.29	.02
Sexual orientation				-.53	.10	[-.74, -.33]	-5.09	.00
Quality x Sexual orientation				.40	.12	[.16, .64]	3.27	.00
Quality x Common Goals				-.04	.05	[-.13, .05]	-.87	.39
Sexual orientation x Common Goals				.03	.09	[-.14, .21]	.37	.71
Quality x Common goals x Sexual orientation				.23	.10	[.02, .43]	2.19	.03
Quantity				.02	.04	[-.07, .10]	.43	.67

		Equal status								
		<i>F</i>	<i>df</i>	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>	
Model 7		32.44	8, 267	.00						
Quality					.28	.06	[.17, .39]	4.99	.00	
Equal status					.10	.04	[.01, .18]	2.19	.03	
Sexual orientation					-.58	.10	[-.78, -.39]	-5.79	.00	
Quality x Sexual orientation					.26	.12	[.03, .49]	2.24	.03	
Quality x Equal status					-.06	.04	[-.14, .03]	-1.33	.18	
Sexual orientation x Equal status					.19	.08	[.04, .33]	2.47	.01	
Quality x Equal status x Sexual orientation					.24	.08	[.08, .41]	2.87	.00	
Quantity					.04	.04	[-.04, .12]	1.04	.30	
		Authority Support								
		<i>F</i>	<i>df</i>	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>	
Model 8		24.21	8, 262	.00						
Quality					-.30	.05	[-.41, -.20]	-5.68	.00	
Authority Support					-.02	.04	[-.10, .07]	-.41	.68	
Sexual orientation					.58	.10	[.39, .77]	5.98	.00	
Quality x Sexual orientation					.29	.10	[.09, .49]	2.86	.00	
Quality x Authority Support					-.03	.05	[-.13, .07]	-.64	.52	
Sexual orientation x Authority Support					-.01	.07	[-.15, .12]	-.15	.00	
Quality x Authority Support x Sexual orientation					-.02	.09	[-.19, .15]	-.23	.82	
Quantity					.05	.04	[-.04, .13]	1.10	.27	

Finally, when a composite score averaging the four optimal conditions was used, the three-way interaction between this composite score, online contact quality, and sexual orientation was not significant when intergroup attitudes was the dependent variable ($b = .11$, $SE = .13$, $p = .40$, $F(8, 275) = 17.84$, $p = .00$). However, the model showed a significant three-way interaction effect of online contact quality, Allport's conditions, and group status on outgroup trust ($b = .26$, $SE = .12$, $p = .03$, $F(8, 274) = 29.92$, $p = .00$). Results are showed in Table 11³.

Table 11

Associations between online contact quality and outgroup trust at different levels of perceived common goals, equal status, and Allport's conditions combined in a single index, for majority and minority participants

	Levels of perceived moderator	<i>b</i>	<i>se</i>	<i>t</i>	<i>P</i>	LLCI	ULCI
Equal status							
Minority	-1.41	.28	.10	2.66	.01	.07	.49
Minority	.59	.65	.13	5.01	.00	.40	.91
Majority	-1.41	.36	.07	5.09	.00	.22	.50
Majority	.59	.25	.07	3.67	.00	.11	.38
Common goals							
Minority	-1.15	.46	.10	4.45	.00	.26	.67
Minority	.85	.84	.16	5.12	.00	.51	1.16
Majority	-1.15	.32	.07	4.79	.00	.19	.46
Majority	.85	.24	.08	2.94	.00	.08	.41
Four conditions							
Minority	2.50	.42	.10	4.17	.00	.22	.62
Minority	4.00	.71	.16	4.34	.00	.39	1.03
Majority	2.50	.31	.06	5.22	.00	.19	.43
Majority	4.00	.22	.09	2.55	.01	.05	.39

Discussion

This study investigated whether Allport's optimal contact conditions moderate the association between spontaneous social media online intergroup contact and two intergroup outcomes, namely attitudes towards the outgroup and outgroup trust, among majority and minority group members with different sexual orientations. The findings confirmed that online intergroup contact positively impacts intergroup attitudes and outgroup trust, consistent with both classical (Pettigrew & Tropp, 2006) and recent (Imperato et al., 2021a) literature on intergroup contact. Thus, H1a and H1b were supported.

The study also explored whether Allport's optimal conditions, which facilitate positive contact in offline settings, would enhance the effects of spontaneous online intergroup contact. Surprisingly, the results indicated that, across the entire sample, none of Allport's conditions for optimal intergroup contact significantly moderated the impact of online contact quality on attitudes towards the outgroup and outgroup trust. Thus, H2a and H2b were not supported. These findings aligned with the notion that while optimal conditions can enhance contact effects, they may not always be strictly necessary, as suggested by previous research (Pettigrew & Tropp, 2006).

The most significant contribution of this study is the exploration of how Allport's conditions affect online intergroup contact experienced by minority group members. The results, partially supporting H3a, revealed that two conditions, common goals, and equal status, played a pivotal role in facilitating trust among the minority social group (gay men and lesbian women). These conditions seemed to have a more substantial impact on trust when contact was perceived as having high levels of common goals and equal status, a dynamic that is particularly relevant for sexual minorities seeking acceptance and inclusion. The results also highlighted the unique features of online interactions that may make these conditions more perceptible and influential, including the perception of equality of status and shared goals.

While this study provided valuable insights, several limitations should be noted. The cross-sectional design restricted causal inferences. Moreover, this correlational study only focused on experiences of contact, which were retrospectively reported. To overcome these limitations, future research should experimentally manipulate contact and/or adopt longitudinal designs. Additionally, the use of single items to assess participants' perception of Allport's conditions on social media may be considered a limitation. However, it is consistent with previous research in this area (e.g., Vezzali & Capozza, 2011). Despite this limitation, the present study provided a significant contribution to the online contact literature by showing for the first time the role played by optimal conditions in online intergroup contact that occurs spontaneously through social media. Moreover, the construct to be

investigated was particularly specific, and some studies state that in this case, the use of single items is particularly appropriate, due to a series of factors, including the parsimony in administration time for the participants and the reduction of data processing costs (Allen et al., 2022). Another limitation is that the study's results are related to sexual minorities and may not generalize to other minority groups or intergroup contexts. Furthermore, even within the social context of sexual minorities, we only included participants who identified as gay or lesbian, thus excluding a part of the population including participants identifying as bisexual or transgender. Similarly, participants in the majority group were asked to express their views towards gay and lesbian people only, and not towards the sexual minority group as a whole. Future research should include a broader sample representing diverse sexual orientations and explore secondary transfer effects in social media interactions. Furthermore, the imbalance in the sample sizes between the minority (gay men and lesbian women) and majority (heterosexual) groups may have affected the statistical analyses. It would be beneficial to address this imbalance in future studies. Finally, controlling for direct face-to-face contact, which was not considered in this research, could yield more accurate estimates in investigations of online contact and intergroup outcomes. However, Žeželj and colleagues (2017) found that the effects of online contact are significant over and above the direct and indirect effects of face-to-face contact. Nevertheless, future studies should control for these effects, when investigating the relationship between online contact and intergroup outcomes.

Chapter 5. Discussion and conclusion

Overview of main aims and results of the thesis

In today's digital age, interactions between different social groups mainly moved online. This new interaction environment provides new opportunities to reduce prejudice between different social groups (Amichai-Hamburger et al., 2015). First evidences show that online contact has the potential to improve social relations between majority and minority groups (Imperato et al., 2021; White et al., 2020). However, as suggested by Allport (1954) concerning face-to-face contact, a simple interaction might not automatically improve social relations. Indeed, there is also the possibility of negative consequences of contact (Barlow et al., 2012). Allport (1954) also suggested that four optimal conditions, when present, facilitate prejudice reduction through intergroup contact: equal status, cooperation, common goals, and authority support. Although online intergroup contact is now becoming central in intergroup contact research, we still know little about which conditions are important to improve the effect of this type of contact and about its consequences on the relations between majority and minority social groups. More specifically, it is unclear whether Allport's conditions are useful for improving the effects of contact even when the interaction moves online. Consequently, this thesis aimed to investigate the role played by Allport's conditions in the intergroup contact which takes place online, with particular attention to the differences in their effect for majority and minority social groups. To this end, this work consisted of three studies: a systematic review of the literature (Study 1), an experimental study (Study 2), and a correlational study (Study 3). Study 1 aimed to contribute to the literature reviewing studies on intergroup contact in online settings, focusing on the involvement of majority and minority social groups and on the investigation/implementation of Allport's conditions during the contact. Two interesting aspects emerged from the results: first, no study has empirically tested the role of Allport's conditions in both structured and unstructured online intergroup contact to date, and second, social minorities are widely underrepresented in online intergroup research. From those few studies present in the literature, while for the majority the positive effects of contact are confirmed (Imperato et al., 2021), for the minority

they still seem contradictory, with some studies finding greater effects for the majority (Mustafa & Poh, 2019; Tynes et al., 2008; Schumann et al., 2017) and others finding them for both (White & Abu-Rayya, 2012; White et al., 2019a). However, the number of studies involved in this comparison was too small to draw firm conclusions. To sum up, based on the studies currently present in the literature, it was difficult to understand whether Allport's conditions were still facilitators of the effects of contact when the interaction took place online and the role they played for majority and minority social groups.

