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Elisabeth Rieken
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Ulrich Geupel und Theresa Maria Roth

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Towards a study of the Luwian syntax: Methodology and a preliminary case-study

Paola Cotticelli-Kurras and Federico Giusfredi

Abstract: The present paper is part of the project SLUW, “A computer-aided study of the Luwian (morpho)-syntax”, that received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 655954, and is carried out at the University of Verona, Italy, from June 2015 to May 2017 and consisting of a study of the syntax of the Luwian language based on the phrase-structure annotation of a selection of sentences from the Luwian corpora (both cuneiform and hieroglyphic). We will discuss the methodology employed and present a short case study dedicated to the fronting of Luwian verbs.

1 Introduction

In order to explain in this context the aim of a formal study of the Luwian (morpho)-syntax, we’ll start by illustrating the path of the linguistic theoretical and methodological reflection from the beginnings of Hittitology to present times.¹ This short overview starts from the typical paradigmatic approach of the studies carried out before the Second World War, in order to arrive at the syntagmatic systematization through the syntactical theories of the 1960s and the computational modelling of the language phenomena. The influence of Turing 1936 played a crucial role in the development of the formal language and served as a foundation for the concept of recursive functions in syntactical studies. The conceptual model by Turing anticipated some of the principles of the generative grammar(s) because the different types of Turing machines model specific rewriting systems producing recursively numerable sets of strings that can be compared to sentences or word chains.² This mathematical formalism has been one of the bases of the formal theoretical analysis of the syntactic structures performed by Chomsky (1957).

2 Syntax and Ancient Indo-European

Meanwhile, Indo-European syntax was also becoming an important topic in the field of historical linguistics. If we consider the syntactic level of analyzed units within the paradigmatic approach we will find analytical studies on the word order and on the function of cases, morphological units and phrases. Already Delbrück (1878, 1893–1900: III, 267) has dealt with the word order of the major constituents of the sentence and distinguished a traditional word order from the (marked) occasional one produced by moving the verb to the beginning of the sentence (cf. Vai 2015). The interest in the Indo-European clause-structure became increasingly important also within Anatolian studies, despite Delbrück’s and Hermann’s 1893 conclusion that Proto-Indo-European didn’t have subordination. It is also important to observe that Paul (1920: 147ff.) on the contrary had attempted to determine some formal parameters for distinguishing parataxis from hypotaxis. In the years from the 1950s to the

¹ Sections 1, 2 and 3 by P. Cotticelli-Kurras, Sections 4, 5, 6 and 7 by F. Giusfredi.

² See Cotticelli-Kurras 2007: 495f. and Bußmann 1996: 499.

1970s quite a few publications appeared about the Hittite hypotactic constructions: the relative sentences by Held (1957), Berman (1972) and Raman (1973); the temporal and conditional ones by Sternemann (1963) and the studies by Kammenhuber (1954, 1955 and 1956) about the verbal nouns and the infinitive system and indirectly their value as argumental or embedded sentences in Hittite. The main approach in the Indo-European studies was a morpho-syntactic and functional one though Watkins laid the foundations of a methodological reconstruction of the PIE syntax, moving from the studies and the historical and comparative analysis of the syntax of the Old Irish verb (1963) up to discussion about some problem in the reconstruction of the PIE sentence structure (1964). These works do not follow a theoretical syntactic framework and thus philological, morphological and syntactic analyses, along with increased language-data, became numerous, but they were almost always descriptive (cf. in general Gippert 2004; Hock 2015; and Krisch 1998, 2002 and 2009, for recent critical overviews and discussions).

Through the syntactical and reconstructive approach of some scholars (along with their schools) – e. g. in Europe with Carruba in Pavia, and in the US with Watkins in Harvard and at the UCLA and Stefanini in Berkeley – it became possible to deepen the syntactical assessment of the Hittite texts and to underline the role of the Anatolian languages in the reconstruction.

Of the two leading fields of research that dominated the linguistic studies during the 1960s, the typological and the formal/minimalist, in the 1970s it was the former that more intensively influenced the study of the Anatolian clause structure as it appeared to be very suitable for describing the rather systematic SOV word order in the Hittite and Luwian clauses. Under this framework, Lehmann (1974) and Friedrich (1975) moved the focus to the syntax and the syntactical reconstruction of the I.E. Proto-Language, mostly concentrating their attention on the sentence architecture of the Anatolian languages, as opposed to the former models that considered the evidence of the Greek and Indo-Aryan languages to be the only relevant material.

