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Hittite correlatives are paratactic

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This paper argues that correlative constructions in Hittite are paratactically structured. The relative clause is essentially a clausal hanging topic, sitting at the left edge of the main clause in linear juxtaposition without actually being an integrated part of it, syntactically speaking. I defend this claim in two stages. First, I argue that correlatives in Hittite are base-generated in their left-edge position rather than derived through movement (as advocated for Hindi by, e.g., Bhatt 2003). I adduce as evidence the fact that the main clause correlate appears to be simply a discourse anaphor and need not even be present in the construction; these observations are incompatible with a movement-based derivation that generates the relative clause as a modifier of the correlate. There is also evidence for a lack of locality effects. The second part of my claim, that Hittite correlatives are not syntactically integrated, differs from most base-generation accounts of correlatives, which take correlatives to be clausal adjuncts. I support my position with parallels to hanging topics and peripheral adverbials (Haegeman 2012) and with examples of intervening non-subordinate clauses, and I offer some comments on why syntactic adjunction is less well suited to the Hittite situation. I also show that Segmented Discourse Representation Theory (Asher & Lascarides 2003) accommodates these structures, including some notably non-canonical ones, in a simple and principled way.

1 Introduction

A fundamental issue for modeling the interaction between clauses is the division of labor between the syntax and discourse components of the grammar. On the one hand, there are clausal interactions that clearly involve no syntactic dependence; in (1), we infer a causal relation, but each clause can stand equally well on its own.

(1)   John shielded his eyes. The sun was too bright.

On the other hand, there are cases where one clause is so dependent on the other that syntactic subordination seems the only plausible analysis; in (2), the clause *as he stepped outside* is neither syntactically nor semantically viable on its own.

(2)   John shielded his eyes as he stepped outside.

The question, then, is where between these poles the line is to be drawn: what kinds of interactions necessarily involve syntactic connection in addition to discourse relation? This question is especially relevant when one clause is interpretively dependent on another, as in (2): does interpretive dependency always implicate syntactic dependency? If not, then we must identify when a clausal dependency is reflected in the syntax and when it is not—in other words, whether the relation is reflected in syntactic subordination or whether the clauses are instead juxtaposed in parataxis. The answer has major implications for our understanding of the scope of the syntactic mechanism in the grammar, its interface with the discourse component, and the interfaces of each with the semantics.

This paper addresses this question with respect to correlatives in Hittite. The prototypical correlative construction consists of two clauses: a relative clause (RC) followed by a main clause that contains a resumptive nominal element (which I refer to as the *correlate*):

(3)   [nu = mu   MUŠEN.ḪI.A kue uppešta]$_i$ n = at$_i$ arḫa ḫ[ar]ranteš eš[er]
        CONN = me birds   REL you.sent CONN = they spoiled   were
        '[The birds which you sent to me]$_i$, they$_i$ were spoiled.'
                                                        (AT 125 11–12 (NH); Hoffner 2009: 373)

In this paper, I address two not wholly distinct questions concerning the syntactic relation between the two clauses:

(4)   i   How does the RC come to be in its position on the left side of the main clause?
        ii. What exactly is that position's relation to the main clause?

Previous research on correlatives in various languages has offered several different answers to these questions. Answers to question (i) differ primarily in whether the correlative's left-edge position

is derived through movement (Mahajan 2000 and Bhatt 2003 on Hindi) or is taken to be its base position (e.g., Srivastav 1991 on Hindi). Answers to question (ii) are a bit more varied, but both subordinating approaches (e.g., Bhatt 2003 and Srivastav 1991) and (quasi-)paratactic approaches (e.g., Lipták 2009a) appear in the literature. I advocate a base-generation approach for Hittite correlatives, though one different from Srivastav's (1991) in one key aspect: I will argue that the correlative is not a syntactic subconstituent of the main clause. Rather, the two clauses stand in a paratactic relation and form a constituent at the level of discourse instead of narrow syntax.

The paper is organized as follows. Section 2 provides background information about Hittite. Section 3 surveys the types of RCs that Hittite uses. In section 4 I evaluate two major approaches to correlative formation, namely those that derive correlatives via movement and those that treat them as base-generated in their observed position, and demonstrate that the evidence decisively supports base-generation for Hittite. In section 5 I propose a paratactic analysis of Hittite correlative syntax and model the discourse structure in a dynamic semantic framework. In section 6 I argue against a syntactic adjunction model of correlatives. Section 7 concludes the paper with a discussion of the results.

2 Background on Hittite

Hittite is the earliest attested Indo-European language, found on cuneiform tablets dating from approximately the 16th–13th centuries BCE. The best-attested member of the Anatolian subgroup of Indo-European, Hittite was the administrative language of the Hittite kingdom in ancient Anatolia, covering the modern-day areas of central and eastern Turkey and stretching into the northern Levant. The Hittite corpus consists of around 300,000 words (Yates 2017: 36). This study is based on a sample of 912 correlatives spanning all periods of Hittite documentation and representing several different genres; see the appendix for a link to the data file.

Hittite cuneiform is a logosyllabic script in which Hittite words can be spelled phonetically or represented by logograms. Hittite scribes use both Sumerian words and Akkadian words as logograms (*Sumerograms* and *Akkadograms*, respectively) to represent the Hittite word with the same meaning. Hittite examples in this paper are transliterated into *broad transcription* using standard conventions: phonetic signs are written in lowercase letters, Sumerograms are written in plain uppercase letters, and Akkadograms are written in italic uppercase letters. Where a phonetic word (or part of word) or an Akkadogram is spelled with multiple signs, the boundaries between signs are not represented and redundant vowels are omitted. Combinations of Sumerograms are indicated with a joining period (e.g., MUŠEN.ḪI.A). Boundaries between sign type are indicated by a hyphen (e.g., DINGIR-*LIM*); this hyphen does not represent a morpheme boundary, only an orthographic boundary. Clitic boundaries are represented with an equal sign (=). Some logograms function to indicate a noun's semantic class and do not actually represent linguistic content; these *determinatives* are written as superscripts. As a last point of note, Hittite texts are

preserved on clay tablets, which are not always in perfect condition. Square brackets in Hittite examples indicate textual restorations. Parentheses inside a square bracket indicate a restoration based on another copy of the given text.

Hittite texts are divided into three chronological periods (see Hoffner & Melchert 2008: xvii): Old Hittite (OH; ca. 1650–1450 BCE), Middle Hittite (MH; ca. 1450–1350 BCE), and New Hittite (NH; ca. 1350–1190 BCE). For any given text, a particular exemplar can be contemporaneous with the composition or may instead be a later copy. It is common practice to identify the date of the exemplar as Old Script (OS), Middle Script (MS), or New Script (NS), contemporaneous with OH, MH, and NH respectively. In the citations of Hittite examples in this paper, I list both dates;[1] for example, OH/NS signifies a New Script copy of an Old Hittite text.

3 Hittite relative clauses

As our fundamental question is the nature of the external syntax of Hittite correlatives, a natural starting point in our investigation is to survey the various forms that correlative constructions can take.

3.1 Basic correlatives

The most common type of RC in Hittite is the correlative. The basic prototypical correlative construction consists of two clauses:

(5) nu=mu   MUŠEN.ḪI.A kue uppešta n=at   arḫa ḫ[ar]ranteš eš[er]
     CONN=me birds   REL you.sent CONN=they spoiled   were
     'The birds which you sent to me, they were spoiled.'

(AT 125 11–12 (NH); Hoffner 2009: 373)

The first clause is an RC containing a *relative NP*[2] — that is, an NP containing a form of the relative morpheme *kui-* (Rel).[3] The relative morpheme can, but need not, be associated with a head noun; if a head noun is present, then it is internal to the RC, as in (5).[4]

The second clause contains the nominal correlate that is coreferent with the RC and serves to comment on that referent further. Because it contains the correlate, I will call it the *correlate clause* (CC). Although in many cases the CC is an independent clause, and thus could appropriately be called the "main clause" or something similar, this is not always the case:

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[1] Except for NH, which necessarily implies NS.

[2] I will use the label NP for this throughout the paper. Hittite does not have articles; whether the DP hypothesis is a good fit for Hittite is irrelevant to this paper.

[3] This stem is also used as an interrogative and indefinite. Thus, in the typology of Belyaev & Haug (2020), Hittite employs wh-based correlatives.

[4] In section 3.5 I will discuss the linear position of the head within the RC.

(6) kāšma=wa   MUŠEN.ḪI.A kue *ANA* EN=*YA*   uppaḫḫun nu=wa=za
there=QUOT birds   REL to   lord=my I.sent   CONN=QUOT=REFL
mān EN=*YA* apē   MUŠEN.ḪI.A malāši   nu=wa=mu   EN=*YA*
if   lord=my those birds   approved.2SG CONN=QUOT=me lord=my
EGIR-pa ḫatrāu
back   write.2SG.IMP
'The birds which I have sent there to My Lord, if you My Lord approved of those birds,
may My Lord write back to me.'

(AT 125 5–9 (NH); Hoffner 2009: 373)

Therefore I eschew the term "main clause" to avoid such implications. "CC" is agnostic to the
clause's (in)dependent status and focuses on its relevance to the correlative construction.

It should be noted that correlatives in Hittite, and indeed preposed dependent clauses in
general, are very similar to independent clauses in their internal syntax (cf. Inglese 2016: 11
with references). They show the same syntactic behaviors at all levels of the clause: both types
have basic SOV word order, both can begin with sentence connectives, both feature clitic chains,
both display configurational sensitivity to information structure, and there are no discernable
differences in morphological encoding. The only element that truly distinguishes a preposed
dependent clause is the presence of a subordinating morpheme: in the case of correlatives, the
Rel *kui-*.

3.1.1 Additional clauses

The prototypical correlative construction has a single CC, but in practice there can be multiple
clauses (dependent or independent) following the RC that each contain a coreferent NP —
essentially, multiple CCs:

(7) ᵐMaraššantaš=ma kuit *ṬUPPU* ḫarzi n=**at**   uezzi mān udai   n=**at**
Maraššanta=TOP REL tablet has   CONN=it goes if   brings CONN=it
lē   dattari
PROH is.accepted
'The tablet which Maraššanta has, if he proceeds to bring **it**, let **it** not be accepted.'
(Bo 86/299 ii 2–3 (NH); Otten 1988: 14)

I will argue that all correlates in Hittite are anaphoric NPs, so in my view all of these correlates
have equivalent syntactic and discourse status. Nevertheless, for simplicity, I will focus on the
first such correlate in any given construction.

It is also possible for a single construction to feature more than one correlative, each
associated to its own correlate:

(8) purut$_i$=ma kuit dašket nu   kuwapi$_j$ KIN-az human kittat   apūnn$_i$=a
     mud=TOP REL took CONN where work all   was.placed that=also
     apiya$_j$ pēdā[(i)]
     there brings
     'The mud$_i$ which he had taken, where$_j$ all the work has been placed, he carries that$_i$ too
     there$_j$.'

<div align="right">(KUB 7.41 Vo 36–38 (MH/MS?); Otten 1961: 118)</div>

These types of constructions do not differ substantially from basic correlative constructions in
ways that are significant for this paper, so I will not discuss them further.

3.2 Multiple correlatives

The above discussion has focused on correlatives containing a single relative NP. Like some
other languages with correlatives, such as Hindi (Srivastav 1991: 650–651) and Hungarian
(Lipták 2009a: 403–404), Hittite correlatives can also have multiple relative NPs. I refer to
these as *multiple correlatives*.[5] Examples (9) and (10) demonstrate this type for Hindi and Hittite,
respectively:[6]

(9)   [$_{RG}$**jis laRkii-ne$_i$ jis laRke-ke$_i$** saath khelaa] us-ne   us-ko   haraayaa
        REL girl-ERG   REL boy-GEN with played   that-ERG that-ACC defeated
       'Every girl defeated the boy she played with.'
       (Lit. '**Which girl$_i$** played with **which boy$_j$**, she$_i$ defeated him$_j$.')

<div align="right">(Lipták 2009b: 5, ex. 14)</div>

(10)   *The Kaskean enemy which my father found in the heart of the territory, it became (= divided into)*
       twelve detachments. And the gods went before my father,[7]
       nu=kan   **uni** ^{LÚ}**KÚR** ^{URU}**Gašgan ERIN.MEŠ ŠU-*TI* kuin$_i$ kuwapi**   damašket
       CONN=PTC that enemy Kaskean   detachment   REL   REL.where caught
       [n]=an$_i$=kan   kuwašket
       CONN=it=PTC destroyed
       'and **whichever$_i$ of those enemy Kaskean detachments** he caught **wherever**, he
       destroyed it$_i$.'
       ('For any detachment *x*, location *y* such that he caught *x* in *y*, he destroyed *x*.')

<div align="right">(KBo 14.3 iii 17–19 (NH); Del Monte 2009: 18)</div>

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[5] See Sideltsev 2019: 298–301 for an earlier description of multiple correlatives in Hittite. "Multiple correlative" refers
     to a single RC, and should not be confused with constructions that feature two or more distinct RCs, as in (8).