Based on this evidence, Study 2 and Study 3 were conducted. Study 2 aimed to contribute to the literature understanding of the role played by Allport's conditions in an online intergroup structured interaction for majority and minority social groups. To this end, heterosexual and gay/bisexual participants interacted through a pre-programmed chat with an outgroup member in one of three experimental conditions: Allport's conditions *activated*, Allport's conditions *not activated*, or control. Results showed that participants who interacted with the outgroup member when Allport's conditions were *activated* reported more favorable intergroup attitudes than those who interacted with the outgroup member when Allport's conditions were *not activated* and the control group. We also found this positive effect of the conditions on intergroup empathy when minority participants were included in the analysis. Then, we found no effect on intergroup anxiety and self-disclosure. Finally, Study 3 aimed to contribute to the literature investigating the role played by Allport's conditions in online intergroup unstructured interactions on social media for majority and minority social groups. To this end, heterosexual and gay/lesbian participants completed an online survey in which the quality of online contact, Allport's conditions, and intergroup outcomes were assessed. Results showed that the three-way interaction between quality of contact, groups status, and two of the four Allport's conditions (common goals and equal status), was significant, showing that, for minority participants, when common goals and equal status were strongly perceived, the positive relation between quality of online contact and outgroup trust increased (while it decreased for majority participants).

The role of Allport's conditions in online contact

Looking overall at the results of the two empirical studies, the experimental and the correlational, a similar trend emerges. That is, the effect of conditions appears to be quite weak and related only to some variables. A first explanation can be found in the nature of the context in which they were investigated, i.e., online contact. This type of contact can be considered a middle ground between direct contact, such as face-to-face, and indirect contact, such as extended contact (Eller et al., 2012). However, Allport's conditions have been theorized in relation to face-to-face direct contact and the reflection that led to identifying them has its roots in a direct and highly conflictual intergroup context, namely that between Whites and Blacks in America in the 1950s, where the social tension with respect to this intergroup dynamic was certainly very high. Although their application in other face-to-face intergroup contexts has nevertheless proven effective (Pettigrew & Tropp, 2006), their application in online contact requires a more critical look. Indeed, online contact can be considered less direct than face-to-face contact, and this may affect Allport's conditions. In fact, precisely because of its less engaging nature than face-to-face contact, the conditions can also have a less strong impact. For example, for a variable such as intergroup anxiety, whether Allport's conditions are present or not may make no difference. The fact of already being in a protected context that can be kept under control may mean that perceiving equality of status or support from authority is not necessary because the very nature of the interaction is sufficient to level intergroup anxiety.

For online contact research, these findings may have interesting implications. In fact, they may suggest that it is appropriate to broaden the research to other conditions that may facilitate the effects of online contact on prejudice. For example, the seven characteristics of online contact theorized by Amichai-Hamburger and colleagues (2015) can also be considered as conditions that, if encouraged, facilitate the effects of contact on prejudice. However, no research has currently empirically tested their moderation effects. Another interesting implication relating to structured contact can be found in relation to the text-based online contact paradigm. In fact, the paradigm developed by White and colleagues (2020) was based on two theoretical foundations: on the one

hand, the implementation of Allport's conditions, and on the other, the *dual identity recategorization* processes (Dovidio et al., 2009). In light of the results emerging from the present research, which highlight the slightly weak role played by Allport's conditions, it would be very interesting to empirically test the role played by the recategorization process in facilitating the effects of online contact.

Online contact and Allport's conditions for minorities

Considering the social status, our results are interesting for two reasons. First, they indicate that there may be a usefulness of Allport's conditions for minorities in the context of online interaction. Indeed, it is important to note that the conditions seemed to be more effective in both the structured and unstructured contexts when minority groups were considered in the analyses. These results are very interesting, because they give us a first important indication of the fact that the role played by Allport's conditions in online contact is not the same as the one they play in face-to-face contact. Indeed, in face-to-face contact, their facilitation role has been widely tested, and it has also been widely proved that this role is present only for majority social groups (Tropp & Pettigrew, 2005). From our studies, what emerges is that the facilitation effects are very weak, but they appear to be slightly more important for minority groups. An explanation for this divergence must be sought first in the diversity of the interaction environment and the extremely particular characteristics of online communications, which were described by Amichai-Hamburger and colleagues (2015) and discussed in the introductory part of this work. The fact of being able to interact anonymously, of being able to control the level of exposure and the timing of the interaction, can, for example, allow minorities to decide how much and how to expose themselves and, therefore, to approach the interaction with more confidence. For this reason, they can finally find themselves in a context in which Allport's conditions find fertile ground to ameliorate the positive effects of contact for this group, too. Another factor discussed by Amichai-Hamburger and colleagues (2015), which may have played a relevant role for minorities, is the possibility of finding people with similar interests, values, and beliefs online. This

characteristic can lead to the activation of a very important process that is activated during intergroup interactions, namely that of common ingroup identification (Gaertner & Dovidio, 2000). When a superordinate common identity is made salient, the categorizations between ingroup and outgroup that are immediately relevant when approaching an intergroup interaction lose their relevance. Since social media, and the online environment in general, offer great possibilities for meetings based on common interests for certain topics or different forms of activism, it is possible that being part of a superordinate group oriented towards a common passion or a common goal makes minorities less worried about their group belonging and instead makes them feel part of a single group with the majority, thus lowering the levels of fear and perceived threat that can reduce the effects of positive contact. Certainly, future research could empirically investigate the role played by this process in the interaction with Allport's conditions in online contact.

A second interesting aspect is that these results make us reflect on the importance of identifying variables that are relevant for each specific social group. Trust, for example, is not among the most classic variables investigated in the literature on contact, however, it is certainly a variable that represents an important psychological process for minorities, who certainly need contact to give them the opportunity to recreate a bond of trust with the majority, by which they have been oppressed for a long time (Tropp, 2006).

Limitations and future directions for online contact research

The present research is not without limitations. First, the conclusions drawn in relation to the effectiveness of Allport's conditions in online contact refer to the intergroup relationship investigated in the two empirical studies, i.e., that between people with different sexual orientations. It is important to remember that it would be appropriate to replicate these investigations by also involving other majority and minority social groups to be able to generalize the conclusions and arrive at a clearer vision of the phenomenon. A second limitation is the sample size. In fact, the recruitment of participants belonging to the minority social group was difficult and, for the experimental study, it

was not possible to reach a sample size sufficient to allow the analyses to be carried out separately for the two social groups. Achieving enough participants to allow comparability of the data will be of great importance to carry out a better comparison of the effects of contact for the two groups. Despite this limitation, it was still considered very important to include the minority subsample in the analyses, at least to have an initial indication. In fact, as emerged from the systematic review, in the literature on online contact there is a great disproportion between studies that include majorities and those that include minorities. Nevertheless, it is considered of fundamental importance that research on contact strives to include both social groups in the studies. Another limitation of this research consists in not having considered a very important aspect of the online interaction environment, namely that of negative contact (Paolini et al., 2010). In fact, online interactions, particularly unstructured and spontaneous ones, are also characterized by highly negative experiences (Keum & Miller, 2018). Indeed, some characteristics of online interactions, such as anonymity, can make people feel freer to express prejudices and discrimination more freely and without being responsible for them. In the case of this thesis this choice was made to maintain the focus on Allport's conditions, which are implemented precisely to build positive intergroup contact. However, it would certainly be very useful to also maintain focus on this aspect of online interactions and understand which conditions can mitigate its negative effects. Finally, another aspect that can be improved in future research is to include the study of another important condition for contact, namely what Pettigrew (1998) calls *the potential for friendship*, which reinforces the effects of contact. In fact, in the experimental study, the interaction was very short, highly structured, and above all, pre-programmed, so it did not give the participants the opportunity to fully express themselves and be able to begin to establish a potential bond with the chat partner. In the correlational study, we did not ask participants how much social media empowered them to develop intergroup friendships. However, this aspect has also been identified as facilitating the effects of contact on prejudice (Pettigrew, 1998) and the online environment certainly offers opportunities to investigate this condition. Therefore, future experimental research could go in the direction of increasing the spontaneity of participants'

communication, even at the price of decreasing control over the experimental manipulation, and correlational research could start to investigate the potential of online interactions to develop and maintain cross-group friendships.