Lehmann (1974) pointed out how some important contributions on individual topics since the 19th century (the last one being Brugmann's *Die Syntax des einfachen Satzes im Indogermanischen*), constituted an excellent basis for a "comprehensive treatment of PIE syntax", as he wrote in the introduction to his work (p. 4). Hirt, in his *Handbuch des Urgermanischen* was cautious towards the syntactic evidence: "One assembles a series of facts but doesn't know what do with them" ("Man stellt eine Reihe von Tatsachen zusammen, man weiß aber nichts damit anzufangen", Hirt 1931–34: Bd. III, vii).³ Starting with Lehmann's work, new methods have been used in the treatment of the IE syntax derived from the syntactic framework of the typological studies, in order to explain the available data. For our account, it is important that Brugmann (1925: 1) put at the centre of the syntactical reflection the "sentence" as a "unit", and no longer the morphemes or the classes of words, as a legacy of the theoretical discussions of the previous century. Furthermore we have to take into consideration that another contribution to the definition of the concept of "sentence" was provided by Paul (1920: 121) in his *Prinzipien der Sprachgeschichte*: "The sentence is the linguistic expression, the symbol for the fact that the union of several concepts or groups of concepts has been completed in the mind of the speaker, and the means for arousing the same union of the same concepts in the mind of the hearer". In this sense Lehmann saw a parallel between Paul's statement and the view of the generative grammar, because the "elements of the lexicon as well as the grammatical rules are abstract constituents. Each of these elements

3 Translation by Lehmann, quoted from Lehmann 1974: 4.

conveys meaning as do combinations of them”.⁴ In a sentence, lexical and syntactic features are combined in various patterns to produce different meanings. To give an explanation of the sentence structure we need to identify rules that model the phrase-structure and the ways the linear clause is derived, and determine the grammatical form in order to give, along with the lexical entries, the meaning of the entire sentence. These rules, under given frameworks, are assumed to be universal.

Both the rules that describe the logical form of the clause and the transformational ones that explain the linearized clause play a role in explaining phenomena such as topicalization, complementation, deletion, agreement, relativization, relative-clause reduction and moving of elements (e. g. negative qualifier). Finally, the phonological and prosodic rules come into play, producing the final sentence. These short theoretical formulations can form the basis of a modern discussion on the reconstruction of the I.E. syntax, founded on structural rules and on the attempt, where possible, to reconstruct hypothetical models of competence starting from the textual data we possess (as was already done, using a different metalanguage, by Schleicher or Brugmann, and only in part in the studies of Watkins).

Thus, when facing the problem of the syntactic study of Anatolian and of a syntactic assessment of Indo-European we share the position of Kulikov and Lavidas, who are more optimistic than the aforementioned Hirt and write:

Although for some scholars the very possibility of syntactic reconstruction remains dubious, numerous studies have appeared reconstructing a variety of basic elements of Proto-Indo-European syntax based on evidence available particularly from ancient and/or archaic Indo-European languages. Such aspects of the proto-language as ergative/active alignment, basic word order and subject and object marking have given rise to lively discussions among Indo-Europeanists, typologists and syntacticians. Furthermore, the possibility of an efficient lexically blind system of syntactic comparison, the parametric comparison method, was first suggested in Longobardi (2003), Guardiano & Longobardi (2005).

(Kulikov and Lavidas 2015: 1)

In general, as we have seen, the studies moving towards a Proto-Indo-European syntactic reconstruction gave an important contribution to the linguistic analysis long before the problem of theoretical formalism entered the field of historical linguistics. However, as Andrej Sideltsev pointed out with the title of his presentation in this conference (“Hittite syntax and modern linguistic theory: Two kinds of NPIs in Hittite”), in the 100 years since Bedřich Hrozný inaugurated the tradition of Hittitology, the panorama of linguistic studies has changed and it is certainly time to investigate the possibility of extending the theoretical formal models of syntax to the study of Anatolian as well.

3 The study of Anatolian syntax

A description of the Anatolian syntactic structure based on tree-like representations combines three levels of structural analysis with a bottom-up theoretical approach that accounts for the general discoveries regarding Indo-European syntax. These levels are:

1. The phrase level, in which words and phrases are nested into new phrases, producing a logical structure that will be linearized in spell-out.

⁴ Translation by Lehmann, quoted from Lehmann 1974: 9.

2. The sentence level, in which complete nested phrases are combined into a clause.
3. The inter-phrasal level that rules the combination of sentences in order to produce discourse.

Structural representations should, however, take into consideration the results of the previous studies on the morpho-syntactic, informational and semantic patterns of the Anatolian clause. Even though the study of the syntax of the Ancient Anatolian languages – and, more specifically, of Hittite and Luwian, as the other idioms of the family are definitely underrepresented in the documentation – has hardly emerged as an autonomous field of investigation. However, recently more and more scholars are paying increasing attention to specific problems of Anatolian syntax. We will now sketch a short overview on the literature dedicated to the syntactic description of Anatolian.