[6] Hindi examples are presented in transliteration with the following conventions: long vowels are written with a
     doubled vowel, nasal vowels with a postvocalic N, and retroflex consonants as capitals.

[7] If, in the presentation of a Hittite passage, the preceding or following context is relevant for interpretation or for the
     argumentation, I provide it in italics before the Hittite or after the translation, respectively.

3.2.1 Matching requirement

The prototypical multiple correlative has as many correlates as relative NPs; this parity, treated as a syntactic rule, is known as the *matching requirement* (Bhatt 2003: 533–534; Leung 2009: 317–318). Bhatt and Leung both discuss situations where the matching requirement may be violated. For example, Hindi allows covert *pro* correlates if they have the same case as the corresponding Rel. Hittite also permits *pro* correlates (see section 4.4.1), but does not share this case restriction (though my sample only has examples involving *single* correlatives, not *multiple* correlatives). I do not treat these cases as genuine violations of the matching requirement, since we can identify *pro* as the correlate.

Leung discusses another situation permitting violation of the matching requirement: when one of the Rel NPs has non-specific reference (e.g., free choice). As (10) shows, Hittite is even more permissive, allowing unmatched Rels that have specific reference (co-varying with the other Rel). It should be noted that in most of the multiple correlatives in my Hittite sample there is in fact only one correlate. The CC does not even need to incorporate all of the Rels semantically (a parallel with frame relatives, discussed below), much less syntactically. Thus, the matching requirement simply does not hold in Hittite.

3.3 Frame relatives

Hittite allows a multi-clausal RC construction built in the same manner as a correlative, except that there is no coreferent correlate:

(11)   *ŠA* ŠEŠ   ᵐḪimu-DINGIR-*LIM*=ma kuit uttar ḫatrāeš   n=an=kan   kāša
      of   brother   Ḫimuili=TOP   REL   matter   you.wrote   CONN=him=PTC   here
      parā   neḫḫi
      forth   I.send
      '(Concerning) the matter of Ḫimuili's brother which you wrote about, I am dispatching him (from) here.'

                                             (HKM 2 10–13 (MH/MS); Hoffner 2009: 99)

This construction shares the topic-comment structure of a standard correlative construction, except that the topic referent is not strictly included in the comment clause. Whereas in a standard correlative construction, the topic-comment relation is mediated by the correlate NP itself, in this kind of construction the two clauses are linked by a bridging relation (Clark 1977; Asher & Lascarides 2003: 18). The RC, which I call a *frame relative*, provides a frame of interpretation for (what I will still call) the correlate clause,[8] which is interpreted as having something to do with the referent of the RC.

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[8] As noted below, I believe that frame relatives are justifiably classed as correlatives, despite the lack of a correlate. Thus, I maintain the term "correlate clause" for the sake of expositional simplicity and to emphasize the similar role that clause plays in both frame relative constructions and prototypical correlative constructions.

With many frame relatives, the CC has what we might call a *pseudo-correlate*, a nominal expression that bears some non-identity relation to the referent of the RC:

(12) LÚ.MEŠ ᵁᴿᵁKašga = ya = mu = ššan kuiēš   anda iyantat   nu = mu   namma kattan
      men   Kaska = and = me = PTC   REL.PL in   marched   CONN = me anymore with
      UL **kuiški**   wezzi
      not anyone.SG comes
      'And the men of Kaska who used to march with me, **no one** comes with me anymore.'

      (ABoT 1.60 Vo 5–7 (MH/MS); Hoffner 2009: 178)

(13) ᴾ�Í⁵gapirtan = a = kan kuin *ANA* DÙ   EME   šipantaš   nu   ᵁᶻᵁ**NÍG.GIG**
      mouse = TOP = PTC REL to   artificial tongue she.sacrificed CONN intestines
      ᵁᶻᵁZAG.UDU ḫappinit   zanuzi
      shoulders   with.flame cooks
      'The mouse which she had sacrificed to the artificial tongue, she cooks **the intestines and shoulders** with the flame.'

      (KBo 15.10 iii 58'–59' (MH/MS); Görke 2013)

The RC and the pseudo-correlate are associated by *bridging anaphora* (Belyaev & Haug 2014: 100–101; Sideltsev 2016: 88–101).[9] This relation may take various forms, such as the set-member relation in (12) or the body-part relation in (13).

In other cases, the clausal link is not manifested by any (pseudo-)correlate element. Rather, a bridging relation between the clauses must be inferred by the hearer using world knowledge, as in (11) and the following example:

(14) kuiš ŠEŠ.MEŠ-n = a NIN.MEŠ-n = a ištarna idālu iyazi nu   LUGAL-waš ḫaraššanā
      REL   brothers = and sisters = and among   evil does CONN king's   head.ALL
      šuwāyezzi nu   tuliyan   ḫalzišten
      looks   CONN   assembly   summon.2PL.IMP
      'Whoever does evil among (his) brothers and sisters and looks to the king's head (with hostile intent), summon the assembly!'
      If his testimony is dismissed, he shall pay with his head.

      (KBo 3.1 ii 50–51 (OH/NS); Hoffmann 1984: 34)

Here, the RC introduces a hypothetical person who intends to harm the king. This person plays no syntactic nor any reasonably direct semantic role in the following clause. The hearer must use world knowledge to understand that the assembly is to be summoned so that this person may be prosecuted.

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9 A discussion of example (13) appears in Probert 2006: 63–65, although she does not discuss it as part of a broader syntactic pattern.

3.4 Treat them all as one type of construction

We have seen three types of peripheral RC: basic correlatives, multiple correlatives, and frame relatives. Here I will argue that these should be treated as three instances of a single type of RC construction: the correlative construction. I will show that all three types have similar properties that justify a unified treatment.

3.4.1 Same shape of construction

The first similarity is the shape of the constructions themselves. Correlative constructions involve the juxtaposition of an RC and another clause (the CC) in a topic-comment relationship; this relationship was recognized for Hittite correlatives by Garrett (1994: 45) and as a robust cross-linguistic type by Bittner (2001: 39). This structure, and its associated pragmatic functions vis-à-vis the presenting of information to the interlocuter, are defining characteristics of the correlative construction; indeed, the definition that I gave above highlighted these components. Multiple correlatives and frame relatives share this structure. Notably, frame relative constructions maintain these semantic and pragmatic characteristics even without a correlate to anchor the clausal link. The topic-comment structure thus transcends the syntactic specifics of the CC.

3.4.2 Definite and universal readings

Second, correlatives cross-linguistically are a type of maximalizing "third-kind" RC (Grosu & Landman 1998), and this maximality can result in either definite or universal (indefinite) readings (Belyaev & Haug 2020: 880). Both readings are exemplified in Hittite with basic correlatives (15):

(15) a. Definite:
          nu＝mu   MUŠEN.ḪI.A kue   uppešta n＝at   arḫa ḫ[ar]ranteš eš[er]
          CONN＝me birds   REL   you.sent CONN＝they spoiled   were
          'The birds which you sent to me, they were spoiled.'
                                                      (AT 125 11–12 (NH); Hoffner 2009: 373)

      b. Universal:
          If a slave$_j$ flees and he$_j$ goes into an enemy land,
          kuiš$_i$＝an$_j$ āppa＝ma uwatezzi n＝an$_j$＝za   apāš$_i$＝pat dāi
          REL＝him back＝TOP brings   CONN＝him＝REFL he＝FOC   takes
          'whoever$_i$ brings him back, *he$_i$* shall take him$_j$ for himself$_i$.'
                                                      (KBo 6.2 i 53 (OH/OS); Hoffner 1997: 32)

Frame relatives also show definite and universal readings, as shown by examples (13) and (14) above, respectively. Both readings are also found with multiple correlatives:

(16) a. Definite:

nu   DINGIR.MEŠ kuiēš kēdani   UD-ti   kuedani arkuwēšni *IŠTU*

CONN gods   REL   this.LOC day.LOC REL.DAT plea.DAT   with

EME = *YA*   ḫalziḫḫun   …

tongue = my I.have.summoned

'And the gods whom I have summoned with my tongue on this day for which plea,'

may you, Sungod of Heaven, summon them from heaven and earth and …

<div align="right">(KUB 6.45 iii 21–22 (NH); Rieken et al. 2017b)</div>

b. Universal:

The Kaskean enemy which my father found in the heart of the territory, it became (= divided into) twelve detachments. And the gods went before my father,

nu = kan   uni ᴸᵁ́KÚR ᵁᴿᵁGašgan ERIN.MEŠ ŠU-*TI* $kuin_i$ kuwapi   damašket

CONN = PTC that enemy Kaskean   detachment   REL REL.where caught

[n] = an_i = kan   kuwašket

CONN = it = PTC destroyed

'and $whichever_i$ of those enemy Kaskean detachments he caught wherever, he destroyed it_i.'

('For any detachment x, location y such that he caught x in y, he destroyed x.')

<div align="right">(KBo 14.3 iii 17–19 (NH); Del Monte 2009: 18)</div>

Example (16a) comes from a prayer text which seems to be a form prayer: the actual plea is meant to be filled in on the appropriate occasion and takes place at a later point in the ritual. Given that the text in this example forms part of the script of the prayer, we can presume that the plea is definite, as are the gods who have just been invoked (in a giant list) in the immediately preceding portion of the text. In (16b), universal maximalization is evinced by the fact that the RC describes a single detachment, despite it being known from the context that there were twelve such detachments.

3.4.3 Coordination of different types

As a third example of behavioral similarity between the types, I adduce the following passage showing that a multiple correlative is additively combined[10] with a basic "single" correlative such that they share a correlate:

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[10] I say "combined" to avoid committing to a specific interpretation of the manner of combination. The morpheme = *a* has two functions in Hittite: constituent coordination (including clauses) and additive focus. I gloss over the question of which is involved here, because it does not really matter for our purposes whether it is strict coordination or something looser.

(17) *Furthermore, concerning the images of you gods which are of silver and gold,*

nu=ššan   kuedani DINGIR-*LIM*-ni kuit   tuēkki=šši anda wezz[ap]an

CONN=PTC REL.DAT god.DAT   REL.NOM body=his on   worn.out

DINGIR.MEŠ-š=a kue *UNUTE*.MEŠ   wezzapanta n=at   anzel iwar

gods.GEN=also   REL accoutrements worn.out   CONN=them us   like

EGIR-pa *ŪL* kuiški   neuwaḫḫa[n ḫart]a

back   not anyone renewed   has

'whatever is worn out on whichever god's body, plus whatever accoutrements of the gods are worn out, no one has renewed them like us.'

<div align="right">(KUB 17.21 i 15'–17' (MH/MS); Rieken et al. 2016a)</div>

The fact that the two RCs, embodying two different types of correlatives, can be combined in this fashion signals that there is a basic functional equivalence between the two in terms of deploying them in such a construction. I take this to indicate that they are two instances of the same phenomenon.

3.4.4 Upshot: a single type

We have just seen three ways in which basic correlatives, multiple correlatives, and frame relatives have similar syntactic and semantic behavior in Hittite. Moreover, we have seen that they all display multiple hallmark characteristics of correlatives: a topic-comment structure and maximalizing semantics that yields both definite and universal readings. Based on these observations, I conclude that all three types are correlatives, simply varying in the number of relative NPs or the presence of a correlate.

Earlier, we observed that multiple correlatives in Hittite often violate the matching requirement, which says that there must be a matching correlate for each relative NP. As I mentioned above, the simple conclusion is that there is no matching requirement in Hittite. The existence (and prevalence) of frame relatives in Hittite can easily be associated with this observation. Just as relative NPs can go uncorrelated in multiple correlatives, the same can happen in "single" correlatives: if the relative NP *is* correlated, the result is a prototypical basic correlative, whereas if the relative NP is uncorrelated, then a frame relative results.

3.5 Other types of RC

In addition to correlatives, Hittite can also employ two other types of RC: externally-headed RCs (18), and free RCs occupying an argumental position in the clause (19); cf. Probert 2006. (For a detailed survey of RC types, see Melchert 2016.)

(18) [~NP~ḪUR.SAG [~RC~kuwapit=a=za]]   eḫu
      mountain   REL.where=TOP=REFL come.2SG.IMP
      'Come (back from) the mountain where (you are).'

<div align="right">(KUB 36.90 Vo 36 (NH); Rieken et al. 2016c)</div>

(19) [~RC~paprezzi kuiš] 3 GÍN   KÙ.BABBAR pāi
      is.impure REL   3 shekels silver   gives
      '(The one) who is impure gives 3 shekels of silver.'

<div align="right">(KBo 6.2 i 57 (OH/OS); Hoffner 1997: 33)</div>

There are also appositive RCs which behave like those in languages like English, except that they occur after the clause, not the modified noun itself.