Another direction in which it would be extremely interesting to expand the investigation of online intergroup contact is in its relation to indirect forms of contact in the literature. For instance, studies on imagined contact have demonstrated its effectiveness in reducing prejudice. Since today most interactions take place online through social media, and this type of contact allows much greater exposure to diversity, it would be extremely interesting to investigate whether imagining an online interaction can influence prejudice reduction. Indeed, especially for younger generations, it might be easier to imagine an online interaction than a face-to-face one. Furthermore, different levels of participant proactivity in the imagined interaction could be explored, moving on a continuum from simple exposure to content generated by an outgroup member to the preparation of the content by the participant designed for an outgroup target. This type of imaginative task may require considerable empathic effort on the part of the participant, which could consequently lead to a reduction in intergroup bias.

Another aspect that would be interesting to investigate is the relationship between online intergroup contact and vicarious contact. Indeed, vicarious contact consists of the observation of an ingroup member having a positive interaction with an outgroup member. Online contact, especially that which occurs in an unstructured way through social media, assumes a large component of exposure to content. Therefore, it is very difficult for researchers to circumscribe exactly which content the participant is exposed to. This could lead to a partial overlap between the two different forms of contact when this is investigated with cross-sectional studies. In this regard, therefore, it is important to pay attention to how online contact is investigated by correlational studies. Indeed, although the use of these designs is extremely useful as it leads to the investigation of online contact outside the experimental setting – which is often distant from real interactions – it brings with it the

limitation of the difficulty of limiting the research object. In order to overcome this limitation, it could be very useful to conduct research combining quantitative with qualitative methods. In addition, it would be useful to conduct research comparing participants' perceptions of online and offline relationships, in fact, some people might perceive online contact as very similar to face-to-face contact and feel more involved, while other people might perceive it as closer to vicarious contact, more like exposure, in which case they might be less involved and thus online contact might have less of an effect on prejudice.

Despite the above-mentioned limitations, the present work represents a first step towards a better understanding of the role played by Allport's (1954) conditions in online intergroup contact. In fact, they have represented a reference in the contact literature, being used as an indication to structure contact interventions by dozens of studies. Given their great importance and continuous implementation, it is of great importance not to take them for granted or activate them uncritically, but to question how they can be present in the modes of intergroup interaction that change day after day. Furthermore, considering the continuous growth of online interactions, it is essential to extend the research by testing conditions different from the classic ones and adapting to the change in communication methods.

Reference list

- Abu-Rayya, H. M. (2017). Majority members' endorsement of the acculturation integrationist orientation improves their outgroup attitudes toward ethnic minority members: An electronic-contact experiment. *Computers in Human Behavior*, 75, 660–666. <https://doi.org/10.1016/j.chb.2017.06.010>
- Adachi, P. J. C., Hodson, G., Willoughby, T., & Zanette, S. (2015). Brothers and sisters in arms: Intergroup cooperation in a violent shooter game can reduce intergroup bias. *Psychology of Violence*, 5(4), 455–462. <https://doi.org/10.1037/a0037407>
- Allen, M. S., Iliescu, D., & Greiff, S. (2022). Single item measures in psychological science: A call to action [Editorial]. *European Journal of Psychological Assessment*, 38(1), 1–5. <https://doi.org/10.1027/1015-5759/a000699>
- Allport, G. W. (1954). *The nature of prejudice*. Doubleday Anchor
- Altemeyer, B. (1996). *The authoritarian specter*. Harvard University Press.
- Alvidrez, S., Pineiro-Naval, V., Marcos-Ramos, M., & Rojas-Solis, J. L. (2015). Intergroup contact in computer-mediated communication: The interplay of a stereotype-disconfirming behavior and a lasting group identity on reducing prejudiced perceptions. *Computers in Human Behavior*, 52, 533–540. <https://doi.org/10.1016/j.chb.2014.09.006>
- Amichai-Hamburger, Y. (2002). Internet and personality. *Computers in Human Behavior*, 18(1), 1–10. [https://doi.org/10.1016/S0747-5632\(01\)00034-6](https://doi.org/10.1016/S0747-5632(01)00034-6)
- Amichai-Hamburger, Y. (2005). Personality and the Internet. In Y. Amichai-Hamburger (Ed.), *The social net: Human behavior in cyberspace* (pp. 27–55). Oxford University Press.
- Amichai-Hamburger, Y. (2013). Reducing intergroup conflict in the digital age. In H. Giles (Ed.), *The handbook of intergroup communication* (pp. 181–193). Routledge.

- Amichai-Hamburger, Y., Fine, A., & Goldstein, A. (2004). The impact of Internet interactivity and need for closure on consumer preference. *Computers in Human Behavior*, 20(1), 103–117. [https://doi.org/10.1016/S0747-5632\(03\)00041-4](https://doi.org/10.1016/S0747-5632(03)00041-4)
- Amichai-Hamburger, Y., & Furnham, A. (2007). The positive net. *Computers in Human Behavior*, 23(2), 1033–1045. <https://doi.org/10.1016/j.chb.2005.08.008>
- Amichai-Hamburger, Y., & Hayat, Z. (2013). Personality and the Internet. In Y. Amichai-hamburger (Ed.), *The social net: Understanding our online behavior* (2nd ed., pp. 27–56). Oxford University Press.
- Amichai-Hamburger, Y., & McKenna, K. Y. A. (2006). The Contact Hypothesis Reconsidered: Interacting via the Internet. *Journal of Computer-Mediated Communication*, 11(3), 825–843. <https://doi.org/10.1111/j.1083-6101.2006.00037.x>
- Amichai-Hamburger, Y., Hasler, B. S., Shani-Sherman, T. (2015). Structured and unstructured intergroup contact in the digital age. *Computers in Human Behavior*, 52, 515–522. <http://dx.doi.org/10.1016/j.chb.2015.02.022>
- Amzalag, M., & Shapira, N. (2021). Improving Intergroup Relations Through Online Contact. *International Review of Research in Open and Distance Learning*, 22(1), 111–134. <https://doi.org/10.19173/irrodl.v22i1.5098>
- Andrews, N. P., Yogeeswaran, K., Walker, M. J., & Hewstone, M. (2018). Effect of valenced vicarious online contact on out-group prejudice and perceived out-group variability: A study of online poker. *Journal of Applied Social Psychology*, 48(10), 571–581. <https://doi.org/10.1111/jasp.12548>
- Árnadóttir, K., Lollot, S., Brown, R., & Hewstone, M. (2018). Positive and negative intergroup contact: Interaction not asymmetry. *European Journal of Social Psychology*, 48(6), 784–800. <https://doi.org/10.1002/ejsp.2365>

- Aron, A., & McLaughlin-Volpe, T. (2001). Including others in the self. In C. Sedikides & M. Brewer (Eds.), *Individual self, relational self, collective self* (pp. 89-108). Psychology Press.
- Aronson, E., & Patnoe, S. (1997). *The Jigsaw Classroom*. Longman
- Austin, R. (2006). The role of ICT in bridge-building and social inclusion: theory, policy and practice issues. *European Journal of Teacher Education*, 29(2), 145-161.
<https://doi.org/10.1080/02619760600617284>
- Bagci, S. C., Guvensoy, I., Turner, R. N., White, F. A., & Piyale, Z. E. (2021). Investigating the role of e-contact and self-disclosure on improving turkish-kurdish interethnic relations. *Journal of Applied Social Psychology*, 51(6), 577–593. <https://doi.org/10.1111/jasp.12760>
- Bargh, J. A., & McKenna, K. Y. (2004). The internet and social life. *Annual Review of Psychology*, 55, 573–590. <http://dx.doi.org/10.1146/annurev.psych.55.090902.141922>
- Barlow, F. K., Paolini, S., Pedersen, A., Hornsey, M. J., Radke, H. R. M., Harwood, J., Rubin, M., & Sibley, C. G. (2012). The contact caveat: Negative contact predicts increased prejudice more than positive contact predicts reduced prejudice. *Personality and Social Psychology Bulletin*, 38(12), 1629–1643. <https://doi.org/10.1177/0146167212457953>
- Batson, C., Lishner, C. J., & Sawyer, S. (2005). Similarity and nurturance: Two possible sources of empathy for strangers. *Basic and Applied Social Psychology*, 27(1), 15-25.
https://doi.org/10.1207/s15324834basp2701_2
- Becker, H., Naaman, M., & Gravano, L. (2011). Beyond trending topics: Real-world event identification on twitter. *ICWSM*, 11, 438–441. <https://doi.org/10.1609/icwsm.v5i1.14146>
- Berry, S. A., & White, F. A. (2016). *E-contact as a strategy for improving attitudes towards Indigenous Australians* (Unpublished honours thesis). The University of Sydney.