3.1 Previous studies on Hittite syntax

While the definition of a generalized syntactic formalism has only recently become a relevant problem for scholars in Anatolian, syntax in a broader sense has always been part of grammatical description. In particular, the unmarked word order of Hittite was described as SOV already in the first studies on Hittite Grammar, and the specific field of morphosyntax, by which we tentatively indicate the study of the syntactic behaviour or morphological structures, has attracted the attention of Hittitologists in the last decades. The aberrant behaviour of clitics (Garrett 1990, 1996) and neuter nouns (Patri 2007; Goedegebuure 2012) were extensively investigated, casting light on the possible presence of (residual or innovative?) ergative traits in Anatolian. The formally or positionally peculiar types of agreement in the Hittite noun phrases have also been assessed, from the long-known use of post-nominal genitives of measure to the more recent discovery of specific patterns of number agreement for quantified nouns (Rizza 2012; Rieken 2013). Verbal morphosyntax regards problems such as valency, verbal assignment of case, and the relationship between arguments and adverbial modifiers (that in Hittite include, for instance, the highly complex sentence particle *-za*⁵) and therefore it is strongly related to the lexical problem of the genesis of the idiomatic constructions. A complete review of the literature would be impossible to make in the limited space of this paper.

The works on phrasal and interphrasal syntax, on the other hand, are more recent. Papers assessing selected features of the Hittite syntactic and clausal architecture have been authored, most notably by Rizza (2011), Bauer (2011) and Sideltsev (2014), while the problem of the strategies for relativization in Hittite that was originally assessed by Garrett (1994) has been newly challenged by Huggard (2011, 2015), and Yates (2014). The configurational pattern of the clitic chain in Hittite (i. e. the rules governing the positions of the clitics⁶), already investigated by the pioneers of Hittitology, has received new attention by Widmer (2009), while Luraghi and Inglese (in this volume) have moved Luraghi's 1990 diachronic and functional examination of connectives and interphrasal syntax further. Specific studies have also been dedicated to the strategy for subordination in Anatolian that appears to be different, and probably less developed, than in other languages of the Indo-European group (Cotticelli-Kurras 1992, 2001 and 2017; Lühr 2001; Zeilfelder 2001 and 2002; Gippert 2004).

All of these issues belong to specific fields of syntactic analysis. Moving to the larger picture, however, the different assessments are difficult to combine in more general theories

5 For an overview on the many functions of Hittite *-za*, cf. Hoffner and Melchert 2008: 357–363.

6 Further on the Hittite non-argumental clitics, e. g. the so called local particles, cf. Carruba 1969; Josephson 1972; Boley 1989; Luraghi 1990 and 2001.

as most of the linguists that have examined syntactic problems of Anatolian work with different frameworks, or with mixed metalanguages aimed at fitting linguistic categories into the traditions of the Anatolian Studies. Thus, Rizza (2011) works with a ‘soft’ cartographic approach, which is partly shared by Sideltsev (e. g. 2014) who defends a minimalist position.⁷ A similar research, with comparable results, was carried out by Bauer (2011), who seems to favour, at least in part and through all her works on Anatolian syntax and morphosyntax, a framework that evaluates syntax privileging concepts such as topic, focus, salience and contrastivity. These functional and informational concepts appear to be applied to words rather than phrases, which marks a non-trivial difference in the metalanguage of reference. The emphasis on semantic prominence and referentiality is typical of Goedegebuure’s approach to the analysis of *deictics* as well as to the study of nominal elements and phrases (Goedegebuure 2002–2003, 2009a, 2009b, 2012 and 2014).

The refined cartographic model adopted by Huggard (2015) in his recent dissertation, featuring an antisymmetric phase-based cartographic X-bar modelling for explaining the position of *wh*-elements in Hittite, deserves to be mentioned separately. To date, it is probably the most consistent attempt to employ a complete cartographic description of the syntactic structure of Hittite (except for the layers within the Verbal Phrase, or, more precisely, the vP^8). His mapping of the left periphery of the Hittite clause (with sentence-initial *nu* as a head on the so-called ForceP level, followed by clitics and by a sequence of TopP*, FocP*, TopP* and by the slot where complementizers are merged) strongly relies on Rizzi’s program (Rizzi 2004); and thus, implicitly, bases the assessment of Anatolian on the clause-architecture of English and Romance languages. On this refined, although possibly debatable, cartographic model, however, he bases a highly documented study of the semantic-syntactic-phonological interface.

3.2 Syntax and Information

Put simply, and possibly even oversimplifying a little, the viable approaches to the study of syntax range from cartographic ones, in which all phenomena of ordering and arranging elements in the linear clause (and sentence) are to be explained in terms of a rigid structure involving movements (every position is initially labelled as a phrase, with a strong degree of universality), to the ones that consider the whole linear structure of the clause to be mostly an expression of informational trajectories, with constraints being arbitrary products of language-specific grammatical rules. In order to support the idea that the syntactic and informational patterns are ultimately the same type of realization of the same order of phenomena it is necessary to assume that either the dependency on structure already includes the strategies for topicalization, focusing, contrasting and possibly extrapolation, or that there is no structural constraint in the linearization of grammatical strings within a language beyond the ones dictated by focal processes, deixis, anaphora and (co-)referentiality. Reasoning in terms of complementary, possible and impossible distribution of patterns, however, it seems clear to me that violating logical structure and merging rules produces ungrammatical sentences, while applying topicalizations and focuses produces a set of grammatical sentences with different informational patterns. From this perspective, the equiparation of the informational level and the syntactic-structural is far from being proved, to the point that phrase-structure models exist that refuse the inclusion of dedicated informational nodes. On the other hand, assuming the opposite – that referentiality and information flow exhaust the range of or-