We will not have anything else to say about the non-correlative types in this paper. But for readers unfamiliar with Hittite RC syntax, a word of caution is in order about the word order of the Hittite Rel, to avoid confusion between the types. It is well documented that the Rel may appear in several different positions with respect to its head noun. The basic position is Rel N, but N Rel is commonly found:[11]

(20) [~RC~LÚ.MEŠ ^URU^Kašga=**ya=mu=ššan** kuiēš anda iyantat] nu=mu   namma
      men   Kaska=and=me=PTC   REL   in   marched CONN=me anymore
      kattan *UL* kuiški   wezzi
      with   not anyone comes
      'And the men of Kaska who used to march with me, no one comes with me anymore.'

<div align="right">(ABoT 1.60 Vo 5–7 (MH/MS); Hoffner 2009: 178)</div>

Note that the order N Rel, as in (20), could be mistaken for an externally-headed relative. However, to our benefit, many Hittite clauses contain a chain of second-position clitics (bolded in (20)) that attaches to the first phonological word of the clause.[12] This allows us to tell whether the head noun is inside or outside of the RC: in (20), the clitic chain attaches to the head itself, proving its internal status. If the chain's host were to the right of the head, as in (18), then we would conclude that the head was external.

Another aid in distinguishing these types from correlative constructions is the frequent inclusion of either a clause-initial discourse connective (*nu, šu, ta*) or a clitic chain at the beginning of the CC. In (20), the CC begins with the connective *nu*, allowing us to detect the boundary between clauses and identify it as a correlative construction.

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[11] It is generally accepted that rightward prosodic movement of the Rel is what lies behind the N Rel order. The conditioning factors for this are beyond the scope of this paper and have been much discussed (Held 1957; Raman 1973; Garrett 1994; Becker 2014; Huggard 2015), but suffice it to say that one factor seems to be definiteness semantics. This also influences whether the Rel can be clause-initial or not.

[12] I assume that the first phonological word is *Kašga*. Hittite orthographic practice puts logograms first in an NP, mirroring Sumerian word order, even though the NP in Hittite would have its head on the right.

3.6 Summary

We have seen that there are three major types of Hittite correlatives. Prototypical correlatives feature one relative NP, which is matched to a single correlate. Multiple correlatives have more than one relative NP, and these may or may not be matched to a correlate. Finally, frame relatives have one relative NP (if there are multiple, we can group them with the multiple correlatives), and the CC either lacks a correlate altogether or may feature a pseudo-correlate that is linked in some way to the relative NP but is not identical in reference. I presented several reasons for regarding all three types as variants of a single underlying formation. In what follows, we will pursue an analysis of Hittite correlative syntax that derives all three types in the same way, fulfilling the goal of a unified treatment.

4 Hittite correlatives are base-generated in place

In an account of the external syntax of Hittite correlatives, we must address two questions, repeated here from (4) above:

(21) i   How does the RC come to be in its position on the left side of the main clause?
      ii What exactly is that position's relation to the main clause?

We will tackle question (i) in this section and question (ii) in section 5. I will argue that Hittite correlatives are base-generated in their observed position, and do not undergo movement in order to get there.

4.1 Two approaches: base-generation or movement

Analyses of correlative formation in the literature broadly fall into two classes: those arguing that correlatives undergo movement from a clause-internal position to the clause's edge, and those arguing that the correlative enters the structure exactly where it appears on the surface.

4.1.1 Movement from inside the CC

Mahajan (2000) and Bhatt (2003) argue that Hindi correlatives are derived by moving the RC from a position internal to the CC. The key difference between them is how the RC is first merged. For Bhatt, the correlative starts as an adjunct to the demonstrative phrase (DemP) and moves to become an adjunct to IP:

(22)   [$_{RC}$[jo   CD]$_i$ sale-par hai]$_i$ Maya [us   CD-ko]$_i$ khariid-egii
           REL CD   sale-on is   Maya   that CD-ACC buy-FUT
        'Which CD is on sale, Maya will buy that CD.'

(Bhatt 2003: 486, ex. 1a)

(23)
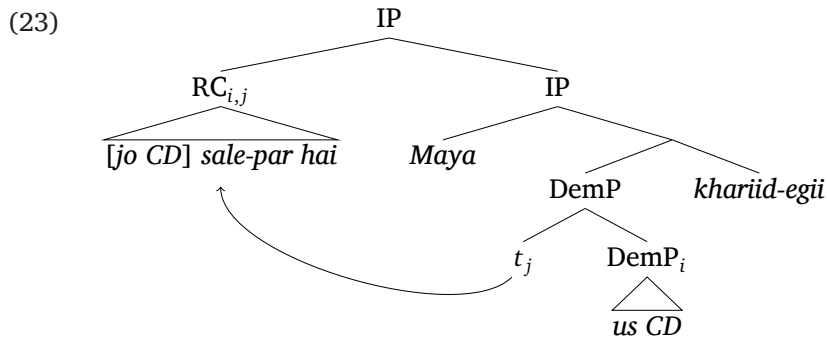
In support of a movement-based analysis, Bhatt shows that correlative constructions in Hindi exhibit a number of locality effects. To give just one example, a correlative and its demonstrative correlate cannot be related across an island boundary:

(24) *[jo   vahaaN rah-taa   hai]$_i$ mujh-ko [vo   kahaanii [$_{RC}$ jo   Arundhati-ne
       REL there   stay-HAB is   I-DAT   that story   REL Arundhati-ERG
       us-ke$_i$-baare-meN likh-ii]] pasand hai
       that-about   wrote   like   is
       'Who lives there, I like the story that Arundhati wrote about that boy.'

(Bhatt 2003: 500)

The low base position of the correlative is supported by the fact that the correlative plus its correlate can actually appear as a constituent in Hindi:

(25) Ram-ne   [[$_{RC1}$jo laRkaa tumhaare piichhe hai] [$_{DemP1}$us   laRke-ko]] [[$_{RC2}$jo   kitaab
     Ram-ERG   REL boy   your   behind   is   that boy-DAT   REL book
     Shantiniketan-ne chhaapii thii] [$_{DemP2}$vo   kitaab]] dii
     Shantiniketan-ERG printed   was   that book   gave
     'Ram gave the book that Shantiniketan had published to the boy who is standing behind you.'
     (Lit. 'Ram gave [[which book Shantiniketan had published] that book] to [[which boy is behind you] that boy].')

(Bhatt 2003: 507)

This low position is *not* clause-peripheral (instead, it is correlate-peripheral, so to speak); Bhatt argues that this is best understood as the base position in all correlatives, simply surfacing in this example without the typical movement.

   Mahajan (2000) also proposes a movement-based approach, but with different motivation: he aims to derive all RCs in Hindi from headed relatives, uniting all surface types in the language into a uniform base structure. The left-edge position of correlatives is produced via movement of

the RC from within this headed structure. In (26) I present one version[13] of Mahajan's approach, adapted from Mahajan (2000: 214–215) to fit example (22) above.

(26)

DemP*~j~* IP

us CP *Maya* DemP*~j~* *khariid-egii*

~~CD*~i~*~~ IP *us* CP

[*jo CD*~i~*] sale-par hai* *CD*~i~* IP

~~[jo CD*~i~*] sale-par hai~~

copy
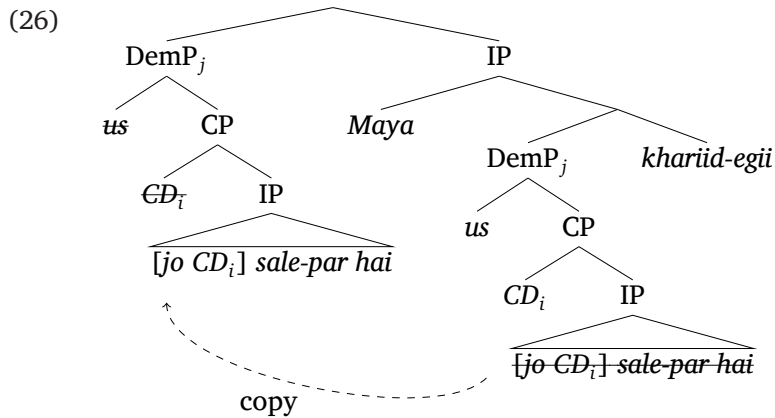
Note that Mahajan is not explicit about the landing site of movement, except to say that it is an instance of scrambling. What matters for our present purposes is that it is a movement account. (As I will argue, the Hittite facts do not motivate a movement account, so we will not need to worry about these more minor differences.)

4.1.2 Base generation as a clausal adjunct

In contrast to these movement-based accounts, others treat the correlative as base-generated in its observed position at the left edge of the CC. Some regard this as an adjoined position. Srivastav (1991)/Dayal (1996) and Bhatt (2003) assume that Hindi correlatives adjoin to IP:

(27)

IP

RC*~i~* IP

[*jo CD*] sale-par hai* *Maya* DemP*~i~* *khariid-egii*

us CD
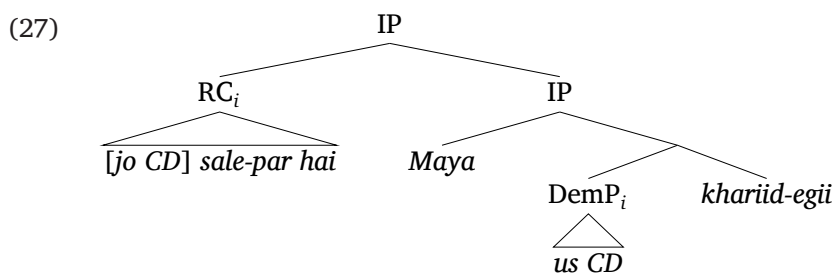
Izvorski (1996) also assumes a base-generated adjunction approach to correlatives in the Slavic languages and Modern Greek, although for her it is adjunction to CP because the correlate occurs in Spec-CP as the result of wh-movement:

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[13] As Mahajan (2000: 208) notes, Hindi correlatives permit the head noun to be realized in the RC, in the CC, or both. Additionally, the RC itself may appear with a demonstrative. Mahajan's account exploits the copy theory of movement to generate all of these possible configurations through different (sometimes discontinuous) deletions.

(28)   a.   Russian

[$_{RC}$Kogo ty   predložiš'] togo$_i$ my vyberem t_i
        REL you suggest   that.one we will.appoint
'We will appoint who you suggest.'

<div align="right">(Izvorski 1996: 146)</div>

b.
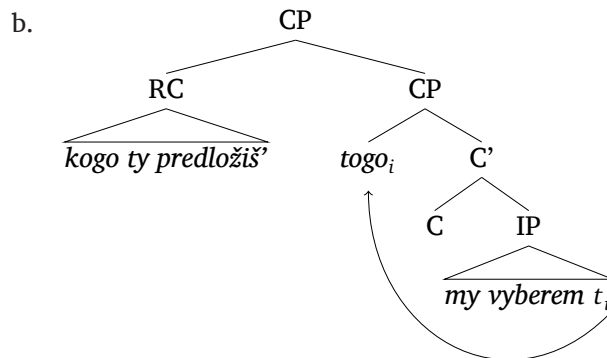
Under these analyses, the correlate is a variable bound by the RC. Dayal (1996: 184–185) explains the presence of locality effects by arguing that this variable behaves like variables created by movement in requiring local binding; it is essentially a pronounced trace. Izvorski (1996: 144) agrees with this analysis, noting that the correlate moves overtly in the Slavic languages. Thus, both scholars use movement (or a movement-like relation, in Dayal's case) to derive the locality effects observed in Hindi and Slavic.

A variant of the base-generation approach is proposed for Hungarian by Lipták (2009a). She observes that correlatives in Hungarian share a number of distinctive properties with hanging topics in other languages, such as a lack of locality effects. On this basis, she argues that Hungarian correlatives may be seen as a kind of hanging topic, only weakly integrated into the CC. I will return to the differences in structural position between this and other accounts in section 5. For the moment, it is sufficient to recognize this as another base-generation account.

Now let us turn back to the Hittite evidence. Over the next few sections, I will show that a movement account is incompatible with the observable properties of Hittite correlatives, and that base generation is the better approach.

4.2 Correlatives underivable by movement

4.2.1 Multiple correlatives

Multiple correlatives like (29) are straightforwardly accommodated by a base-generation approach.

(29) nu   kuiš$_i$ kuedani$_j$ arzananza   ēšta nu = šši$_j$ *pro$_i$* NUMUN.ḪI.A kuit
     CONN REL.NOM   REL.DAT tenant.farmer was CONN = him   seed   REL
     [(an)]iyat …
     sowed
     'And whoever$_i$ has been made a tenant farmer to whomever$_j$, the seed that (he$_i$) has sown
     for him$_j$, …'

<div align="right">(KUB 56.1 i 28–30 (NH); Otten & Souček 1965: 30)</div>

The RC is peripheral to the CC from the beginning and establishes relations with the individual correlates in a parallel fashion, in the same manner as with single correlatives.