- Bettencourt, B. A., Brewer, M. B., Croak, M. R., & Miller, N. (1992). Cooperation and the reduction of intergroup bias: The role of reward structure and social orientation. *Journal of Experimental Social Psychology*, 28(4), 301–319. [https://doi.org/10.1016/0022-1031\(92\)90048-O](https://doi.org/10.1016/0022-1031(92)90048-O)
- Binder, J., Zagefka, H., Brown, R., Funke, F., Kessler, T., Mummendey, A., ... & Leyens, J. P. (2009). Does contact reduce prejudice or does prejudice reduce contact? A longitudinal test of the contact hypothesis among majority and minority groups in three European countries. *Journal of personality and social psychology*, 96(4), 843-856. <https://psycnet.apa.org/doi/10.1037/a0013470>
- Boccanfuso, E., White, F. A., & Maunder, R. D. (2020). Reducing transgender stigma via an e-contact intervention. *Sex Roles: A Journal of Research*, 84(5), 326–336. <https://doi.org/10.1007/s11199-020-01171-9>
- Broadly, T. R., Brener, L., Vuong, T., Cama, E., & Treloar, C. (2021). Online interventions to reduce stigma towards population groups affected by blood borne viruses in Australia. *International Journal of Drug Policy*, 96. Article 103292. <https://doi.org/10.1016/j.drugpo.2021.103292>
- Bruneau, E., Hameiri, B., Moore-Berg, S. L., & Kteily, N. (2021). Intergroup contact reduces dehumanization and meta-dehumanization: Cross-sectional, longitudinal, and quasi experimental evidence from 16 samples in five countries. *Personality and Social Psychology Bulletin*, 47(6), 906–920. <https://doi.org/10.1177/0146167220949004>
- Brylka, A. A., Jasinskaja-Lahti, I., & Mähönen, T. A. (2016). The majority influence on interminority attitudes: The secondary transfer effect of positive and negative contact. *International Journal of Intercultural Relations*, 50, 76–88. <https://doi.org/10.1016/j.ijintrel.2015.12.007>

- Blascovich, J., Mendes, W., Hunter, S., Lickel, B., & Kowai-Bell, N. (2001). Perceiver threat in social interaction with stigmatized others. *Journal of personality and Social Psychology*, *80*(2), 253-267. <https://psycnet.apa.org/doi/10.1037/0022-3514.80.2.253>
- Brewer, M., & Miller, N. (1984). Beyond the contact hypothesis: theoretical perspectives on desegregation. In N. Miller & M. Brewer (Eds.), *Groups in Contact: The Psychology of Desegregation* (pp. 281-302). Academic.
- Brewer, M., & Kramer, R. (1985). The psychology of intergroup attitudes and behaviour. *Annual review of psychology*, *36*, 219-243. <https://doi/10.1146/annurev.ps.36.020185.001251>
- Brown, R. & Paterson, J. (2016). Indirect contact and prejudice reduction: Limits and possibilities. *Current Opinion in Psychology*, *11*, 20–24. <https://doi.org/10.1016/j.copsyc.2016.03.005>
- Cao, B., & Lin, W. Y. (2017). Revisiting the contact hypothesis: Effects of different modes of computer-mediated communication on intergroup relationships. *International Journal of Intercultural Relations*, *58*, 23-30. <https://doi.org/10.1016/j.ijintrel.2017.03.003>
- Cao, C., & Meng, Q. (2020). Effects of online and direct contact on Chinese international students' social capital in intercultural networks: testing moderation of direct contact and mediation of global competence. *Higher Education*, *80*(4), 625–643. <https://doi.org/10.1007/s10734-020-00501-w>
- Cao, C., Meng, Q., & Shang, L. (2018). How can Chinese international students' host-national contact contribute to social connectedness, social support and reduced prejudice in the mainstream society? Testing a moderated mediation model. *International Journal of Intercultural Relations*, *63*, 43–52. <https://doi.org/10.1016/j.ijintrel.2017.12.002>
- Capozza, D., Trifiletti, E., Vezzali, L., & Favara, I. (2013). Can intergroup contact improve humanity attributions? *International Journal of Psychology*, *48*(4), 527–541. <https://doi.org/10.1080/00207594.2012.688132>

- Capozza, D., Vezzali, L., Trifiletti, E., Falvo, R., & Favara, I. (2010). Improving intergroup relationships within and outside the contact situation: the role of common ingroup identity and emotions of empathy and anxiety. *TPM-Testing, Psychometrics, Methodology in Applied Psychology*, 17(1), 17-36.
- Cohen, E. G. (1982). Expectation states and interracial interaction in school settings. *Annual Review of Sociology*, 8, 209–235. <https://psycnet.apa.org/doi/10.1146/annurev.so.08.080182.001233>
- Chu, D., & Griffey, D. (1985). The contact theory of racial integration: the case of sport. *Sociology of Sport Journal*, 2(4), 323-333. <https://doi.org/10.1123/ssj.2.4.323>
- Cohen, E. G., & Lotan, R. A. (1995). Producing equal-status interaction in the heterogeneous classroom. *American Educational Research Journal*, 32(1), 99–120. <https://doi.org/10.2307/1163215>
- Cohen, G. L., & Steele, C. M. (2002). A barrier of mistrust: How negative stereotypes affect cross-race mentoring. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 303–327). San Diego Academic Press.
- Cohen, G., Walton, G. M., & Garcia, J. (2004, January). *The trust gap: The effect of stigmatization on academic experience*. Paper presented at the annual meeting of the Society for Personality and Social Psychology, Austin, TX.
- Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological bulletin*, 129(3), 414-446. <https://psycnet.apa.org/doi/10.1037/0033-2909.129.3.414>
- Crisp, R. J., & Turner, R. N. (2009) Can imagined interactions produce positive perceptions? Reducing prejudice through simulated social contact. *American Psychologist*, 64(4), 231–240. <https://doi.org/10.1037/a0014718>

- Crisp, R. J., Stathi, S., Turner, R. N., & Husnu, S. (2009). Imagined intergroup contact: Theory, paradigm and practice. *Social and Personality Psychology Compass*, 3(1), 1-18. <https://doi.org/10.1111/j.1751-9004.2008.00155.x>
- Cummings, L. L., & Bromiley, P. (1996). The Organizational Trust Inventory (OTI): Development and validation. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 302–330). Sage Publications, Inc. <https://doi.org/10.4135/9781452243610.n15>
- Deutsch, M., & Collins, M. (1951). *Interracial housing: A psychological evaluation of a social experiment*. University of Minnesota Press.
- Devine, P. G., & Vasquez, K. A. (1998). The rocky road to positive intergroup relations. In J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism: The problem and the response* (pp. 234–262). Sage
- Di Bernardo, G. A., Vezzali, L., Birtel, M. D., Stathi, S., Ferrari, B., Giovannini, D., & Pettigrew, T. F. (2021). The role of optimal conditions and intergroup contact in promoting positive intergroup relations in and out of the workplace: A study with ethnic majority and minority workers. *Group Processes & Intergroup Relations*, 25(6), 1516-1533. <https://doi.org/10.1177/13684302211010929>
- Dixon, J., Durrheim, K., Kerr, P., & Thomae, M. (2013). ‘What’s So Funny ‘Bout Peace, Love and Understanding?’ Further Reflections on the Limits of Prejudice Reduction as a Model of Social Change. *Journal of Social and Political Psychology*, 1 (1), 239-252. <http://dx.doi.org/10.5964/jspp.v1i1.234>
- Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences*, 46(2), 172–177. <https://psycnet.apa.org/doi/10.1016/j.paid.2008.09.022>