7 On the Minimalist Program cf. Chomsky 1995 and 2000.

8 Cf. Huggard 2015: 14, with reference to the previous literature.

dering and configurational phenomena in a language – fails to explain why some patterns are impossible in given languages. This point can be trivially solved by highlighting the strict logical relationship between the same “modifiers” and the elements they refer to, but constraints are both language-specific and construction-specific and can only be explained by phrasal hierarchies (e. g. how do we distinguish adverbials, adjuncts and complements without syntactic hierarchies?).

Keeping the levels of informational markedness and the level of structural configuration separate *does not mean denying that both levels regard the general syntax of a language*. It simply means that the type of relative and absolute positional constraints that produce an unmarked linearization do not necessarily belong to the same set of operations and do not necessarily obey the same distributional rules as the movements and alterations that function at the level of information flow.

3.3 *Luwian Syntax*

Moving on to the specific problem of the syntactic analysis of Luwian, apart from specific contributions on the problems of alignment and clitic patterns (e. g. Melchert 2011 on the syntactic alignment of clitic pronouns; Rieken 2006 and Yakubovich 2010 on the clitic patterns of Luwian and their possible areal influence on Hittite), the only extensive study published so far regards the morpho-syntax of the noun phrase in the Iron Age hieroglyphic documents (Bauer 2014; cf. also the review by Giusfredi 2015). Bauer’s analysis, which is based on an extensive corpus, is limited in its scope by the choice of only studying the *internal* structure of Luwian NPs. In this perspective, once again the choice of a non-hierarchical, informationally-oriented framework prevents an exhaustive assessment of phenomena of co-dependency of local alterations and hierarchically higher ones, such as argument frontings on the clause-level.

4 **The application of syntactic formalism to text-languages**

4.1 *Configuration*

Before entering into the details of how the syntactic hierarchies of the Luwian clauses and sentences should be analyzed and represented, it is necessary to address a preliminary point. Is the syntactic structure of a text-language (a language that is only attested in a written corpus) to be represented at all? For decades, ever since the beginning of the American structuralist study of the phrase-structure grammars, doubts have been cast on the notion of the universality of the syntactic structure of languages. A large part of these doubts regard a complex and sometimes ill-defined concept which usually goes under the label “configurationality”. Generally speaking, the idea of configurationality in a broad sense means that some sort of dependency on syntactic structure governs the nature and order of the application of the production rules of human languages. Still, different frameworks give it different specific meanings. In cartography, configuration should obey a highly articulated phase-theory and a universal clause architecture that controls every step of syntactic production. In other frameworks configuration is less strict and for some languages it may even be absent. Nevertheless, even if the syntactic universals are reduced to the reflection of the logical rules of language production, it is hard to conceive a syntactical analysis that does not recognize the existence of phrasal hierarchies.

4.2 Text-languages

In the grammars that assume the existence of universal clause architectures, phrases seem to correspond to fixed nodes on an empty universal tree, to be filled by functional or lexical elements when a specific linguistic act takes place. This kind of assumption, however, risks doing more harm than good when applied to the formal study of the syntax of an ancient text-language: a field of investigation that offers no chance for the experimental validation of the competence of the speakers is simply not the right field to assess the universality of the logical syntactic structures of the human languages: how do we know whether a position that is unattested is actually ungrammatical? And if we cannot know that, how can we produce a cartography of core and peripheral structures? Therefore, while taking into consideration the phrasal hierarchies of the ancient languages is important, it seems wiser to examine and assess only those elements of syntax that are actually visible in the texts – nominal and verbal phrases, appositional phrases, adverbial and adjectival modifiers and clitic nodes (which, as implied by Huggard (2015: 24ff.), we consider to be realized in a specific position for prosodic reasons). As long as it is not possible to evaluate the competence of the speakers of a language, phrase-slots dedicated to such concepts that are dear to the cartographic approach to syntax – e. g. illocutive force and finiteness – and their formal relationship to information structure can, at best, only be speculated on.