By contrast, multiple correlatives are incompatible with movement approaches like those of Mahajan (2000) and Bhatt (2003). These approaches start with the RC forming a constituent with the correlate. However, this is impossible to achieve if the RC matches to two separate correlates: the clause cannot merge to both correlates at the same time. Bhatt acknowledges this, and assumes that multiple correlatives are base-generated in place rather than moved. This differs from his treatment of single correlatives, but he justifies the difference by showing that multiple correlatives do not show locality effects in Hindi, unlike single correlatives. Mahajan does not discuss multiple correlatives, but it is readily apparent that they cannot be reconciled with the headed-relative origin that he proposes for single correlatives, given the presence of multiple relative NPs.

4.2.2 Frame relatives

In much the same way that movement approaches cannot generate multiple correlatives, they also cannot accommodate frame relatives like (14), repeated as (30).

(30) kuiš ŠEŠ.MEŠ-n = a NIN.MEŠ-n = a ištarna idālu iyazi nu   LUGAL-waš ḫaraššanā
     REL brothers = and sisters = and   among evil does CONN king's   head.ALL
     šuwāyezzi nu   tuliyan ḫalzišten
     looks   CONN assembly summon.2PL.IMP
     'Anyone who does evil among (his) brothers and sisters and looks to the king's head (with hostile intent), summon the assembly!'
     If his testimony is dismissed, he shall pay with his head.

<div align="right">(KBo 3.1 ii 50–51 (OH/NS); Hoffmann 1984: 34)</div>

The referent of the RC plays no syntactic or semantic role in the CC. Thus, there is nowhere that the RC could have been generated inside the CC. A movement-based account is ruled out because there is no viable starting point. The only option for such a construction is base generation.

If the construction has a pseudo-correlate, the situation is not as straightforward. A related NP inside the CC could be seen as a potential starting point for movement (illustrated in (32)).
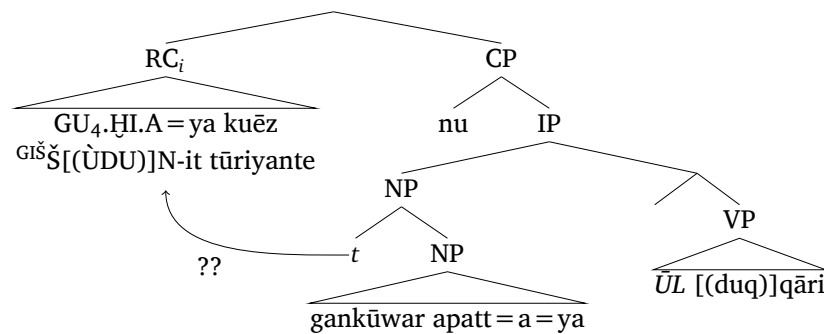
(31)   *The weight of the base does not matter.*

GU₄.ḪI.A＝ya kuēz   ᴳᴵˢŠ[(ÙDU)]N-it tūriyanteš nu   gankūwar apatt＝a＝ya

cows＝also   REL.ABL yoke.ABL   yoked   CONN weight   that＝also＝also

ŪL [(duq)]qāri

not matters

'And also the yoke with which the cows are yoked, that weight too does not matter.'

(KBo 4.1＋58.17 Vo 11–13 (?/NS); Görke 2012)

(32)

However, this is not the best analysis. We would need to assume that the syntactic constituency involved (whether Bhatt's (2003) adjunction or Mahajan's (2000) underlying headed relative) would be compatible with a variety of referential relationships, ranging from identity to more indirect relationships such as set-member (12), part-whole (13), and physical property (31). In my view, the costs of this assumption outweigh the meager potential benefit (one which does not rescue the movement approach wholesale, only for a subset of data). These kinds of semantic association are very familiar in inter-sentential anaphora (the "bridging" of Clark (1977) and Asher & Lascarides (2003)), and I think that is a much more straightforward and natural way to model this phenomenon. (I will expand on the anaphora idea below.)

4.2.3 Combined single and multiple correlatives

Base generation of single correlatives also significantly simplifies the account needed to explain example (17), repeated below, in which a multiple correlative and a single correlative are combined and jointly matched to a single correlate:

(33)   *Furthermore, concerning the images of you gods which are of silver and gold,*

nu＝ššan   kuedani DINGIR-*LIM*-ni kuit   tuēkki＝šši anda wezz[ap]an

CONN＝PTC REL.DAT god.DAT   REL.NOM body＝his on   worn.out

DINGIR.MEŠ-š＝a kue *UNUTE*.MEŠ   wezzapanta n＝at   anzel iwar EGIR-pa

gods.GEN＝also   RELaccoutrements worn.out   CONN＝them us   like   back

ŪL kuiški   neuwaḫḫa[n ḫart]a

not anyone renewed   has

'whatever is worn out on whichever god's body, plus whatever accoutrements of the gods are worn out, no one has renewed them like us.'

(KUB 17.21 i 15'–17' (MH/MS); Rieken et al. 2016a)

Based on what we have already seen, it is impossible to derive this construction by movement. Given that the correlate corresponds to the union of the two RCs and that the multiple correlative must be base-generated, the single correlative must also be taken as base-generated. Otherwise, we would have a bizarre scenario where half of the correlate's antecedent was associated to it by underlying constituency and the other half by an anaphoric relation, which seems entirely implausible. Importantly, this forces us to derive the single correlative by base generation.

4.2.4 The implication for single correlatives

We have now seen that multiple correlatives and frame relatives can only be naturally explained using a non-movement approach to correlative formation. Does the base generation of these types necessitate the same treatment in *all* correlatives? Bhatt (2003) rejects a unified treatment for Hindi, treating multiple correlatives as base-generated but single correlatives as movement-derived. However, in section 3.4 we saw that there is good reason to treat all three types as the same phenomenon and therefore that we should pursue a single derivation for all three. (We saw in example (33) that there is positive evidence that this kind of associative reasoning is justified.) Thus, if multiple correlatives and frame relatives are base-generated, then we must also assume base generation for the third type, namely basic single correlatives.

4.3 Lack of locality effects

One of the standard methods for diagnosing the presence or absence of movement is to test for locality effects such as island violations or reconstruction effects, or lack thereof. In our case, this methodology comes with a caveat. For an extinct/corpus language like Hittite, attested only in written records, we do not always have access to the kinds of diagnostics that are available for living languages. Since we cannot solicit judgments from native speakers, we are at the mercy of what happens to have been recorded and to have survived.

I am not aware of any attested Hittite constructions that would serve as a test for island effects. This is not conclusive evidence in either direction: maybe there are no examples because they would cause island violations (under a movement account), or maybe it would not cause an island violation and the absence is simply an accident of attestation. However, there are examples that argue against the presence of reconstruction effects; this fact, first discussed by Lyutikova & Sideltsev (2020: 59–60), supports a base-generation approach. The grammaticality of examples like (34) shows that correlatives do not reconstruct into the CC.

(34) [$_{RC}$kuin = za   DUMU-an $^{m.d}$LAMMA-aš$_i$ malaizzi]$_j$ nu   *pro$_i$ INA* KUR $^{URU.d}$U-tašša
       REL = REFL son   Kurunta   prefers   CONN   in   land Tarḫuntašša
       LUGAL-eznani apūn$_j$ tittanuddu
       kingship.LOC him   install.3SG.IMP
       'Whichever son$_j$ Kurunta$_i$ prefers, let (him$_i$) install *him$_j$* in the kingship in the land of Tarḫuntašša.'

                                   (Bo 86/299 ii 92–93 (NH); Otten 1988: 20)

If reconstruction into the object position were to happen in (34), we would predict a Condition C violation, since the null-pronoun subject would c-command the correlative and bind the name Kurunta (written $<$ᵐ·ᵈLAMMA-aš$>$). I assume from the fact that this sentence is attested that this construction is grammatical, so we conclude that the correlative does not reconstruct. This poses no problem for a base-generation account, since the name itself would never be in the c-command domain of the pronoun at any point. To square this with a movement approach, one would need to assume that the lower copy is not interpreted.

4.4 The correlate is an anaphor

The nature and behavior of the correlate itself also gives us reason to prefer a base-generation approach for correlative formation in Hittite. As we will see presently, the correlate is a normal anaphoric NP, mirroring inter-sentential anaphors in both formal distribution and interpretation.

4.4.1 Possible types of correlate

Correlates in Hittite can be any kind of nominal element, as standardly observed (cf. Hoffner & Melchert 2008: 424 and Sideltsev 2016: 88). They can be null pronouns[14] (35a), clitic pronouns (35b), tonic pronouns (35c), or NPs with a lexical noun (35d):

(35) a. Null pronoun
   ANA PANI ABBA.ḪI.A = *YA* ABBA [(AB)BA.ḪI.(A) (kuiēš)] kūrur ešer
   before fathers = my forefathers REL hostile were
   ammug = ma ***pro*** takšulāir
   with.me = TOP they.were.at.peace
   'Those who were hostile in the time of my fathers and forefathers, with *me* **(they)** were at peace.'

   (KUB 1.1 iv 58–59 (NH); Otten 1981: 26)

   b. Clitic pronoun
   ᴳᴵˢTUKUL = ma kuin apiya ḫarkun n = **an** ḫali[(ššiyanun)]
   weapon = TOP REL then I.held CONN = it I.decorated
   'The weapon which I held then, I decorated **it**.'

   (KUB 1.1 ii 46 (NH); Otten 1981: 12)

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[14] Hittite is a pro-drop language, permitting clauses without an overt subject because the verb morphologically encodes person and number of the subject. For specific details, see the discussion below as well as Garrett 1990; 1996. For these non-overt subjects, I am assuming the presence of a phonetically null pronoun *pro* occupying the relevant structural position. This linguistically real but phonologically empty pronoun contrasts with frame relatives, which genuinely lack a correlate; cf. section 4.2.2.

c. Tonic pronoun

nu   kuit   [LU]GAL-uš tezzi   nu   **apāt** iyami
CONN REL   king   says   CONN   that   I.do
'Whatever the king says, ***that*** I will do.'

(KBo 17.4 ii 12'–13' (OH/OS); Montuori 2017)

d. Lexical noun NP

DINGIR-*LIM* = ma = kan kuedani *ANA* ᴰᵁᴳGÌR.GÁN$_i$ anda arranzi   n = ašta
god = TOP = PTC   REL.LOC LOC vessel   in   they.wash CONN = PTC
wātar$_j$ kuit *ANA* ᴰᵁᴳGÌR.GÁN$_i$ anda n = at$_j$ *ANA PANI* DINGIR-*LIM*
water REL LOC vessel   in   CONN = it before   god
apēz = pat   *IŠTU* ᴰᵁᴳGÌR.GÁN$_i$ dāi
that.ABL = FOC ABL   vessel   puts

'The vessel$_i$ in which they wash the deity, the water$_j$ which is in ***the vessel****$_i$*, he puts it$_j$ before the god with *that* vessel$_i$.'

Paraphrase: [The water$_j$ which is inside [the vessel$_i$ in which they wash the deity]], he puts the water$_j$ before the god with that vessel$_i$.

(KUB 27.16 i 30–33 (NH); Beckman 2015: 46)

It has often been said that the correlate in a correlative construction must contain a demonstrative, the so-called "demonstrative requirement" (Srivastav 1991: 650; Lipták 2009b: 4; Leung 2009: 313–314). In my view, demonstrative correlates are by no means definitional to correlative constructions. I regard the construction as defined by the biclausal topic-comment structure involving an RC. The assumption of a demonstrative requirement is unwarranted, an artifact of the dominance of Hindi in the literature. Even though Hittite does have demonstratives (stems *kā-*, *apā-*, and *aši* + [15]), they are rare in correlates. *apā-* is well attested in correlates *as a third-person pronoun*, but (as noted below) its use is motivated by information-structural prominence (e.g., contrastive focus) rather than by any requirement of the grammar with respect to correlatives. In informationally neutral contexts, the correlate is either a null or clitic pronoun; these are Hittite's basic anaphoric pronouns, not demonstratives.

4.4.2 Distributed just like ordinary anaphors

Motter (2020: 218–223) shows that the form of the correlate is determined by the general rules governing the distribution of anaphoric NPs in Hittite. There is no evidence for any rules that are specific to correlative constructions (such as a demonstrative requirement); the correlate's form is determined independently of the fact that it is referentially linked to a correlative.

    The distribution of null pronouns and clitic pronouns for correlates depends on the same principles that govern the distribution of these items as ordinary anaphoric NPs. In the case of

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[15] On this notation, see Goedegebuure 2014: 2, fn. 1.

subjects, the distribution depends on the argument structure of the clause's predicate. Hittite is a language that permits pro-drop, but not completely. As Garrett (1990; 1996) has shown, unaccusative predicates (36a) regularly take clitic subjects, while unergative and transitive (36b) predicates never permit clitic subjects; thus, Hittite is pro-drop except in the case of unaccusative predicates.

(36) a. anda = **at** = kan   ḫarakdu
          within = it.NOM = PTC perish.3SG.IMP
          'Let **it** perish within.'

                                      (KUB 33.8 iii 14' (NH); Rieken et al. 2009a)

      b. nu = wa = mu   ***pro*** iwaru kuit   pāi
          CONN = QUOT = me   dowry   what   gives
          'What dowry will (he) give me?'