- Dixon, J. A., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal strategy: A “reality check” for the contact hypothesis. *American Psychologist*, *60*(7), 697–711. <https://doi.org/10.1037/0003-066X.60.7.697>
- Douglas, K. M., & McGarty, C. (2001). Identifiability and self-presentation: Computer-mediated, communication and intergroup interaction. *British Journal of Social Psychology*, *40*(3), 399–416. <https://doi.org/10.1348/014466601164894>
- Dovidio, J. F., Gaertner, S. L., & Saguy, T. (2009). Commonality and the complexity of “we”. *Social Attitudes and Social Change. Personality and Social Psychology Review*, *13*(1), 3–20. <https://doi.org/10.1177/1088868308326751>
- Duckitt, J., Wagner, C., du Plessis, I., & Birum, I. (2002). The psychological bases of ideology and prejudice: Testing a dual process model. *Journal of Personality and Social Psychology*, *83*(1), 75–93. <https://psycnet.apa.org/doi/10.1037/0022-3514.83.1.75>
- Durrheim, K., Jacobs, N., & Dixon, J. (2013). Explaining the paradoxical effects of intergroup contact: Paternalistic relations and system justification in domestic labour in South Africa. *International Journal of Intercultural Relations*, *41*, 150–164. <http://dx.doi.org/10.1016/j.ijintrel.2013.11.006>
- Eller, A., Abrams, D., & Gomez, A. (2012) When the direct route is blocked: The extended contact pathway to improving intergroup relations. *International Journal of Intercultural Relations*, *36*(5), 637–646. <https://doi.org/10.1016/j.ijintrel.2012.03.005>
- Ensari, N., & Miller, N. (2002). The out-group must not be so bad after all: The effects of disclosure, typicality, and salience on intergroup bias. *Journal of Personality and Social Psychology*, *83*(2), 313–329. <https://psycnet.apa.org/doi/10.1037/0022-3514.83.2.313>

- Ferrin, D. L., Bligh, M. C., & Kohles, J. C. (2007). Can I trust you to trust me?: A theory of trust, monitoring, and cooperation in interpersonal and intergroup relationships. *Group & Organization Management*, 32(4), 465–499. <https://doi.org/10.1177/1059601106293960>
- Finchilescu, G. (2010). Intergroup anxiety in interracial interaction: The role of prejudice and metastereotypes. *Journal of Social Issues*, 66(2), 334–351. <https://doi.org/10.1111/j.1540-4560.2010.01648.x>
- Fuochi, G., Voci, A., Boin, J., & Hewstone, M. (2020). Affective generalization from intergroup contact: Associations between contact-related and outgroup-related empathy, anxiety, and trust. *Group Processes & Intergroup Relations*, 24(7), 1132-1150. <https://doi.org/10.1177/1368430220932662>.
- Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The common ingroup identity model*. Psychology Press.
- Gaertner, S. L., Rust, M. C., Dovidio, J. F., Bachman, B. A., & Anastasio, P. A. (1994). The contact hypothesis: The role of a common ingroup identity on reducing intergroup bias. *Small Group Research*, 25(2), 224–249. <https://doi.org/10.1177/1046496494252005>
- Gaertner, S., Mann, J., Murrell, A., & Dovidio, J. F. (1989). Reducing intergroup bias: The benefits of recategorization. *Journal of Personality and Social Psychology*, 57(2), 239-249. <https://psycnet.apa.org/doi/10.1037/0022-3514.57.2.239>
- Gaertner, S. L., Dovidio, J. F., Banker, B. S., Houlette, M., Johnson, K. M., & McGlynn, E. A. (2000). Reducing intergroup conflict: From superordinate goals to decategorization, recategorization, and mutual differentiation. *Group Dynamics: Theory, Research, and Practice*, 4(1), 98–114. <https://doi.org/10.1037/1089-2699.4.1.98>
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd Edition). The Guilford Press.

- Hyers, L. L., & Swim, J. K. (1998). A comparison of the experiences of dominant and minority group members during an intergroup encounter. *Group Processes and Intergroup Relations*, 1(2), 143–163. <https://doi.org/10.1177/1368430298012003>
- Hasler, B. S., & Amichai-Hamburger, Y. (2013). Online intergroup contact. In Y. Amichai-Hamburger (Ed.), *The social net: Understanding our online behavior* (pp. 220–252). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199639540.003.0012>
- Herek, G. M., & McLemore, K. A. (2013). Sexual prejudice. *Annual Review of Psychology*, 64, 309–333. <https://doi.org/10.1146/annurev-psych-113011-143826>
- Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M.J., et al. (2019). *Cochrane handbook for systematic reviews of interventions*. John Wiley & Sons.
- Hodson, G. (2008). Interracial prison contact: The pros for (socially dominant) cons. *British Journal of Social Psychology*, 47(2), 325–351. <https://doi.org/10.1348/014466607X231109>
- Hodson, G., & Hewston, M. (2013). *Advances in Intergroup Contact*. Psychology Press.
- Hewstone, M., & Brown, R. (1986). Contact is not enough: An intergroup perspective on the "contact hypothesis". In M. Hewstone & R. Brown (Eds.), *Contact and conflict in intergroup encounters* (pp. 1-44). Basil Blackwell.
- Hodson, G., & Esses, V. (2005). Lay perceptions of ethnic prejudice: Causes, solutions, and individual differences. *European Journal of Social Psychology*, 35(3), 329-344. <https://doi.org/10.1002/ejsp.251>
- Hoter, E., Shonfeld, M., & Ganayem, A. N. (2012). TEC center: Linking technology, education and cultural diversity. *I-Manager's Journal of Educational Technology*, 9, 15–22.

- Hsueh, M., Yogeeswaran, K., & Malinen, S. (2015). "Leave your comment below": Can biased online comments influence our own prejudicial attitudes and behaviors? *Human Communication Research*, 41(4), 557–576. <https://doi.org/10.1111/hcre.12059>
- Imperato, C., Schneider, B. H., Caricati, L., Amichai-Hamburger, Y., & Mancini, T. (2021a). Allport meets internet: A meta-analytical investigation of online intergroup contact and prejudice reduction. *International Journal of Intercultural Relations*, 81, 131-141. <https://doi.org/10.1016/j.ijintrel.2021.01.006>
- Imperato, C., Keum, B. T., & Mancini, T. (2021b). Does intercultural contact increase anti-racist behavior on social network sites? *Social Sciences*, 10(6). <https://doi.org/10.3390/socsci10060207>
- Jackman, M., & Crane, M. (1986). "Some of my best friends are black..." interracial friendship and whites' racial attitudes. *Public Opinion Quarterly*, 50(4), 459- 486. <https://doi.org/10.1086/268998>
- Johnston, L., & Hewstone, M. (1992). Cognitive models of stereotype change: III. Subtyping and the perceived typicality of disconfirming group members. *Journal of Experimental Social Psychology*, 28(4), 360-386. [https://doi.org/10.1016/0022-1031\(92\)90051-K](https://doi.org/10.1016/0022-1031(92)90051-K)
- Johnson, N. A., Cooper, R. B., & Chin, W. W. (2009). Anger and flaming in computer-mediated negotiation among strangers. *Decision Support Systems*, 46(3), 660–672. <https://doi.org/10.1016/j.dss.2008.10.008>
- Keum, B. T., & Miller, M. J. (2018). Racism on the Internet: Conceptualization and Recommendations for Research. *Psychology of Violence*, 8(6), 782-791. <http://dx.doi.org/10.1037/vio0000201>

- Kim-Ju, G. M., & Liem, R. (2003). Ethnic self-awareness as a function of ethnic group status, group composition, and ethnic identity orientation. *Cultural Diversity and Ethnic Minority Psychology, 9*(3), 289–302. <https://psycnet.apa.org/doi/10.1037/1099-9809.9.3.289>
- Kim, N., & Wojcieszak, M. (2018). Intergroup contact through online comments: Effects of direct and extended contact on outgroup attitudes. *Computers in Human Behavior, 81*, 63–72. <https://doi.org/10.1016/j.chb.2017.11.013>
- Kim, S., & Harwood, J. (2020). Facebook contact: The effect of an outgroup member's language proficiency on desire for future intergroup contact. *International Journal of Intercultural Relations, 77*, 160–168. <https://doi.org/10.1016/j.ijintrel.2020.05.007>
- Landis, D., Hope, R., & Day, H. (1984). Training for desegregation in the military. In N. Miller & M. Brewer (Eds.), *Groups in Contact: The Psychology of Desegregation* (pp. 257-278). Academic.
- Lea, M., O'Shea, T., Fung, P., & Spears, R. (1992). 'Flaming' in computer-mediated communication — observations, explanations and implications. In M. Lea (Ed.), *Contexts of Computer Mediated Communication* (pp. 89–112). Harvester-Wheatsheaf.
- Leach, C. W., Snider, N., & Iyer, A. (2002). Poisoning the consciences of the fortunate: The experience of relative advantage and support for social equality. In I. Walker & H. J. Smith (Eds.), *Relative deprivation: Specification, development, and integration* (pp. 136–163). Cambridge University Press.
- Levin, S., Sinclair, S., Sidanius, J., & Van Laar, C. (2009). Ethnic and university identities across the college years: A common in-group identity perspective. *Journal of Social Issues, 65*(2), 287-306. <https://psycnet.apa.org/doi/10.1111/j.1540-4560.2009.01601.x>