5 Phrase structure, dependency grammars and text-languages

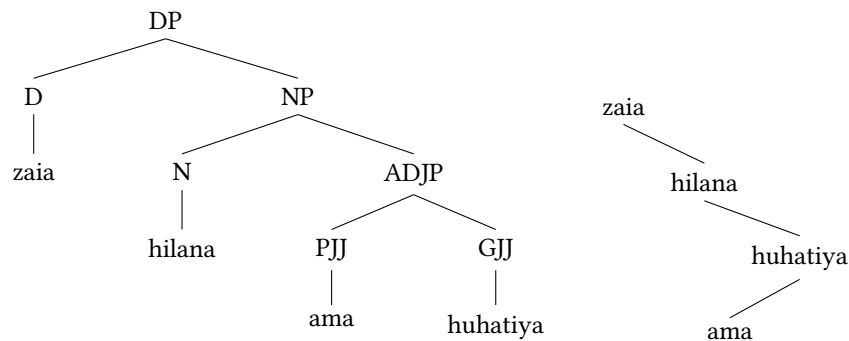
A phrase-structure syntax is, generally speaking, similar to an algebraic structure. It consists of elements (that belong to a set), and operations. The operations may be binary or n -ary, and they apparently combine elements (or proper subsets) from the set into other elements (proper subsets) belonging again to the set. The elements of the domain-set of syntactic operations are called “phrases”. From this perspective it is possible to extend the notion of phrase to single words, depending on their behaviour under a constituency test. As long as the attitude remains descriptive, this is merely a matter of terminology.

However, the operation that produces phrases from phrases (or from words) can also be seen as a simple relationship linking one word to another. This kind of perspective, which leads to the so-called “dependency grammars”,⁹ may appear unsatisfactory because it gives up the notion of syntactic hierarchy, unless dependencies are designed in a way that guarantees a proper hierarchic nesting. If the hierarchic compositional features of the clause-elements is respected, and if no cases exist in which the partial order of phrase-composition is neglected or misrepresented, dependency grammars have been shown to be weakly equivalent to phrase-structure notations: therefore, the choice of representing a given clause by means of dependency relations or phrasal hierarchies can be seen as merely conventional. The two tree-like representations of (1) in the figures on p. 30 are theoretically equivalent to each other (even though labels and non-terminal nodes from the phrase-structure representation do get lost in the dependency representation).¹⁰

- (1) *zaia ... hilana ama huhatiya*
 ‘These ... gates of my grandfather.’ (KARKAMIŠ A11a, §13)

⁹ A rich tradition of studies is going back to the valency-oriented syntactic theories of Tesnière (1943, 1953 and 1959). Recently, dependency grammars are becoming predominant in the field of applied computational linguistics.

¹⁰ The notation used in the simplified phrase structure tree is theory-free and merely conventional: DP = Demonstrative Phrase, NP = Noun Phrase, N = Noun, ADJP = Adjectival Phrase, PJJ = Possessive Adjective, GJJ = Genitival Adjective.



An advantage that phrase-structure representations offer to the analysis and description of syntactic constructions is the fact that hierarchies are immediately visible, and therefore it is simpler to identify phenomena that belong to the word level, to the phrase level, to the clause level and to the inter-phrasal level respectively. Intuitively, the word level contains words that are hierarchically merged into phrases and that can in due turn be merged into new phrases on the phrase-level. The clause-level is the one that produces the final merge of a clause that can be a main one or a subordinated one. This kind of hierarchic representation is useful when informational patterns come into play. Indeed, the informational alteration of the order of constituents and words acts on the different levels of the syntactic organization of the clause.

Furthermore, in some cases the informational structure of a clause will interact with the interphrasal structure of a longer period of which the clause is part. A good example is represented by the case of the so-called Anatolian interphrasal connectives. They are left-located as, in our opinion, they occupy an obligatory topic slot in the periphery, and do not occur discourse initially or in other cases in which a real topic is required. Under this perspective, “asyndeton” is a poor label, but it has been used. The pattern may be related to some types of informational patterns on the discourse-level (cf. Luraghi 1990 for Hittite). On the other hand, the lack of a “connective” can be simply produced by the introduction of a new topic, as the topicalized element will end up occupying the position that is otherwise filled by the “connective” placeholder. At the same time, clitic clause-level “conjunctions” will often occur when the first slot of an Anatolian clause is occupied. Some of them (at least Hitt. *-ma* and Luw. *-pa*) have been described as having the function of marking prominent (focal or topical) elements (possibly as syntactic heads; further on Hittite *-ma* cf. Sideltsev and Molina 2015). Since the linear realization of focus and topic with respect to clitics can be similar in surface, there is not always a positional way to tell them apart. Does the interpretation of clitic connectives as topic-markers derive from their occurrence after a fronted element that negates the presence of a non-clitic first-slot “connective”, or is their informational function real and original? This is an example of the complex interplay between syntactic structure and informational patterns.

6 A case study: Hieroglyphic Luwian initial verbs

In order to better illustrate the importance of formal study of the syntax of Luwian, it is interesting to consider the problem of non-canonical phrase order produced by the fronting of finite verbal forms in the Iron Age Hieroglyphic Luwian corpus. The majority of the cases of non-canonical verb position in Iron Age Luwian occur in the bilingual inscription from

Karatepe. These occurrences, that were studied by Yakubovich (2015), are 14 in number, at least 11 of which, according to the Russian scholar, mimic the VSO word-order typical of West Semitic, which may indicate that either the original version was a bilingual Phoenician one, or that the variety of Luwian spoken in Iron Age Cilicia was strongly influenced by the syntactic patterns of Phoenician. Whatever the correct interpretation, this interference is further confirmed by Bauer's (2014: 58f.) identification of at least one case of post-nominal demonstrative (KARATEPE 1, §63) that is not explained by informational markedness, and is therefore likely to mimic the position of post-nominal determiners in Phoenician.