                                      (KUB 17.9 i 30 (NH); Rieken et al. 2009b)

The exact same distribution holds for correlatives: clitic subject correlates (37a) appear with unaccusative predicates, while null subject correlates (37b) appear with unergative and transitive predicates.

(37) a. nu = kan   kēuš kuiēš ᴸᵁᴹᴱˢNINDA.GUR₄.RA-uš ᴸᵁᴹᴱˢišpantuzziyaliuš tēpawēš
          CONN = PTC these REL   bread.offerers   libation.pourers   few
          āššanteš   n = **at**[= mu   (le   akk)]anzi
          remaining CONN = they = me PROH die.3PL.IMP
          'These few bread-offerers and libation-pourers who still remain, let **them** not die on me.'
                                      (KUB 14.8 Vo 18–19 (NH); Rieken et al. 2017a)

      b. [nu = mu = kan] DINGIR-*LUM* kuiš kēdani   pedi   tittanut
          CONN = me = PTC god   REL   this.LOC place.LOC installed
          nu = mu = kan   ***pro*** *ŪL* kuitki   šiwariya[zi
          CONN = me = PTC   not   anything   denies
          'The god who installed me in this place, **(he)** does not deny me anything.'
                                      (KUB 21.38 Vo 15–16 (NH); Hoffner 2009: 289)

Objects in Hittite tend to be overt, but null objects can occur under certain conditions (Inglese & Rizzo & Pflugmacher 2019); consistent with this fact, object correlates in Hittite are mostly overt but there are some examples — though much fewer — featuring null object correlates:

(38) kuiš šagaīš kīšari ta   LUGAL-i MUNUS.LUGAL = ya ***pro*** tarweni
      REL   sign   occurs CONN to.king   queen = and   we.tell
      'Whatever sign occurs, we tell **(it)** to the king and queen.'
                                      (KBo 17.1 iv 9 (OH/OS); Montuori 2017)

The distribution of tonic pronouns and lexical NPs is not governed by argument structure of the predicate, but is instead licensed by both information structure and discourse factors (Goedegebuure 2014: 379–434). A full enumeration of these factors is beyond the scope of this paper, so I will limit the discussion to one notable scenario: contrastive focus. When expressing a referent in contrastive focus, the NP takes the form of either the tonic pronoun *apā-* or an NP containing a demonstrative, as in the following non-RC example:[16]

(39) *I have just sent you my adorned substitute. She is better than me. Pure she is,* that *one, radiant is* that *one. She is endowed with everything.*

nu = kan   DINGIR-*LIM* EN = *YA* **apūn** menaḫḫanda uški   nu   *PANI*
CONN = PTC god   lord = my her   toward   look.2SG.IMP CONN before
DINGIR-*LIM* EN = *YA* **kāš MUNUS-aš** weḫattaru
god   lord = my this woman   go.back.and.forth.3SG.IMP
'O god, my lord, look at **her** (instead of me)! Let **this** **woman** (instead of me) go back and forth before (= attend to) the god my lord.'

<div align="right">(KBo 4.6 Ro 14'–15' (NH); Goedegebuure 2014: 401)</div>

Correlates in contrastive focus also take one of these forms, such as the tonic pronoun in the following example:

(40) *Whichever son Kurunta prefers — whether he is a son of that woman or whether he is the son of some other woman —*

nu   kuiš DUMU-aš *ANA* m.dLAMMA ZI-anza kuin = za   DUMU-an m.dLAMMA-aš
CONN REL son   to   Kurunta will   REL = REFL son   Kurunta
malaizzi nu   *INA* KUR URU.dU-tašša   LUGAL-iznani **apūn** tittanuddu
prefers CONN in   land Tarḫuntašša   in.kingship him   install.3SG.IMP
'whichever son is Kurunta's will, whichever son Kurunta prefers, let him (= Kurunta) install **him** in the kingship of the land of Tarḫuntašša.'

<div align="right">(Bo 86/299 ii 92–93 (NH); Otten 1988: 20)</div>

4.4.3 Anaphora supports a base-generation account

We have just seen that correlates in Hittite correlative constructions have syntactic distributions that are no different from ordinary anaphoric NPs. Moreover, the set of possible forms the correlate can take is also the full range of forms available for inter-sentential anaphora. The presence of a correlative seems to have no effect whatsoever on the distribution of correlate types. As Motter (2020: 224) argues, the most straightforward explanation for this is to assume that there is no special relation between the correlative and its correlate at all — the correlate is simply an anaphoric NP that corefers with the correlative.

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[16] The idea that contrastive focus requires strong pronouns rather than weak ones has been claimed cross-linguistically, not just for Hittite. Cardinaletti & Starke (1999: 161–163) argue against such a generalization on the grounds that weak pronouns *can* be contrastively focused in the right scenarios; I am not aware of any such examples in Hittite.

Treating the correlate link as simple anaphora provides a natural explanation for matching violations and pseudo-correlates. As a discourse-level phenomenon that can exploit an interlocuter's capacity for pragmatic inference, anaphoric relations across sentences can range from identity to fairly indirect associations. This flexibility allows the speaker to use correlates that are not identically coreferent with the correlative, or to omit them entirely if a bridging association with the event in the following clause is evident.

Anaphora also easily explains the absence of a demonstrative requirement in Hittite. Demonstrative anaphors in Hittite occur under specific information-structural conditions, as just discussed. If the correlate is an anaphor, then the same restriction will be true of the correlate; far from required, a demonstrative will only be permitted under certain conditions.[17]

If the relation between the correlative and the correlate is just anaphora, then there is no reason to assume that the two form a constituent within the clause at any point. This is a welcome conclusion, because clitic and null pronouns are only anaphoric and do not generally form constituents with other elements. That is, we do not find clitic pronouns co-occuring with non-predicative modifiers like adjectives (^{x}=*aš šalliš*[18] 'he big/big he') or nouns (^{x}=*at* KUR-*e* 'it land').[19] Suppose we were to assume that correlatives originated in a constituent with the correlate, as proposed by Bhatt (2003: 497) (cf. example 23):
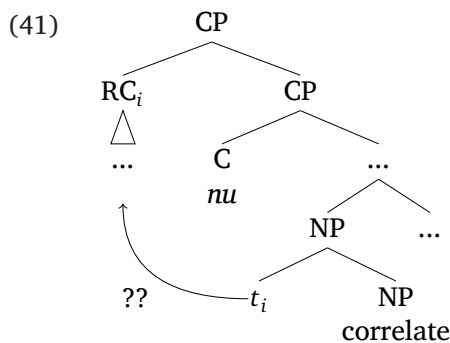
(41)

(i) ^{d}UTU-az utnē [kuit k]uit=pat araiš n=**uš** **ḫūманduš**=p[at ḫ]u[llanu]n
     sun.ABL land whichever=FOC rose.up CONN=them.ACC all.ACC=FOC I.defeated
     'Whatever land rose up from the east, I defeated **them all**.'

(KBo 3.22 Ro 11–12 (OH/OS); Neu 1974: 10)

This strikes me as a special case, and I do not think it reasonable to assume on this basis that clitic and null pronouns are more broadly modifiable, e.g., by a RC as we would require here.

In such a scenario, we would not expect to find weak anaphoric pronouns as correlate, since they do not take modifiers. But the exact opposite is true: clitic and null-pronoun correlates are common. Indeed, clitic correlates are especially well represented, more than any other type.

These considerations favor a non-movement approach to correlative formation. A movement approach such as those of Mahajan (2000) or Bhatt (2003) requires the correlative to form a constituent with the correlate at the beginning of the derivation; as we have seen, this is not consistent with the typical behavior of clitic and null pronouns. Moreover, anaphora is in general a non-local relation. If the correlative-correlate relation is simply one of anaphora, then no movement is required to establish the connection between them. Thus, we should conclude that Hittite correlatives are simply base-generated in their left-edge position.

4.5 Summary

In this section, we have compared two theoretical approaches to correlative formation: the base-generation approach, in which the RC is base-generated in its surface position, and the movement approach, in which the RC gets to that surface position by moving from an original position forming a constituent with the correlate. I provided evidence that correlatives in Hittite are not moved. Two subtypes of correlative, namely multiple correlatives and frame relatives, cannot be derived by movement because a proper starting position does not exist, and the goal of a unified treatment of all correlatives requires a base-generation analysis for basic correlatives as well. The absence of a Condition C violation in example (34) also suggests against a movement analysis. Finally, I showed that the correlate is a garden-variety anaphoric NP, fitting the distributional and interpretive profile of inter-sentential anaphors. The lack of any special properties (such as a demonstrative requirement) and the nature of the correlate as an anaphor favors a base-generation approach.

5 Hittite correlatives are paratactic

Now that we have seen evidence that Hittite correlatives are base-generated at the left edge of the CC rather than undergoing movement from within the clause, there is a natural follow-up question: where exactly are they base-generated? I argue for a paratactic approach, in which correlatives in Hittite are not syntactically subordinate to the CC. The correlate is separate and is not syntactically integrated into the CC. The connection between the two clauses lies at the discourse level instead of the syntactic level. In this section, I present evidence that favors this approach over those that make the correlative subordinate to the CC.

It is worth remarking here on a matter of terminology. I am claiming that correlatives are independent of the CC from a constituency perspective, i.e., syntactic independence. This is

what is meant by calling them non-integrated. However, there is another sense of the word "independent" which denotes a clause that can stand on its own as a complete informational contribution to the discourse, i.e., semantic independence. With regard to this sense, I regard correlatives as *dependent* clauses, not independent, because their discourse utility (as a topic element) is not complete without the CC (the comment). Part of my goal in this paper is to demonstrate that Hittite correlatives are syntactically independent *despite* being dependent in the discourse sense. To avoid confusion between these two senses, I will use "independent" only in the semantic sense — assuming no entailments about syntactic structure. For syntactic independence, I will instead speak in terms of "parataxis" and "integration".

5.1 Syntactic similarity to independent clauses

Recall, as mentioned above in section 3.1, that there are very few syntactic differences between preposed dependent and independent clauses in Hittite (Inglese 2016: 11). The only standout difference is that dependent clauses feature a subordinator that signals their dependent status. Various syntactic properties of Hittite independent clauses are also found in preposed dependent clauses, including correlatives. These properties include initial sentence connectives (cf. (35c)) and a left periphery hosting fronted elements (35a). It is also possible for correlatives to iterate such that one correlative activates a referent for the next one, which then activates a referent for the main clause (35d).

The fact that dependent and independent clauses are barely different, syntactically speaking, significantly erodes the distinction between them at the syntactic level. This is reminiscent of the presence of *main clause phenomena* observed in some adverbial clauses in languages like English and German. Haegeman (2012: 155–172) distinguishes two types of adverbial clause, *peripheral* and *central*, based on the presence or absence, respectively, of main clause phenomena. She explains the difference in terms of how integrated the adverbial is to the main clause: for her, peripheral adverbials are less integrated into the structure. She even suggests (referencing earlier work such as Haegeman 1991) that they may be completely separate from the main clause: a paratactic approach.

The presence of main clause phenomena in peripheral adverbials mirrors the Hittite situation. This suggests that the same approach should be taken for Hittite correlatives (and dependent clauses in general). This means that Hittite correlatives should have the same syntactic status as independent clauses, which I believe is best framed in a paratactic model.

5.2 Correlatives as clausal hanging topics

The correlative construction is similar to another construction type in Hittite, Hanging Topic Left Dislocation:

(42) ᵐH̬uidudduwalliš n = an   ᵁᴿᵁŠallašna   ašašer
      H̬uidudduwalli   CONN = him in.Šallašna they.settled
      '(As for) H̬uidudduwalli, they settled him in the city of Šallašna.'
                              (HKM 113 Vo 14–15 (MH/MS); Hoffner & Melchert 2008: 408)

The following properties are shared by hanging topics (HT) and correlatives:

(43) Shared properties of HTs and correlatives
      (i) Same functional role: activate a discourse referent as the discourse topic in a subsequent clause.
      (ii) Associated with a coreferent correlate that is governed by the same argument-structural, semantic, and pragmatic factors that apply to Hittite anaphora in general.
      (iii) A discourse connective (e.g., *nu*) often separates the dislocate from the CC.

Comparing Hungarian correlatives to cross-linguistic properties of HTs, Lipták (2009a: 424–425) argues that Hungarian correlatives may be seen as a kind of HT. This is also true for Hittite: the similarities between the two constructions demonstrate that they are two versions of the same phenomenon. That is, correlatives are just HTs that take the form of a free RC. Canonical HTs occur when just a simple noun phrase (such as a name) is sufficient to identify the referent, and correlatives occur when a full RC is necessary to adequately identify the referent.[20]

What can the similarity with HTs tell us about the syntax of correlatives? HTs have a number of properties that suggest detachment from the CC. For example, as already discussed, the correlate can be any type of NP. This distinguishes HTs from other types of left dislocation, such as Clitic Left Dislocation in the Romance languages, which can only involve certain types of correlates (e.g., clitic pronouns) and therefore suggest the involvement of a syntactic restriction.