- Lev-On, A., & Lissitsa, S. (2015). Studying the coevolution of social distance, offline- and online contacts. *Computers in Human Behavior*, 48, 448–456. <https://doi.org/10.1016/j.chb.2015.02.009>
- Lissitsa, S. (2016a). Can online contacts between immigrants and veterans facilitate immigrants' social integration? *Ethnicities*, 16(3), 393–417. <https://doi.org/10.1177/1468796814547235>
- Lissitsa, S. (2017a). Online political participation, online contacts with out-groups members and social distances. *Asian Journal of Communication*, 27(1), 18–32. <https://doi.org/10.1080/01292986.2016.1257033>
- Lissitsa, S., & Kushnirovich, N. (2018). Secondary transfer effect of positive and negative online contact between groups involved in high-intensity conflict. *International Journal of Intercultural Relations*, 67, 71–80. <https://doi.org/10.1016/j.ijintrel.2018.10.001>
- Lissitsa, S., & Kushnirovich, N. (2019). Harnessing Digital Media in the Fight Against Prejudice: Social Contact and Exposure to Digital Media Solutions. *Journalism and Mass Communication Quarterly*, 96(4), 1052–1075. <https://doi.org/10.1177/1077699019837938>
- Lissitsa, S., & Kushnirovich, N. (2021). Coevolution between parasocial interaction in digital media and social contact with LGBT people. *Journal of Homosexuality*, 68(14), 2509–2532. <https://doi.org/10.1080/00918369.2020.1809891>
- Mazziotta, A., Mummendey, A., & Wright, S. C. (2011). Vicarious intergroup contact effects: Applying social cognitive theory to intergroup contact research. *Group Processes and Intergroup Relations*, 14(2), 255–274. <https://doi.org/10.1177/1368430210390533>
- McFarland, S. (1999). Is authoritarianism sufficient to explain individual differences in prejudice? *Unpublished paper delivered at the 1999 meeting of the European Association for Experimental Social Psychology*. Oxford, England.

- MacInnis, C. C., & Hodson, G. (2015). The development of online cross-group relationships among university students: Benefits of earlier (vs later) disclosure of stigmatized group membership. *Journal of Social and Personal Relationships*, 32(6), 788–809. <https://doi.org/10.1177/0265407514548394>
- Mancini, T., & Imperato, C. (2020). Can social networks make us more sensitive to social discrimination? E-contact, identity processes and perception of online sexual discrimination in a sample of Facebook users. *Social Sciences*, 9(4). <https://doi.org/10.3390/SOCSCI9040047>
- Matsick, J. L., Kim, L. M., & Kruk, M. (2020). Facebook LGBTQ Pictivism: The Effects of Women’s Rainbow Profile Filters on Sexual Prejudice and Online Belonging. *Psychology of Women Quarterly*, 44(3), 342–361. <https://doi.org/10.1177/0361684320930566>
- Maunder, R. D., White, F. A., & Verrelli, S. (2019). Modern avenues for intergroup contact: Using E-contact and intergroup emotions to reduce stigma and social distancing against people with schizophrenia. *Group Processes and Intergroup Relations*, 22(7), 947–963. <https://doi.org/10.1177/1368430218794873>
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine*, 151(4), 264–269. <https://doi.org/10.7326/0003-4819-151-4-200908180-00135>
- Morrison, E., & Herlihy, J. (1992). Becoming the best place to work: Managing diversity at American Express Travel related services. In S. Jackson (Ed.), *Diversity in the Workplace* (pp. 203-226). Guilford.
- Moscós, C., & Butler, J. (1996). *All That We Can Be*. Basic Books

- Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: an integration. *European Journal of Social Psychology*, 22(2), 103-122.
<https://doi.org/10.1002/ejsp.2420220202>
- Mustafa, H., & Poh, S. K. C. (2019). Increasing Intercultural Contact in Cyberspace: How Does it Affect the Level of Prejudice among Malaysians? *Pertanika Journal of Social Science and Humanities*, 27(1), 601–620.
- Neubaum, G., Sobieraj, S., Raasch, J., & Riese, J. (2020). Digital destigmatization: How exposure to networking profiles can reduce social stereotypes. *Computers in Human Behavior*, 112. Article 106461. <https://doi.org/10.1016/j.chb.2020.106461>
- Novak, J. A., & Rogan, P. M. (2010). Social integration in employment settings: Application of intergroup contact theory. *Intellectual and Developmental Disabilities*, 48(1), 31–51.
<https://doi.org/10.1352/1934-9556-48.1.31>
- Omarzu, J. (2000). A Disclosure Decision Model: Determining How and When Individuals Will Self-Disclose. *Personality and Social Psychology Review*, 4(2), 174-185.
https://psycnet.apa.org/doi/10.1207/S15327957PSPR0402_05
- Paluck, E. L., & Green, D. P. (2009). Prejudice reduction: what works? A review and assessment of research and practice. *Annual review of psychology*, 60, 339–367.
<https://doi.org/10.1146/annurev.psych.60.110707.163607>
- Paolini, S., Harwood, J., & Rubin, R. (2010). Negative intergroup contact makes group memberships salient: Explaining why intergroup conflict endures. *Personality and Social Psychology Bulletin*, 36(12), 1723–1738. <https://doi.org/10.1177/0146167210388667>
- Paolini, S., & McIntyre, K. (2018). Bad is stronger than good for stigmatized, but not admired outgroups: Meta-analytical tests of intergroup valence asymmetry in individual-to-group

- generalization experiments. *Personality and Social Psychology Review*, 23(1), 3–47.
<https://doi.org/10.1177/1088868317753504>
- Paolini, S., Hewstone, M., & Cairns, E. (2007). Direct and indirect friendship effects: Testing the moderating role of the affective-cognitive bases of prejudice. *Personality and Social Psychology Bulletin*, 33(10), 1406–1420. <https://doi.org/10.1177/0146167207304788>
- Park, H., Gonultas, S., Mulvey, K. L., Killen, M., & Ruck, M. D. (2019). Male Adolescents' and Young Adults' Evaluations of Interracial Exclusion in Offline and Online Settings. *Cyberpsychology Behavior and Social Networking*, 22(10), 641–647.
<https://doi.org/10.1089/cyber.2019.0102>
- Parker, J. (1968). The interaction of Negroes and whites in an integrated church setting. *Social Forces*, 46(3), 359-366. <https://doi.org/10.2307/2574883>
- Pertiwi, Y. G., Geers, A. L., & Lee, Y.-T. (2020). Rethinking intergroup contact across cultures: Predicting outgroup evaluations using different types of contact, group status, and perceived sociopolitical contexts. *Journal of Pacific Rim Psychology*, 14.
<https://doi.org/10.1017/prp.2020.9>
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin*, 23(2), 173-185. <https://doi.org/10.1177/0146167297232006>
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
<https://psycnet.apa.org/doi/10.1146/annurev.psych.49.1.65>
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751–783. <https://doi.org/10.1037/0022-3514.90.5.751>

- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38(6), 922-934. <https://doi.org/10.1002/ejsp.504>
- Pettigrew, T. F., & Tropp, L. R. (2011). *Essays in social psychology. When groups meet: The dynamics of intergroup contact*. Psychology Press.
- Pettigrew, T. F. (2021). Advancing intergroup contact theory: Comments on the issue's articles. *Journal of Social Issues*, 77(1), 258–273. <https://doi.org/10.1111/josi.12423>
- Pinel, E. C. (1999). Stigma consciousness: The psychological legacy of social stereotypes. *Journal of Personality and Social Psychology*, 76(1), 114–128. <https://psycnet.apa.org/doi/10.1037/0022-3514.76.1.114>
- Plant, E. A. (2004). Responses to interracial interactions over time. *Personality and Social Psychology Bulletin*, 30(11), 1458–1471. <https://doi.org/10.1177/0146167204264244>
- Plant, E. A., & Devine, P. G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology Bulletin*, 29(6), 790–801. <https://doi.org/10.1177/0146167203029006011>
- Pratto, F. (1999). The puzzle of continuing group inequality: Piecing together psychological, social, and cultural forces in social dominance theory. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 191-263). University Press.
- Reimer, N. K., & Sengupta, N. K. (2023). Meta-analysis of the “ironic” effects of intergroup contact. *Journal of Personality and Social Psychology*, 124(2), 362–380. <https://doi.org/10.1037/pspi0000404>
- Riordan, C., & Ruggiero, J. (1980). Producing equal-status interracial interaction: a replication. *Social Psychology Quarterly*, 43(1), 131-136. <https://www.jstor.org/stable/3033757>

- Robinson, J. W., & Preston, J. D. (1976). Equal status contact and modification of racial prejudice: A reexamination of the contact hypothesis. *Social Forces*, 54(4), 911–924. <https://doi.org/10.1093/sf/54.4.911>
- Rodriguez-Rivas, M. E., Cangas, A. J., & Fuentes-Olavarria, D. (2021). Controlled Study of the Impact of a Virtual Program to Reduce Stigma Among University Students Toward People With Mental Disorders. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsy.2021.632252>
- Römpke, A. K., Fritsche, I., & Reese, G. (2019). Get together, feel together, act together: International personal contact increases identification with humanity and global collective action. *Journal of Theoretical Social Psychology*, 3(1), 35-48. <https://doi.org/10.1002/jts5.34>
- Rothbart, M., & John, O. (1985). Social categorization and behavioral episodes: a cognitive analysis of the effects of intergroup contact. *Journal of Social Issues*, 41(3), 81-104. <https://doi.org/10.1111/j.1540-4560.1985.tb01130.x>
- Saguy, T., Tropp, L., & Hawi, D. (2013). The role of group power in intergroup contact. In G. Hodson & M. Hewstone (Eds.), *Advances in Intergroup Contact* (pp. 113-131). Psychology Press.
- Schouten, A., Valkenburg, P., & Peter, J. (2009). An Experimental Test of Processes Underlying Self-Disclosure in Computer-Mediated Communication. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 3(2), Article 3. https://pure.uva.nl/ws/files/773355/89264_323347.pdf
- Schumann, S., Klein, O., Douglas, K., & Hewstone, M. (2017). When is computer-mediated intergroup contact most promising? Examining the effect of out-group members' anonymity on prejudice. *Computers in Human Behavior*, 77, 198–210. <https://doi.org/10.1016/j.chb.2017.08.006>

- Schwab, A. K., & Greitemeyer, T. (2015a). Failing to establish evaluative conditioning effects for indirect intergroup contact on Facebook. *Basic and Applied Social Psychology*, 37(2), 87–104. <https://doi.org/10.1080/01973533.2014.999073>
- Schwab, A. K., & Greitemeyer, T. (2015b). The world's biggest salad bowl: Facebook connecting cultures. *Journal of Applied Social Psychology*, 45(4), 243–252. <https://doi.org/10.1111/jasp.12291>
- Schwab, A. K., Sagioglou, C., & Greitemeyer, T. (2019). Getting connected: Intergroup contact on Facebook. *The Journal of Social Psychology*, 159(3), 344–348. <https://doi.org/10.1080/00224545.2018.1489367>
- Shelton, J. N. (2003). Interpersonal concerns in social encounters between minority and majority group members. *Group Processes and Intergroup Relations*, 6(2), 171–185. <https://psycnet.apa.org/doi/10.1177/1368430203006002003>
- Sherif, M. (1966). *In Common Predicament*. Houghton Mifflin.
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. Cambridge University Press.
- Staples, D. S., & Zhao, L. (2006). The effects of cultural diversity in virtual teams versus face-to-face teams. *Group Decision and Negotiation*, 15(4), 389 – 406. <http://dx.doi.org/10.1007/s10726-006-9042-x>
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41(3), 157–175. <https://doi.org/10.1111/j.1540-4560.1985.tb01134.x>
- Stiff, C., & Kedra, P. (2020). Playing well with others: The role of opponent and intergroup anxiety in the reduction of prejudice through collaborative video game play. *Psychology of Popular Media*, 9(1), 105-115. <https://psycnet.apa.org/doi/10.1037/ppm0000210>

- Stouffer, S. A., Suchman, E. A., DeVinney, L. C., Starr, S. A., & Williams, R. M. (1949). *The American soldier*. Princeton University Press.
- Sumner, W. G. (1906). *Folkways*. Ginn
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Brooks/Cole Publishing Company.
- Tam, T., Hewstone, M., Harwood, J., Voci, A., & Kenworthy, J. (2006). Intergroup Contact and Grandparent–Grandchild Communication: The Effects of Self-Disclosure on Implicit and Explicit Biases Against Older People. *Group Processes & Intergroup Relations*, 9(3), 423-429. <https://psycnet.apa.org/doi/10.1177/1368430206064642>
- Taniguchi, E., & Glowacki, E. M. (2021). Reactions to depression disclosure on Facebook: Evaluating the effects of self-presentation style and peer comments. *Stigma and Health*. <https://doi.org/10.1037/sah0000309>
- Tavakoli, M., Hatami, J., & Thorngate, W. (2010). Changing Stereotypes in Iran and Canada Using Computer Mediated Communication. *Journal of Intercultural Communication*, 23(5), 1-15.
- Tippin, G. K., & Maranzan, K. A. (2019). Efficacy of a Photovoice-based video as an online mental illness anti-stigma intervention and the role of empathy in audience response: A randomized controlled trial. *Journal of Applied Social Psychology*, 49(6), 381–394. <https://doi.org/10.1111/jasp.12590>
- Tropp, L. R. (2006). Stigma and Intergroup Contact Among Members of Minority and Majority Status Groups. In S. Levin & C. van Laar (Eds.), *Stigma and group inequality: Social psychological perspectives* (pp. 171–191). Lawrence Erlbaum Associates Publishers.

- Tropp, L. R. (2008). The role of trust in intergroup contact: Its significance and implications for improving relations between groups. In U. Wagner, L. R. Tropp, G. Finchilescu & C. Tredoux, (Eds.), *Improving intergroup relations: Building on the legacy of Thomas F. Pettigrew* (pp. 91–106). Wiley-Blackwell.
- Tropp, L. R., & Bianchi, R. A. (2006). Valuing diversity and interest in intergroup contact. *Journal of Social Issues*, 62(3), 533-551. <https://doi.org/10.1111/j.1540-4560.2006.00472.x>
- Tropp, L. R., & Pettigrew, T. F. (2005). Relationships between intergroup contact and prejudice among minority and majority status groups. *Psychological science*, 16(12), 951-957. <https://www.jstor.org/stable/40064363>
- Turner, R. N., Crisp, R. J., & Lambert, E. (2007). Imagining intergroup contact can improve intergroup attitudes. *Group Processes and Intergroup Relations*, 10(4), 427–441. <https://psycnet.apa.org/doi/10.1177/1368430207081533>
- Tynes, B. M., Giang, M. T., & Thompson, G. N. (2008). Ethnic identity, intergroup contact, and outgroup orientation among diverse groups of adolescents on the Internet. *Cyberpsychology & Behavior*, 11(4), 459–465. <https://doi.org/10.1089/cpb.2007.0085>
- Tynes, B. M., Rose, C. A., & Markoe, S. L. (2013). Extending campus life to the Internet: Social media, discrimination, and perceptions of racial climate. *Journal of Diversity in Higher Education*, 6(2), 102–114. <https://doi.org/10.1037/a0033267>
- Vescio, T., Sechrist, G., & Paolucci, M. (2003). Perspective taking and prejudice reduction: The mediational role of empathy arousal and situational attribution. *European Journal of Social Psychology*, 33(4), 455-472. <https://doi.org/10.1002/ejsp.163>
- Vezzali, L., & Capozza, D. (2011). Reducing explicit and implicit prejudice toward disabled colleagues: Effects of contact and membership salience in the workplace. *Life Span and Disability*, 14(2), 139–162.