However, apart from these aberrant patterns in the Cilician texts, there is a small number of cases in which initial verbs occur in non-bilingual inscriptions from the Hieroglyphic Luwian corpus of the Iron Age. Functionally, a few different types can be distinguished that require different explanations.¹¹

6.1 Initial imperatives

Initial second person imperatives only occur in the epistolary documents from Assur. For instance, ASSUR *letter f+g* §24:

- (2) [VP[V *asaza*] [NP-IO *Pihami*]]¹²
 say.IMP Pihami.DAT
 'Say to Pihami.'

All of the six Assur letters contain this type of sentence at the beginning. There are two elements only, so the informational structure is constrained by the small number of available slots and elements. The initial position of imperatives is rather typical cross-linguistically (cf. Potsdam 1998 and 2007; and, for a recent overview, Cormany 2013). Since there is an indirect object (NP-IO), but no object noun phrase (NP-OBJ), one may argue that this example is unmarked. Syntactically, it consists simply of a VP with no overt subject that moves to a left-prominent slot. In literature, the slot occupied by clause-initial imperatives (V) has been located either within the maximal projection of a "Complementizer Phrase" or within the "Inflected Phrase" (Rupp 2003; Cormany 2013). This distinction is based on the behaviour and nature of the few elements that may precede the imperative in some modern languages, and it is not easily applied to Ancient Anatolian syntactic structures, because in Hittite and Luwian many elements can occur before imperative verbs. This prevents a generalization of the assessment of initial imperatives that has been developed in the field of cartography: the Anatolian imperative simply does not share the same features of an English or French imperative.

However, since the clause-initial position is not the only one Luwian imperatives could occupy, it is worth having a closer look at the pattern in (2). The Assur letters contain other instances of imperative verbs that are not discourse-initial, the general context being that of requests for sending merchandise. The pattern of these occurrences is always the same: there is either a clitic object (deleted in a few cases) or a clitic indirect-object and a verbal phrase (e. g. ASSUR *letter f+g* §25):

11 The apparent initial verb in ASSUR *letter f+g* §24: [VP *awiji*] *parari arha arawi* ('Shall I come (and) travel by foot?') is not a case of proper fronting but rather a case of serial construction with the verb *awi-*, 'to go', followed by another finite form.

12 The abbreviations used for phrase-level syntactic labelling are: NP = noun phrase; -IO indirect object, -OBJ direct object, -SBJ subject; VP = verbal phrase, V verb (predicate head). ADV = adverb; QUOT = direct speech marker; CC = coordinator/conjunction; PTCL = particle.

- (3) [QUOT *wa*] [NP-IO *-m(u)*] [NP-OBJ *-an*] [VP[V *harwani*]]¹³
 QUOT me.DAT he.ACC send.PRS.3SG
 ‘Send them to me!’

No overt connective is present, and the object-pronoun is included in the initial clitic chain, that carried the first prosodic accent of the clause. In most formal rule sets, the syntactic position of clitics is outside the boundaries of the VP proper, with direct object moving there from a VP-internal position and therefore the boundary of the VP should follow the clitic-chain. The difference between (2) and (3) is both structural and informational. Since (2) is discourse initial, the Anatolian leftmost topic-slot must be occupied, and an introductory *a-* cannot occur. Thus, the syntactic configuration locates the verb in fronted position, because the topic of the clause is not the dative NP “to Pihami”, but the content of the imperative predication. (3) is not discourse initial, so the leftmost position is occupied by the proclitic head of the Wackernagel chain.

6.2 Non-discourse-initial (asyndetic?)

The cases of non-discourse-initial fronted verbs at the beginning of a clause connected, without any proclitic “connective”, to the previous one are very rare but at least one can be found in the TOPADA inscription (§8):

- (4) *apasi-n irhi-n a_xri-ta* [V *tuwa-tta*] [CC *-pa*] [QUOT *-wa*] [PTCL *-ta*]
 his.ACC boundary.ACC raise.PST.3SG put.PST.3SG but QUOT PTCL
 [NP-LOC *watti*]
 mount.DAT
 ‘He raised his frontier (here) (and) put (it)¹⁴ (here), on the mountain.’