A second noteworthy property is that HTs need not match the case of the correlate, but can instead take default nominative case (cf. Schütze 2001: 223 on default case with left dislocation):

---

[20] This may help explain why correlatives seem to be far more numerous in the attested Hittite record than pure HTs. It seems reasonable to suspect that proper identification of the referent would often require more information than an NP by itself can provide. One might speculate that this would be especially true of written documents in certain genres (e.g., laws and histories) where the speaker could not necessarily assume the addressee to have the required shared knowledge. It is not clear to me whether we would expect a similar imbalance in frequency between correlatives and pure HTs in spoken Hittite.

(44) ᵐḪuidudduwalliš   n = an   ᵁᴿᵁŠallašna ašašer
      Ḫuidudduwalli.**NOM** CONN = him.**ACC** in.Šallašna they.settled
      '(As for) Ḫuidudduwalli, they settled him in the city of Šallašna.'
                          (HKM 113 Vo 14–15 (MH/MS); Hoffner & Melchert 2008: 408)

Default case is not observed with ordinary fronted topics in Hittite, which routinely reflect the case assigned within the clause (cf. Hoffner & Melchert 2008: 407 for various examples with different cases, as well as non-NP fronted items). The fact that case mismatch is possible suggests that the HT is removed enough from the clause to be exempt from case agreement.[21]

Other properties of HTs noted in the literature (e.g., Cinque 1997: 96; Lipták 2009a: 425) include lack of island violations or reconstruction effects. As it happens, none of the Hittite examples of ordinary HTs known to me are probative for these properties, so I cannot evaluate them for Hittite HTs. That said, we noted above (section 4.3) that correlatives do not show reconstruction-based Condition C violations.

These properties are observed in HTs cross-linguistically, and are generally recognized as evidence that HTs are separate from the CC in some notable way. I believe that the detached character of HTs should be interpreted as syntactic non-integration: the HT is not a subconstituent of the CC. It is simply a separate noun phrase that precedes the CC. The HT is therefore something akin to Haegeman's (1991) "orphans". The connection between it and the CC operates at the discourse level instead of at the syntactic level. This is why the HT is not governed by syntactic processes like agreement and locality. Similar proposals

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[21] It should be noted that there are HTs in Hittite that do show case matching. It is not clear to me what determines whether an HT shows case matching or mismatch. The phenomenon needs more investigation, but I will not attempt it here, as that is outside the scope of this paper. I will only suggest tentatively that this may be an anticipatory effect: planning ahead, the speaker anticipates using the correlate as, say, an object, and applies the attendant accusative marking to the HT. I do not believe that it must be syntactic agreement. See Schütze 2001: 209 for similar remarks on this phenomenon. Correlatives do not usually show case anticipation of this sort, but there is one example in my sample:

(i) *INA* ᵁᴿᵁGašipūra kuiuš   2 LÚ.MEŠ ᵁᴿᵁMalazziya [ᵐP]išišši[ḫ]lin [ᵐN]aištūwarrinn = a appanteš
    in Kašepura   REL.**ACC** 2 men   Malazziya Pišiššiḫli.**ACC** Naištuwarri.**ACC** = and captured.PTCP
    n = aš = šan   ŠU.ḪI.A = ŠU GÌR.MEŠ = ŠU = ya SIG₅-atten
    CONN = them.**ACC** = PTC hands = their feet = their = and   secure.2PL.IMP
    'The two men of Malazziya, Pišiššiḫli and Naištuwarri, who are held captive in Kašepura, secure them hand and foot.'

                                    (HKM 65 4–8 (MH/MS); Hoffner 2009: 217)
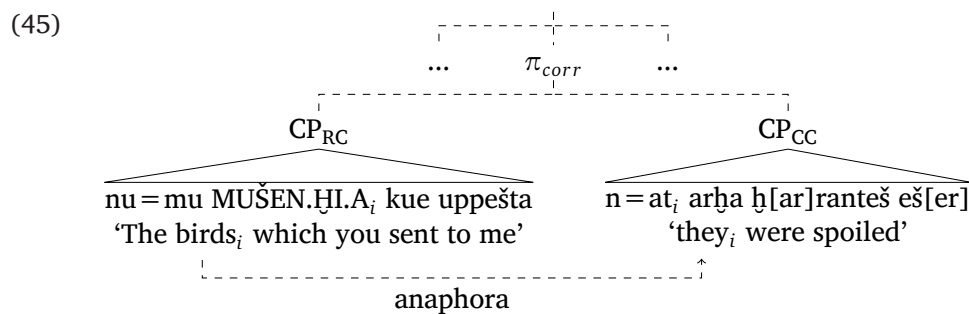
Here, the men's names and the Rel are accusative despite being the subject of the RC, anticipating the accusative of the CC.

have been advanced for other languages, such as Italian (Cinque 1997), German, and English (Shaer 2009).[22]

Since we are leveraging a similarity with HTs to gain insight into the nature of correlatives, a non-integrative treatment of HTs directs us to the same analysis of correlatives. This is the same basic approach taken by Lipták (2009a: 424–426), who argues that Hungarian correlatives are not fully integrated with the CC.[23] In the next section, I will explain how I interpret this approach in structural terms.

5.3 The syntactic and discourse structure of parataxis

I have just proposed a paratactic structure for Hittite correlatives. The syntactic dimension of this proposal is very straightforward, almost trivial: the RC and the CC are not syntactically integrated. The connection between them occurs at the discourse level. In the following representation, I distinguish the discourse level by using dashed lines, to make clear that it is a different form of connection from syntactic constituency (in solid lines). The entire correlative construction forms the discourse constituent π_{corr}, which is joined into the larger discourse.

(45)

$$\ldots \quad \pi_{corr} \quad \ldots$$

CP_{RC} — nu=mu MUŠEN.ḪI.A$_i$ kue uppešta
'The birds$_i$ which you sent to me'

CP_{CC} — n=at$_i$ arḫa ḫ[ar]ranteš eš[er]
'they$_i$ were spoiled'

anaphora

Given that the correlate relation is one of discourse anaphora, the formation of Hittite correlative constructions is aptly handled in a dynamic semantic framework. Here, I propose an extension of Segmented Discourse Representation Theory (SDRT). As presented in Asher & Lascarides 2003, SDRT models the interactions of event-describing clauses. My proposal starts from the intuition that HTs and correlatives are referential expressions fundamentally denoting an individual. As such, the HT/RC is more like an individual expression of type e than a propositional expression

---

[22] The exceptional status of HTs is recognized even by scholars who treat them as integrated into the clause, e.g., Giorgi (2015).

[23] Lipták does not go all the way to proposing full non-integration, on the grounds that the RC cannot be removed without seriously affecting the semantics and therefore there remains *some* manner of integration. I am committing more fully to the separation, because I think the interpretive issue is better regarded as a matter of discourse coherence and referent activation, rather than syntactic connectedness.

of type t.[24] Thus, we must extend the theory to accommodate individual-referring expressions as discourse constituents on their own.

5.3.1 Definitions

In dynamic semantics, a sentence is seen as a relation between an input discourse context and an output context. This can be notated $C_{input}[\![K]\!]C_{output}$, where K is the formula representing the sentence and C_{input}, C_{output} the contexts. A sentence can be thought of as a test on input contexts: an input passes the test if there is a valid output. I take the same basic view for the formula underlying an HT. However, an HT is not assertive and does not serve to test an input context. Using an HT means using an NP or RC as a referential expression to activate the referents satisfying the underlying formula. To capture this behavior, (taking inspiration from Asher & Lascarides's (2003: 50) treatment of questions), I define a function *ref* that maps the formula, given an input context, to the set of referents satisfying the formula in that context. In what follows, I use $x_1, \ldots, x_n$ for the variables corresponding to the Rels in an RC, or the head of a nominal HT; I abbreviate the formula underlying the HT/RC as a relation $P(x_1, \ldots, x_n)$. I define the semantic value of the HT/RC as follows:

(46) $C_{input}[\![ref]\!]([\![\lambda x_1 \ldots \lambda x_n P(x_1, \ldots, x_n)]\!]) = \{\langle [\![a_1]\!], \ldots, [\![a_n]\!]\rangle : \exists C'$ such that
        $C_{input}([\![a_1]\!]\ldots[\![a_n]\!]([\![\lambda x_1 \ldots \lambda x_n P(x_1, \ldots, x_n)]\!]))C'\}$

Note that this definition assumes a prior (or alternatively, concurrent) step of lambda abstraction on the variables $x_1, \ldots, x_n$, turning the formula into a relation.

The function *ref* thus maps a formula to a set of discourse referents satisfying it, creating a referring expression out of the formula. The CC applies a second condition to those referents. I model this with a discourse relation *HT* between the HT and the CC:

(47) $C_{input}[\![HT(\alpha, \beta)]\!]C_{output}$ iff
        (a) $\forall \langle [\![a_1]\!], \ldots, [\![a_n]\!]\rangle \in C_{input}[\![ref]\!]([\![\lambda x_1 \ldots \lambda x_n P_\alpha(x_1, \ldots, x_n)]\!])$
            $(C_{input}[\![([\![a_1]\!]\ldots[\![a_n]\!]([\![\lambda x_1 \ldots \lambda x_n P_\alpha(x_1, \ldots, x_n)]\!])) \wedge K_\beta]\!]C_{output})$
        (b) $\exists \langle y_1, \ldots, y_j \rangle \in U_\beta^j \exists F$ such that $F(x_1, \ldots, x_n) = \langle y_1, \ldots, y_j \rangle$ for some j

In words, this definition states that two constituents, labelled α and β, stand in an *HT* relation if and only if:

  (a) each n-tuple of referents comprising the HT/RC's semantic value satisfies the HT/RC's conditions ($P_\alpha(x_1, \ldots, x_n)$) (by definition) and the CC's conditions (K_β)
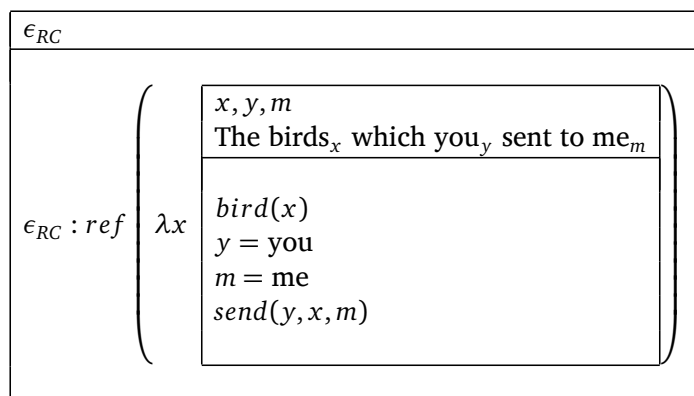
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[24] In my analysis, this property of being individual-referring distinguishes correlatives from other topic-comment structures with maximalizing semantics, such as conditionals.

(b)   there is some bridging function between the referents referred to by the HT/RC and some referents involved in the CC; crucially, not all referents of the HT/RC need to be resumed, hence "for some j".
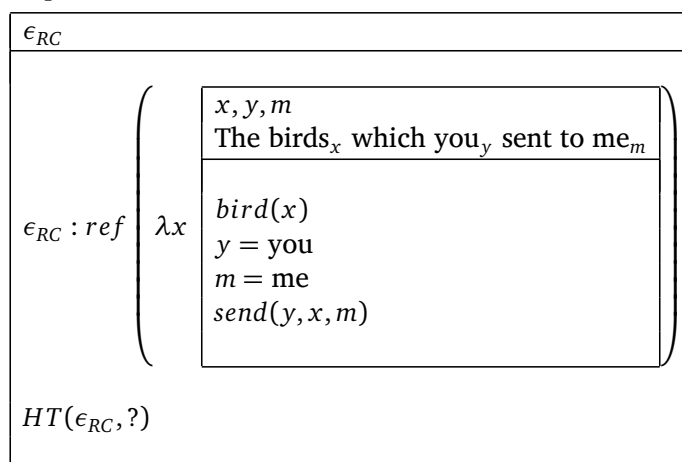
5.3.2 Correlative derivation example

Let us walk through an example derivation, using Segmented Discourse Representation Structures (Asher & Lascarides 2003) to represent discourse constituents. First, an RC is added to the discourse. Presumably, contextual clues (e.g., special prosody) would indicate the intended use as a referring expression. Accordingly, lambda abstraction is performed and the *ref* function applied. (The label ϵ below is meant to evoke "type e".)