- Vezzali, L., Hewstone, M., Capozza, D., Giovannini, D., & Wölfer, R. (2014). Improving intergroup relations with extended and vicarious forms of indirect contact. *European Review of Social Psychology*, 25(1), 314–389. <https://doi.org/10.1080/10463283.2014.982948>
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6(1), 37-54. <https://psycnet.apa.org/doi/10.1177/1368430203006001011>
- Voelkel, J. G., Ren, D. N., & Brandt, M. J. (2021). Inclusion reduces political prejudice. *Journal of Experimental Social Psychology*, 95, Article 104149. <https://doi.org/10.1016/j.jesp.2021.104149>
- Vorauer, J. D., Main, K. J., & O'Connell, G. B. (1998). How do individuals expect to be viewed by members of lower status groups? Content and implications of meta-stereotypes. *Journal of Personality and Social Psychology*, 75(4), 917–937. <https://psycnet.apa.org/doi/10.1037/0022-3514.75.4.917>
- Walther, J. B., & Carr, C. T. (2010). Internet interaction and intergroup dynamics. In H. Giles, S. Reid & J. Harwood (Eds.), *The dynamics of intergroup communication* (pp. 209 – 220). Peter Lang.
- Walther, J. B., Hoter, E., Ganayem, A., & Shonfeld, M. (2015). Computer-mediated communication and the reduction of prejudice: A controlled longitudinal field experiment among Jews and Arabs in Israel. *Computers in Human Behavior*, 52, 550–558. <https://doi.org/10.1016/j.chb.2014.08.004>
- White, F. A., Borinca, I., Vezzali, L., Reynolds, K. J., Lyshol, J. K. B., Verrelli, S., & Falomir-Pichastor, J. M. (2021). *Beyond direct contact: The theoretical and societal relevance of*

- indirect contact for improving intergroup relations. *Journal of Social Issues*, 77(1), 132–153. <https://doi.org/10.1111/josi.12400>
- White, F. A., Harvey, L. J., & Abu-Rayya, H. M. (2015). Improving intergroup relations in the Internet age: A critical review. *Review of General Psychology*, 19(2), 129-139. <http://dx.doi.org/10.1037/gpr0000036>
- White, F., & Abu-Rayya, H. (2012). A dual-identity-electronic contact (DIEC) experiment promoting short- and long-term intergroup harmony. *Journal of Experimental Social Psychology*, 48(3), 597-608. <https://doi.org/10.1016/j.jesp.2012.01.007>
- White, F., Abu-Rayya, H., & Weitzel, C. (2014). Achieving twelve-months of intergroup bias reduction: The dual identity-electronic contact (DIEC) experiment. *International Journal of Intercultural Relations*, 38, 158-163. <https://doi.org/10.1016/j.ijintrel.2013.08.002>
- White, F. A., Abu-Rayya, H. M., Bliuc, A.-M., & Faulkner, N. (2015). Emotion expression and intergroup bias reduction between muslims and christians: *Long-term internet contact*. *Computers in Human Behavior*, 53, 435–442. <https://doi.org/10.1016/j.chb.2015.04.074>
- White, F., Turner, R., Verrelli, S., Harvey, L., & Hanna, J. (2019a). Improving intergroup relations between Catholics and Protestants in Northern Ireland via E-contact. *European Journal of Social Psychology*, 49(2), 429-438. <https://doi.org/10.1002/ejsp.2515>
- White, F., Verrelli, S., Maunder, R., & Kervinen, A. (2019b). Using electronic contact to reduce homonegative attitudes, emotions, and behavioral intentions among heterosexual women and men: A contemporary extension of the contact hypothesis. *The Journal of Sex research*, 56(9), 1179-1191. <https://doi.org/10.1080/00224499.2018.1491943>
- White, F., Maunder, R., & Verrelli, S. (2020). Text-based E-contact: Harnessing cooperative Internet interactions to bridge the social and psychological divide. *European Review of Social Psychology*, 31(1), 76-119. <https://doi.org/10.1080/10463283.2020.1753459>

- Williams, R. M. (1947). *The reduction of intergroup tensions*. Social Science Research Council
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of crossgroup friendships and prejudice. *Journal of Personality and Social Psychology*, 73(1), 73–90. <https://doi.org/10.1037/0022-3514.73.1.73>
- Wu, Y., Mou, I., Wang, Y., & Atkin, D. (2017). Exploring the de-stigmatizing effect of social media on homosexuality in China: an interpersonal-mediated contact versus parasocial-mediated contact perspective. *Asian Journal of Communication*, 28(1), 20-37. <http://dx.doi.org/10.1080/01292986.2017.1324500>
- Young, A. (2014). Western Theory, Global World: Western Bias in International Theory. *Harvard International Review*, 36(1), 29-31. <https://www.jstor.org/stable/43649244>
- Žeželj, I. L., Ioannou, M., Franc, R., Psaltis, C., & Martinovic, B. (2017). The role of inter-ethnic online friendships in prejudice reduction in post-conflict societies: Evidence from Serbia, Croatia and Cyprus. *Computers In Human Behavior*, 76, 386–395. <https://doi.org/10.1016/j.chb.2017.07.041>
- Zhou, S., Page-Gould, E., Aron, A., Moyer, A., & Hewstone, M. (2019). The extended contact hypothesis: A metaanalysis on 20 years of research. *Personality and Social Psychology Review*, 23(2), 132–160. <https://doi.org/10.1177/1088868318762647>

Footnotes

¹ Although *race* and *ethnicity* can be considered as interrelated yet distinct concepts in research on intergroup relations (e.g., Rye et al., 2023), in this work they are used as synonyms. This choice is motivated by the criterion of maintaining coherence with their use within the cited articles. Therefore, if the term *race/ethnicity* is used in an article, the same term is retained when citing that article.

² The screening process was entirely double-blind. It was carried out by the PhD candidate and a second member of the research team.

³ For exploratory purposes, we also tested the moderation effect of sexual orientation and Allport's conditions in the relation between online contact quantity and the two investigated intergroup outcomes: intergroup attitudes and outgroup trust. When intergroup attitude was tested as dependent variable, all the three-way interactions between contact quantity, sexual orientation, and Allport's conditions were not significant ($ps \geq .07$). When outgroup trust was tested as dependent variable, we found a significant three-way interaction between contact quantity, sexual orientation, and cooperation ($p = .02$): the association between contact quantity and outgroup trust resulted significant only for homosexual participants, and only when they reported higher perception of cooperation ($p = .002$), but not lower ($p = .31$). We found the same pattern for authority support ($p = .04$): the association between contact quantity and outgroup trust resulted significant only for homosexual participants, and only when they reported higher perception of authority support ($p = .01$), but not lower ($p = .79$). Finally, the three-way interaction between contact quantity, sexual orientation, and common goals, equal status, and the composite score of the Allport's conditions was not significant ($ps \geq .06$). It is important to note that in none of the models tested the direct effect of the contact quantity on the dependent variables resulted significant ($ps \geq .13$).

Acknowledgements

At the end of this journey, I would like to thank the people who, thanks to their intellectual, professional, and personal contributions, made this thesis work possible.

Thanks to my supervisor, Elena Trifiletti, who followed every aspect of my research and journey. Thanks to your thousand ideas, these three years have been full of meaningful experiences, and I am sure that I will remember everything you have taught me long beyond the conclusion of this project. Thanks to my supervisor, Inga Jasinskaja-Lahti, who contributed to the construction of the studies and the data analyses and introduced me to a different way of working. You have been a point of reference for me, and I like to think I can call you whenever I want to ask you for advice. Thanks to Professor Fiona White for inspiring this research project and for making available to me and my research group not only useful materials but also food for thought, enthusiasm for research, and expertise. Thanks to my dear colleague Soraya Elizabeth Shamloo, who has always been by my side in my work, making every activity, even the most challenging and boring, beautiful and fun. I hope you will never lose this feature and will be able to share it with many other people. Thanks to my dear colleague Mahshid Esmaeilikolahdooz, who, on this journey, was like a sister and taught me to always see the side of beauty in every person and everything. Thanks to my dear colleague Matilde Tassinari, who made her expertise available for one of my studies and who, together with Viivi Mäkinen and Viivi Eskelinen, was a wonderful traveling companion during my piece of life in Finland. Thanks to Flavio Faccini for developing the software for the experimental study. Working with you has allowed me to gain concrete experience of your competence and intelligence, which I hope to achieve one day through my work. Thanks to Federico Andreoli, who developed the chat for the experimental study and followed the entire development part with enthusiasm, patience, and kindness.

I was honoured to learn something from each of you.