It must be noticed once again that the notion of “asyndeton” in Anatolian is far less obvious than in modern languages: the fact that some connectives occupy an obligatory topical left-peripheral slot in unmarked clauses at least in given phases of the language (both Late Hittite *nu* and Luwian *a*) may mask any “real” semantic function. Furthermore, in cases like the one under examination, the presence of a clitic, usually the “conjunction” *-pa*, is certainly a prominence-marker (cf. above 5). Purely syntactical interpretations of the movement of the verb in first position, that crosses the boundaries of the maximal projection of the Verbal Phrase and reaches a CP position, do not apply. The structure cannot be explained by any hierarchically fixed feature to be checked in the left periphery – for one thing, because the position of “complementizers” in Luwian was usually not left-prominent.¹⁵ Therefore, it is rather safe to assume that the fronting in TOPADA §8 is informational in nature since it is absolutely certain that in Luwian the following constructions would have been perfectly grammatical:

13 We do not reconstruct an introductory element *a-* in these late texts where it is occasionally not graphically rendered. These may be described as cases of prosodic “aphaeresis”, but since the whole “connector” disappears they may indicate that it had lost its prosodic relevance along with its syntactic function, and its disappearance could be more than a mere phonetic phenomenon.

14 It is also possible, and in our opinion very likely, that a 3rd person sg. obj. pronoun *-at-* was present, but unwritten, between the QUOT element and the local particle.

15 Most of them, with the possible exception of conditional *man*, are derived from *wh*-elements and are generally linearized in a second-phrase P2, or in the first post-topical slot. For a study on the *wh*-elements of Hittite, and an attempt at a theoretical explanation, see Huggard 2015.

- (5) a. *watti-pa-wa-ta tuwatta*
 b. *a-wa-ta watti tuwatta*

In this case one can push the interpretation a bit further, and observe the induced position of the local indirect-object NP: *watti*, “on the mountain”. In her study on the verb-initial constructions of Hittite, Bauer (2011) introduced the interesting metalinguistic label *dummy topic*, inherited from the terminology of Dik (1995). According to her, an Anatolian fronted verb can be seen as a dummy topic when its semantic prominence is weak and it configures a repetition. Her examples feature, for instance, cases in which the predicate is the same as in the previous clause (KUB 21, 17 i 3f.):

- (6) ^dUTU^{Št} md^{md}ŠIN-^dU-*ass* -*a hannitalwa*<n>*ess-ir*
 King Arma-Tarhunzas and litigate.PST.3PL
HUL-*ess-ir* -*ma -at k-edani memiyan-i*
 be.opposed.PST.3PL but they.NOM this.DAT matter.DAT

‘The King and Arma-Tarhunza had a litigation. They were opposed to each other on this matter.’

Looking back at (4), the semantic and informational pattern of the context may partly justify a similar interpretation: the new information added by the marked clause is made up of the local particle *-ta* and by the local NP “on the mountain”. In any case, as we have seen it would have been absolutely grammatical in Luwian to simply raise the NP to a (linearly leftmost) topical position (5a). Therefore, the current situation is better explained as a strategy to mark two different types of informational prominence: the *evacuation* of the verb to the position reserved to topical information (cf. on this Rizza 2011; Sideltsev 2014, in pc. example 4) automatically leaves the NP in an unusual and marked right position. As for the verb, it does not represent a *repetition* of the semantics of the previous predicate but rather its *consequential* completion: the frontier (stele) is first raised, hence deposited, in a sort of discourse-semantic head-to-tail linking.

6.3 Non-discourse-initial, topic-shift in relative clauses

In other cases, that appear structurally similar, the informational fronting of the verb seems to introduce new topical information, so no asyndeton occurs. Consider for instance the BOR inscription, §§7f.:

- (7) *wa -mu 100 tiwatalis*[...] *tiwatalis 8 matusa*
 QUOT me.DAT 100 t.-measure.NOM t.-measure.NOM 8 m.NOM/ACC
 [_V ***hantawataha***] [_{QUOT} *-wa*] [_{NP} *kwati ussi*] [...] *pada-nza annan*
 become.king.PST.1SG QUOT which.DAT year.DAT [...] feet.DAT under
tu(wa)-tta Tarhunza-s
 put.PST.3SG Tarhunza.NOM

‘For me 100 *t*-measures [of ...] and 8 *m*. In the year in which I became king, [in that year] Tarhunzas put [my enemy] under my feet.’

Evidently, in this case a topic shift occurs which is made evident by the fronting of the verb. However, the very clause is a preposed restrictive relative (featuring a correlation semantically based on a unicity-quantifier), that all together provides the *scene-setting*-topic of the following main clause. Since the general environment is that of a relative clause, it

may be arguable that the fronted element is not the leftmost verb inside the relative clause, but rather the whole relative clause, which is located at the complementizer-level of the left periphery of the complex sentence and acts as a noun-like constituent co-indexed with an NP in the main clause.¹⁶ Since the new topic is represented by the *scene-setting* coordinates of the new textual portion, the fronting of the verb *inside* the topical relative clause produces a focus on the predicate; nevertheless, standard position of *wh*-elements in the unmarked Anatolian clause may have played a role too.¹⁷

The co-indexing is more evident in a better preserved but structurally similar case: the inscription KULULU 2, §5a,b:

- (8) *wa -mu -ta karawi-nzi zarumada-ta* [V **saniti**] [CC *-pa*] [QUOT *-wa*]
 QUOT me.DAT PTCL *k*.ACC.PL erect.PST.3SG remove.PRS.3SG but QUOT
 [NP-OBJ *-mu*] [NP-SBJ *hwi-s*] (...) *wa -ru -ta Santasi-nzi Marwi-nzi*
 me.DAT who.NOM QUOT he.DAT PTCL of Santa.NOM.PL M.-god.NOM.PL
 *256-*dasa-nza anta tanuwantu*
 *256-*dasa*.NOM/ACC.PL in set up.IMP.3PL
 ‘I myself erected these *k*. Whoever **removes** me (...) against him may the *M*-gods of Santa set up *256-*dasa*’s.’

Once again, a topic-shift is quite obviously involved. After describing the dedication of the *k*’s, the ruler discusses the terrible fate of his future opponents. In this case, the whole relative clause simply represents the topic for the rest of the discourse.¹⁸ Again, the structure of the relative clause is limited to predicate and *wh*-headed NP, which provides a limited number of options for the ordering of the phrases in the linearization of the clause.

6.4 Topic-shift in scribal “signatures”

A final type of fronted verb constructions is represented by clauses that occur only in a very specific discourse context: the scribal signatures. This is by far the most frequent of the four types discussed in the present paper; however, their absolute prevalence is low. So far we have identified only eight of them in the non-bilingual Hieroglyphic Luwian corpus.¹⁹ A well preserved example is MEHARDE §8:

- (9) [V **MALLEUS.CAPERERE**] [CC *-pa*] [QUOT *-wa*] [NP-OBJ *-na*] [NP-SBJ *Alantimuwa-s*]
 carve but QUOT he.ACC Alantimuwa.NOM
 BONUS₂.SCRIBA-*la-s*]
 good.scribe.NOM
 ‘Alantimuwas the “good scribe” carved it.’

The structure seems similar to the fronted verbs in (7) and (8), and, in this case, there is a very clear topic-change. Even though these clauses epigraphically belong to the same support as the inscriptions, it may be questionable if they can be described as belonging to the same *text*; thus, a classification as discourse-initial topics may not be completely off-target.

16 For a recent interpretation of Anatolian (cor)relative clauses, see Huggard 2015.

17 The leftmost position of the verb inside the relative may depend on the fixed post-clitic position of the *wh*-headed phrase *kwati ussi*.

18 A third case, with a context rather similar to KULULU 2, §5a,b, can be found in TÜNP 1, §5.

19 ARSUZ 2, §28; BOYBEYPINARI §4; GAZIANTEP §3; İVRIZ 1C §4; İVRIZ FRGM. 1–3; MEHARDE §8; ŞARAGA §2 (retrieved from Yakubovich’s online corpus: <http://web-corpora.net/LuwianCorpus/search/>), TOPADA §39. Cf. the texts in Hawkins 2000.

However, two main differences exist between (7) and (8), and (9). The first difference is the general syntactic environment, which is not that of a relative clause (as opposed to (7) and (8)).

The second difference is the peculiar pattern of referentiality. The verbal phrase that is fronted and marks the topic-shift includes in the phonological chain a clitic object pronoun, which, evidently, is also put in a focal position. However, this clitic pronoun is *not* phoric. It refers to the stele and it represents its very first occurrence in the text. The reference is not discourse-internal but based on real-world evidence. The resulting pattern features a fronted VP marking, a change of topic, possibly even the beginning of a separate textual unit, while the subject NP, just as in the case of the locative NP in (4), is left in a right-prominent focal position as a result of the VP-evacuation. This same pattern regularly occurs in all the 8 instances of verbal fronting in scribal signatures that we have been able to collect so far.

7 Conclusion

The hierarchic structures of syntax develop on several levels that influence the form of linearized sentences along with the informational alterations that emerge in marked patterns. At the phrase-level, phrases are merged and local alterations may occur. The constraints to the intra-phrasal re-ordering of words or sub-phrases must be assumed to be language specific, because universal patterns should be demonstrated and not assumed as a working hypothesis.

At the clause-level, informational configurations define the so-called “clause architecture” which, pending further research in general linguistics, should also be assumed to be at least in part language-specific. The informational transformations that occur on the phrase-level (such as local saliency-focus) and those that interest the general clause architecture (such as topicalization) may, in some cases, influence each other in producing the linear structure of the clause. Therefore, it is important to systematically take both phenomena into consideration.

This methodology has been exemplified by a brief case-study dedicated to the fronting of verbs and VPs in the non-bilingual Iron Age Hieroglyphic Luwian texts. The examples given were used to illustrate the importance of combining the observation of the structural environment of Anatolian clauses with the assessment of pure informational flows and patterns. This complex approach is promising, we believe, in order to properly highlight all the levels that interact with each other in producing the linear structure of the clause.

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