(48)   Step 1:

$$
\boxed{
\begin{array}{l}
\epsilon_{RC} \\
\hline
\epsilon_{RC} : ref \left(\lambda x \boxed{
\begin{array}{l}
x, y, m \\
\text{The birds}_x \text{ which you}_y \text{ sent to me}_m \\
\hline
bird(x) \\
y = \text{you} \\
m = \text{me} \\
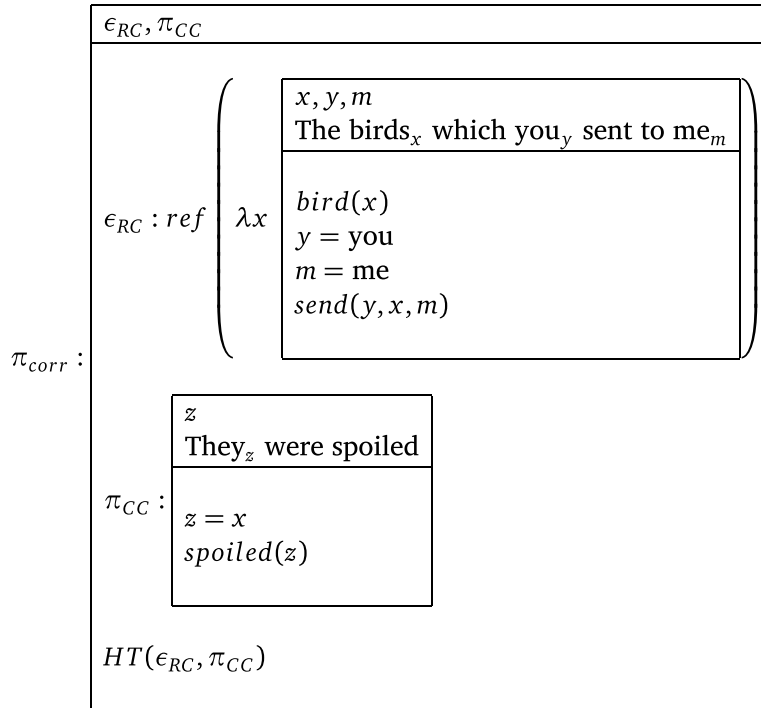send(y, x, m)
\end{array}
} \right)
\end{array}
}
$$

I assume that the use of *ref* implicates a pending *HT* relation with an underspecified second argument, respresenting the anticipated further comment. This unresolved relation is what encodes the RC's status as a dependent clause.

(49)   Step 2:

$$
\boxed{
\begin{array}{l}
\epsilon_{RC} \\
\hline
\epsilon_{RC} : ref \left(\lambda x \boxed{
\begin{array}{l}
x, y, m \\
\text{The birds}_x \text{ which you}_y \text{ sent to me}_m \\
\hline
bird(x) \\
y = \text{you} \\
m = \text{me} \\
send(y, x, m)
\end{array}
} \right) \\
\\
HT(\epsilon_{RC}, ?)
\end{array}
}
$$

The CC is then added to the discourse. Assuming it meets the definitional criteria of *HT*, we can infer that it is the missing second argument:

(50)   Step 3:

$$
\begin{array}{|l|}
\hline
\epsilon_{RC}, \pi_{CC} \\
\hline
\\
\pi_{corr} :
\begin{array}{l}
\epsilon_{RC} : ref \; \lambda x \left(
\begin{array}{|l|}
\hline
x, y, m \\
\text{The birds}_x \text{ which you}_y \text{ sent to me}_m \\
\hline
bird(x) \\
y = \text{you} \\
m = \text{me} \\
send(y, x, m) \\
\hline
\end{array}
\right) \\
\\
\pi_{CC} :
\begin{array}{|l|}
\hline
z \\
\text{They}_z \text{ were spoiled} \\
\hline
z = x \\
spoiled(z) \\
\hline
\end{array} \\
\\
HT(\epsilon_{RC}, \pi_{CC})
\end{array} \\
\hline
\end{array}
$$

The correlate is simply an open variable z awaiting a value. Valuation is performed by anaphora: a viable (and coherent) referent is sought within the accessible discourse constituents at the time the CC is added. Since the RC is accessible, its discourse referents are accessible; in this case, x is an appropriate semantic match. The correlate variable takes on the value, and the construction is complete.

Looking at correlatives from a typological and diachronic perspective, Belyaev & Haug (2020: 888–893) argue that correlatives based on *wh*-relativizers originate in paratactic conditionals with discourse anaphora, with a proposed discourse structure that resembles the one I have proposed above for correlatives synchronically in Hittite. If their diachronic scenario is correct, my conclusion would implicate that a paratactic configuration can be retained even after the first sentence grammaticalizes into an RC. (For reasons of space, I leave further investigation of the diachronic angle to another occasion.)

5.4 Topic to discourse segments

Additional evidence in support of a paratactic analysis comes from examples such as the following, where a full independent clause intervenes between the correlative and the clause containing the correlate. The intervening clause acts to set up the CC, but it has no relation to the correlative itself.
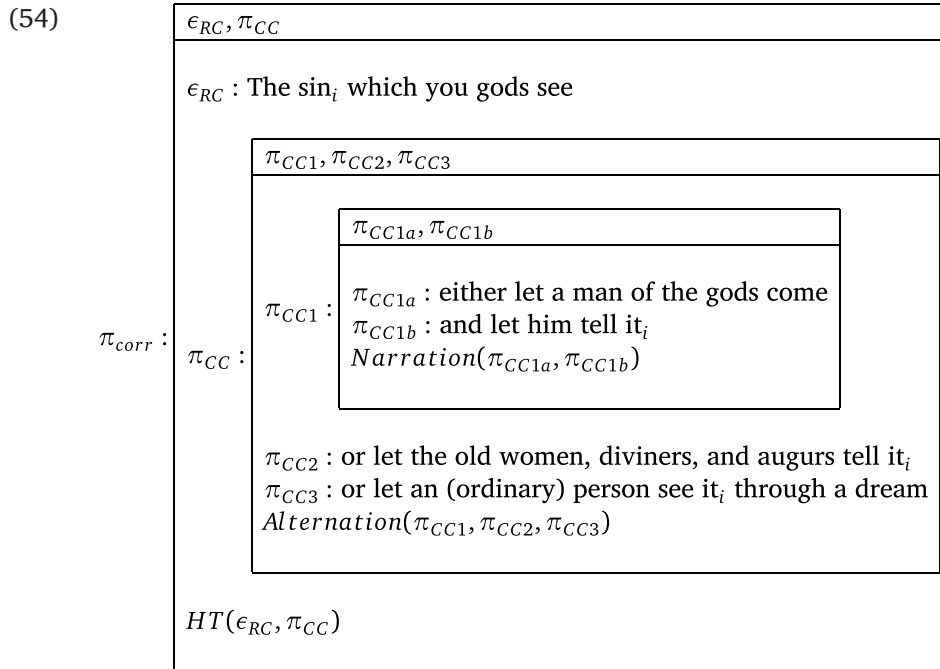
(51) nu   ^{GIŠ}IG kuiš ḫaši **nu**   **šuḫḫa parkiyanzi** n=an=kan   šarā SUD-anzi

      CONN door REL opens CONN roof   they.go.up   CONN=him=PTC up   they.draw

      'The one who opens the door, **they go up to the roof** and draw him up.'

                                           (IBoT 3.148 iii 13–14 (MH/NS); *CHD* P: 156 *s.v. park-* 2a)

(52) nu   DINGIR.MEŠ kuit waštul uškatteni **nu**   **naššu DINGIR.MEŠ-niyanza**

      CONN gods   REL sin   you.see   CONN either man.of.the.gods

      weddu   n=at   [(mema)]u našma=at ^{MUNUS.MEŠ}ŠU.GI ^{LÚ.MEŠ}AZU

      come.3SG.IMP CONN=it tell.3SG.IMP or=it   old.women   diviners

      ^{LÚ.MEŠ}[MUŠEN.DÙ] memiya[ndu] na[š]ma=at zašḫiyaz   DUMU.LÚ.U₁₉.LU

      augurs   tell.3PL.IMP   or=it   through.dream person

      aušdu

      see.3SG.IMP

      'The sin which you gods see, **either let a man of the gods come** and let him tell it, or let the old women, diviners, and augurs tell it, or let an (ordinary) person see it through a dream.'

                                           (KUB 24.3 + KBo 51.18b ii 19'–22' (NH); Rieken et al. 2016b)

The intervening clause disrupts the adjacency between RC and CC that is typical of correlative constructions. These examples are easily assimilated under the paratactic framework outlined above. The RC is a topic not to the CC alone, but to a larger multi-clause discourse segment. The discourse structures for these examples would be the following:[25]

(53)

$\pi_{corr}:$
$$\boxed{\begin{array}{l} \epsilon_{RC}, \pi_{CC} \\[4pt] \boxed{\epsilon_{RC} : \text{The one}_i \text{ who opens the door}} \\[4pt] \pi_{CC} : \boxed{\begin{array}{l} \pi_{CC1}, \pi_{CC2} \\[4pt] \boxed{\begin{array}{l} \pi_{CC1} : \text{they go up to the roof} \\ \pi_{CC2} : \text{and draw him}_i \text{ up} \\ Narration(\pi_{CC1}, \pi_{CC2}) \end{array}} \end{array}} \\[4pt] HT(\epsilon_{RC}, \pi_{CC}) \end{array}}$$

---

[25] A reviewer suggests that the intervening clause in (51) might be taken as parenthetical: *The one who opens the door — they go up to the roof — they draw him up.* If the middle clause were parenthetical, then it would not be probative for the syntactic relation between the RC and the CC, due to the increased freedom that parentheticals have to interrupt syntactic structures. While some examples could perhaps submit to a parenthetical reading, I believe that (51)–(52) cannot involve parenthesis. In (51), the events of going to the roof and drawing the person up occur in sequence, and I believe that the most coherent discourse structure links them by *Narration*, as shown in (53). If the first event was included parenthetically, the discourse would not have this narrative structure and, in my view, would be less cohesive.

(54)

$$\boxed{\begin{array}{l} \epsilon_{RC}, \pi_{CC} \\[4pt] \epsilon_{RC} : \text{The sin}_i \text{ which you gods see} \\[6pt] \pi_{corr} : \quad \pi_{CC} : \boxed{\begin{array}{l} \pi_{CC1}, \pi_{CC2}, \pi_{CC3} \\[4pt] \pi_{CC1} : \boxed{\begin{array}{l} \pi_{CC1a}, \pi_{CC1b} \\[4pt] \pi_{CC1a} : \text{either let a man of the gods come} \\ \pi_{CC1b} : \text{and let him tell it}_i \\ Narration(\pi_{CC1a}, \pi_{CC1b}) \end{array}} \\[6pt] \pi_{CC2} : \text{or let the old women, diviners, and augurs tell it}_i \\ \pi_{CC3} : \text{or let an (ordinary) person see it}_i \text{ through a dream} \\ Alternation(\pi_{CC1}, \pi_{CC2}, \pi_{CC3}) \end{array}} \\[6pt] HT(\epsilon_{RC}, \pi_{CC}) \end{array}}$$
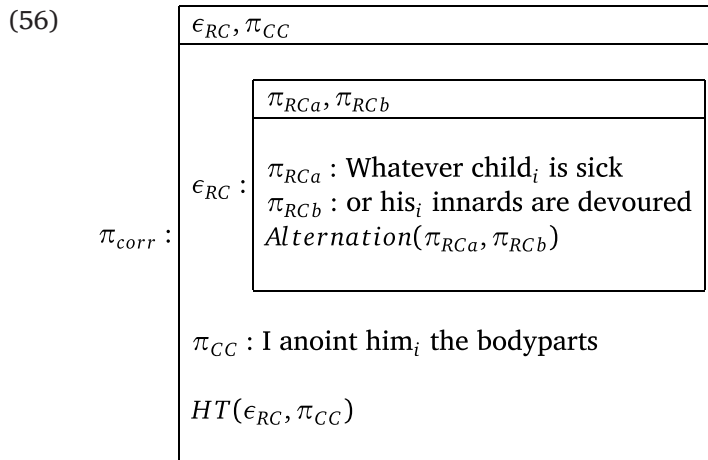
The dynamic nature of SDRT also permits a straightforward account of how such structures can be formed. Let us assume, given our paratactic model of the syntax, that each clause is parsed into discourse structure as it comes out of the syntactic component of the grammar. The update mechanism creates a set of possible updated structures by trying different attachment points for the new clause (Asher & Lascarides 2003: 218). This set is partially ordered in accordance with the principle of maximizing discourse coherence, and the most coherent discourse is chosen (p. 233–234). Crucially for these intervening-clause examples, right after the intervening clause is processed but before we get the correlate, the discourse structure may not be entirely clear and we may temporarily conjecture the wrong structure. In the SDRT framework, later updates can revise the structure, discarding what previously seemed the best update and picking a new one based on new information.

5.5 Multi-clause RCs

SDRT also allows easy modeling of constructions where the RC seemingly consists of multiple clauses with internal anaphora (instead of a gap or repetition of the Rel):
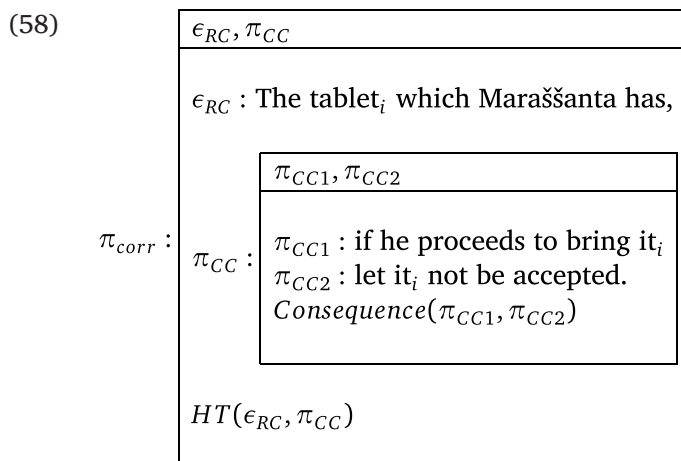
(55) nu   kuiš DUMU-aš$_i$ alpanza našma=šši$_i$=kan garāteš adanteš   n=an$_i$
CONN REL child   sick   or=him=PTC   innards devoured CONN=him
tuīkkuš   išgaḫḫi
bodyparts I.anoint
'Whatever child is sick, or his innards are devoured, I anoint his bodyparts (lit. I anoint him the bodyparts).'

(KUB 7.1+ i 39–40 (pre-NH/NS); Fuscagni 2017)

(56)

$$\boxed{\begin{array}{l} \epsilon_{RC}, \pi_{CC} \\[2mm] \pi_{corr}: \quad \epsilon_{RC}: \boxed{\begin{array}{l} \pi_{RCa}, \pi_{RCb} \\[1mm] \pi_{RCa}: \text{Whatever child}_i \text{ is sick} \\ \pi_{RCb}: \text{or his}_i \text{ innards are devoured} \\ Alternation(\pi_{RCa}, \pi_{RCb}) \end{array}} \\[6mm] \pi_{CC}: \text{I anoint him}_i \text{ the bodyparts} \\[3mm] HT(\epsilon_{RC}, \pi_{CC}) \end{array}}$$

Given the internal anaphora, these constructions are syntactically indistinguishable from constructions with multiple CCs:

(57)   *My father made Maraššanta a tablet, and Maraššanta has it.* [10 more lines]

ᵐMaraššantaš=ma	kuit	*ṬUPPU*	ḫarzi	n=at	uezzi	mān	udai		le
Maraššanta=TOP	REL	tablet	has	CONN=it	goes	if	brings	CONN=it	PROH

dattari
be.accepted

'The tablet which Maraššanta has, if he proceeds to bring it, let it not be accepted.'

(Bo 86/299 ii 2–3 (NH); Otten 1988: 14)

(58)

$$\boxed{\begin{array}{l} \epsilon_{RC}, \pi_{CC} \\[2mm] \epsilon_{RC}: \text{The tablet}_i \text{ which Maraššanta has,} \\[2mm] \pi_{corr}: \quad \pi_{CC}: \boxed{\begin{array}{l} \pi_{CC1}, \pi_{CC2} \\[1mm] \pi_{CC1}: \text{if he proceeds to bring it}_i \\ \pi_{CC2}: \text{let it}_i \text{ not be accepted.} \\ Consequence(\pi_{CC1}, \pi_{CC2}) \end{array}} \\[6mm] HT(\epsilon_{RC}, \pi_{CC}) \end{array}}$$

This lack of syntactic distinction causes no problems for the paratactic model, because all clauses involved in both types are paratactically juxtaposed. The difference between the constructions emerges from their distinct discourse structures. In (55), the second clause must be bound closely to the "proper" RC rather than to the CC, forming a discourse unit ϵ_{RC}. In (57), the second clause

is dependent on the following clause, and so the two form a discourse unit π_{CC}. In fact, (57) has the same structure as (51); compare (53) and (58). The difference is that the referent of the RC is involved in the first post-RC clause in (57) but not in the one in (51).
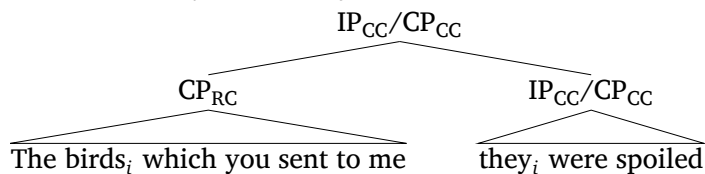
6 What about syntactic adjunction?

In the previous section, I presented evidence in favor of a syntactically paratactic and semantically dynamic analysis of Hittite correlatives. In the literature, however, correlatives have often been treated as syntactically adjoined to the CC. In this section, I offer some comments on this approach.

6.1 Asymmetric adjunction

One version of the adjunction hypothesis assumes that the RC asymmetrically adjoins to a clausal projection. For example, Srivastav (1991) and Bhatt (2003) both assume that correlatives adjoin to IP in Hindi, and Izvorski (1996) assumes they adjoin to CP in Slavic languages:

(59)   Schematic of asymmetric adjunction

$$IP_{CC}/CP_{CC}$$

$$CP_{RC} \qquad IP_{CC}/CP_{CC}$$

The birds$_i$ which you sent to me   they$_i$ were spoiled

In these models, the relevant projection of the CC projects over the RC, hence the asymmetry.

IP is ruled out because Hittite correlatives precede discourse connectives (*nu, šu, ta*) in the CC, which themselves always appear at the beginning of the clause (Hoffner & Melchert 2008: 390) and precede other CP-range material such as fronted topics (p. 407):
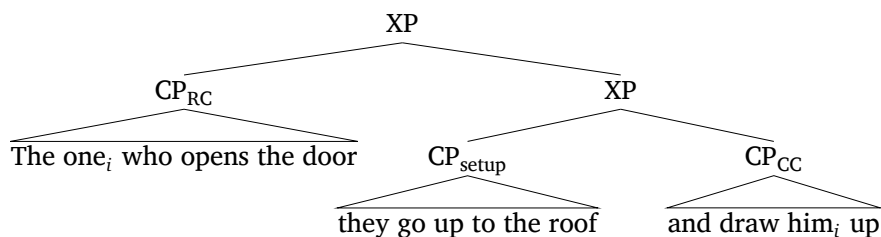
(60)   *I have given my son Tudḫaliya over to you in servitude*
        nu   É   ᵈ***IŠTAR***   [ᵐD]utḫaliyaš   DUMU = *YA*   :tapardu
        CONN   house   Ishtar   Tudḫaliya   son = my   administer.3SG.IMP
        '**and** Tudḫaliya my son shall administer **the house of Ishtar**.'

                                                        (KUB 1.1 iv 77–78 (NH); Otten 1981: 28)

A CP-adjunction site is harder to argue against because the adjunct would precede all clausal material, the same as in a paratactic model. However, the constructions in (51) and (52) make asymmetric adjunction to CP problematic. The correlative is most closely connected in interpretation to the CC, but in these constructions the correlative cannot be directly adjoined to it. The only way around this problem is to assume adjunction to some constituent combining the intervening clause with the CC:
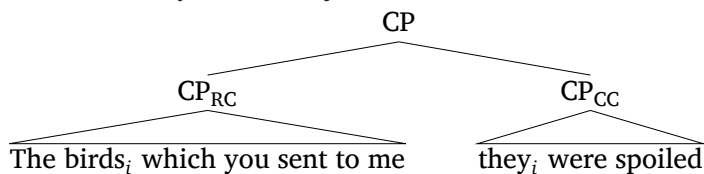
(61)

```
                              XP
              ┌───────────────┴───────────────┐
           CP_RC                               XP
     ┌───────┴───────┐            ┌─────────────┴─────────────┐
  The one_i who opens the door  CP_setup                    CP_CC
                           ┌──────┴──────┐            ┌────────┴────────┐
                      they go up to the roof      and draw him_i up
```

However, it is far from clear that these sentences are plausibly construed as syntactically joined since they are both independent clauses. I argue that the connection between them, as with any two independent clauses in narrative sequence, is a matter of discourse connection, not syntactic constituency.

6.2 Symmetric adjunction

Another approach is the symmetric adjunction proposed for Sanskrit by Davison (2009: 229):

(62)   Schematic of symmetric adjunction

```
                              CP
            ┌─────────────────┴─────────────────┐
         CP_RC                                 CP_CC
    ┌──────┴──────┐                      ┌───────┴───────┐
 The birds_i which you sent to me     they_i were spoiled
```

(Although Davison states that it is unclear which clause should project over the other, it seems to me that a genuinely symmetric relationship would involve no projection of either.)

It is important to highlight how similar this proposal is to my own in terms of hierarchy. Compare this to my own proposal in (45), repeated here:

(63)

```
              ┌ ─ ─ ─ ─ ─ ┬ ─ ─ ─ ─ ─ ┐
              ┆           ┆           ┆
          ...      π_corr      ...
              ┆                       ┆
              └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
         CP_RC                       CP_CC
    ┌──────┴──────┐            ┌───────┴───────┐
 The birds_i which you sent to me  they_i were spoiled
```
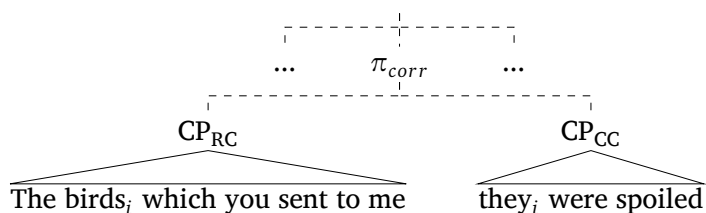
The structures in the two proposals are basically isomorphic. The only difference between them is a conceptual one: is the connection a syntactic one or not? This raises the question of what the nature of such an adjunction is. Are we just adjoining to show some relation between the clauses? At that point, one could well treat two independent sentences as adjoined. Such an adjunction would basically just be a way of cashing out a discourse connection in syntactic terms. At that point the issue is more of a meta-theoretical question than anything else: where does one want to stop calling it syntax?

7 Conclusion and further questions

In this paper, I have argued that correlatives are base-generated in their observed position adjacent to the left edge of the CC, rather than moved from a clause-internal position within it. Moreover, although the correlative appears in a position which is adjacent to the left edge, it is not an integrated subconstituent of the CC. The two clauses are syntactically discrete and are juxtaposed paratactically. The two clausal pieces of the construction are joined at the level of discourse grammar rather than syntax.

This conclusion has ramifications for our understanding of the cross-linguistic typology of correlatives. Assuming that Hindi correlatives are closely tied to their correlates within the CC, as Bhatt (2003) argues, then the extra-clausality of Hittite correlatives forces us to recognize that not all languages build correlative constructions in the same way, and opens the question of to what extent correlatives cross-linguistically should be treated as a single unitary type. Viewed in the context of Belyaev & Haug's (2020) cross-linguistic claim that *wh*-correlatives originate in paratactic conditionals, this may allow us to identify different kinds of reanalysis that can occur during the grammaticalization of a construction.

This paper also contributes evidence in support of a distinction between clausal interaction and syntactic integration, emphasizing that some relations between clauses (even ones involving dependent clauses) may be more appropriately attributed to discourse grammar rather than to the syntactic assembler. The ramifications are particularly significant for Hittite clausal syntax. Other preposed dependent clauses in Hittite have many of the main-clause syntactic properties that correlatives do; if we treat correlatives as paratactic, then we would expect the same to be true of other dependent clauses.

Lastly, the conclusion of this paper has implications for our views on early Indo-European syntax. It is an old idea (cf., e.g., Delbrück 1900: 413) that hypotaxis (i.e., clause subordination) develops from earlier parataxis. The present paper argues that a paratactic configuration is still synchronically active in Hittite (at least for correlatives, and maybe for all preposed dependent clauses). This impacts not only our understanding of Hittite, but also of its ancestor language Proto-Indo-European. If Hittite correlatives are paratactic rather than hypotactic, and if the same is true for other ancient Indo-European languages (cf. Davison 2009: 229 with references), then it seems best to assume that Proto-Indo-European employed paratactic correlatives as well. As with Hittite, this raises the question of whether and to what extent Proto-Indo-European had subordinate clauses, or whether it was all or mostly paratactic structures (as has sometimes been claimed, e.g., Kiparsky 1995).

Abbreviations

1 = first person, 2 = second person, 3 = third person, ABL = ablative, ACC = accusative, ALL = allative, CONN = connective; DAT = dative, ERG = ergative, FOC = focus, FUT = future, GEN = genitive, HAB = habitual, IMP = imperative, INS = instrumental, LOC = locative, PROH = prohibitive negation, PL = plural, PTC = particle, PTCP = participle, QUOT = quotative, REL = relative morpheme, REFL = reflexive, SG = singular, TOP = topic. *CHD* = Chicago Hittite Dictionary (Güterbock & Hoffner & van den Hout 1989–).

Data availability

A spreadsheet containing the data used for this study can be found at the following link: https://doi.org/10.17605/OSF.IO/YMV5N.

Acknowledgements

Competing interests

The author has no competing interests to declare.

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