Clitic Order in Hittite

BRIAN AGBAYANI AND CHRIS GOLSTON

California State University, Fresno

Introduction

The so-called second position clitics of Hittite are problematic in terms of their position in the clause, their relation to other positions in the clause, and their linear order with respect to one another. We propose a solution to this that is mostly syntactic but crucially phonological in part. The positions that clitics occupy in the clause, we argue, are purely syntactic, as are the positions the pronominal clitics are related to lower in the clause. The phonological part comes in the linear order of the pronominal clitics and in the late placement of the clitic conjunctions =ma ‘but’, =ya ‘and, also’ in Old and Middle Hittite.

Following Agbayani and Golston 2010a we assume that clitics are clause-initial and not in an ill-defined, if traditional, second position. We propose that some clitics in Hittite (conjunctions, quotative, reflexive, and local particles) begin life in head positions towards the left edge of the clause while the pronominal clitics originate in argument positions lower down. Syntax adjoins the pronominal clitics to the “little” v head to the left of VP, where their internal order is spelled out in a way that optimizes syllable structure.

Second position is first position

The commonest type of clause in Hittite starts with a conjunction like nu, šu, or ta (see Luraghi 1998) with one or more clitics (=war, =aš, etc.) attached to it as suffixes:

(1)  DŠ fr.28 A iv 5; Güterbock 1956
    nu =war =aš =mu =kan BA.alt
    and =QUOTE =he =me =LOC died
    “And ‘He died on me’ (she said).”

Wackernagel (1892) famously claimed that clitics of this sort in early IE languages occupied “second position” in the sentence, following directly upon the first stressed word of the sentence. We show in Agbayani and Golston 2010a, though, that Wackernagel’s famous law results from a misunderstanding of how
coordination works. Syntactically, a conjunction sits between its conjuncts like so,

\[(2) \quad \text{[CONJUNCT]} \& \text{[CONJUNCT]}\]

and the conjunction is not part of either of its conjuncts. From this it immediately follows that a clitic string like \(=\text{war}=\text{aš}=\text{mu}=\text{kan}\) in (1) is syntactically clause-initial, as it occurs directly after the conjunction and at the very beginning of the conjoined clause. The orthographic and phonological fact that the clitic string is “sentence-second” does not change the syntactic fact that it is clause-initial. The idea that a conjunction is actually part of its second conjunct is grammatically incoherent, akin to claiming that a preposition or transitive verb is part of its direct object.

Thus the traditional observation about clitics occurring in “sentence-second” position does not translate into a modern “clause-second” position but into clause-initial position: second position, properly understood, is first position. The conjunction in (1) is no more the first word of the clause than it is the last word of the preceding clause. The \(\text{nu}\), like any conjunction, sits between its conjuncts and is grammatically part of neither, from which it follows that anything which immediately follows \(\text{nu}\) is clause-initial.

This more nuanced understanding allows us to do away with the unlikely claim that \(\text{nu}\) in (1) is “ein betontes Wort”, to use Wackernagel’s term. Wackernagel knew nothing of Hittite, of course, but his IE claim has been recast for Hittite. Thus Friedrich claims for Hittite that “alle diese enklitischen Elemente treten an das erste betonte Wort des Satzes” (1960:147) and we read in Garrett that “a clitic must surface with a prosodic word to its left” (1996:117). Evidence that \(\text{nu}\) is neither stressed nor a prosodic word comes from the fact that it generally surfaces with its vowel elided when the following enclitic is vowel-initial:

\[(3) \quad \text{IBoT 1.36 i 4} \quad \text{(4) \text{IBoT 1.36 i 6}}\]

\[
\begin{align*}
\text{n} &= \text{at} \quad =\text{kan} \quad \text{anda pānzi} \\
\text{and} &= \text{LOC in} \quad \text{go}_{\text{PPL}} \\
\text{“and they enter”}
\end{align*}
\[
\begin{align*}
\text{n} &= \text{aštā šanḥanzi} \\
\text{and} &= \text{LOC sweep}_{\text{PPL}} \\
\text{“and they sweep”}
\end{align*}
\]

In these sentences, clearly, there is no useful sense in which \(=\text{at}, =\text{kan}, \text{or }=\text{aštā}\) surface after a stressed word or after a prosodic word. It is true to say that they are clause-initial (syntactically) and that they are not phrase-initial (phonologically), but they do not follow a stressed or prosodic word here. We follow Dover (1960:12–19) in treating such words as postpositive; they can’t be the first element in their (phonological) phrase, but they don’t place any prosodic require-
ments on the size of what precedes them. Something as small as [n] will do to keep =at=kan or =ašta from the left edge of the phonological phrase.

Like many early IE languages, Hittite has enclitic conjunctions (=ya ‘also, and’, =ma ‘but’) alongside freestanding conjunctions like nu. These enclitic conjunctions never surface between their conjuncts. Instead, the first word of the following conjunct always moves (leftward arrow below) to the left of the conjunction. Again we attribute this to their postpositive status. If the second conjunct consists of a single word, the enclitic conjunction occurs directly after it (in the case of ‘and’ appearing as =a after consonants with gemination of the latter, as =ya after vowels), so as not to be phrase initial:

(5) KBo 6.29 ii 12–13  
nepiš tekann =a
heavenACC earthACC =and
“heaven and earth”

(6) KBo 3.4 iv 20  
appanti kunanti =ya
prisoners killed =and
“the prisoners and the dead”

Note that noun phrases (“heaven,” “earth,” “prisoners,” “the dead”) generally align with phonological phrases, as do all lexically headed XPs (Selkirk 1986, 1995). If the second conjunct has more than one word, only the first word moves and the enclitic conjunction occurs directly after the first word. Thus in the following the enclitic conjunction =a logically joins “cloths for the knees” and “a stool for the feet”:

(7) StBoT 25.25 i 10  
genuwaš GAD.ḪI.A patān =a
kneesGEN clothsACC feetGEN =and  
“cloths for the knees and a stool for the feet”

(8) StBoT 24 ii 60–1  
ANŠE.KUR.RA.MEŠ ḬU.MEŠ.IS.GUŠKIN =ya
charioteersACC golden.groomsACC =and  
“charioteers and all the golden grooms”
where we assume that $=ya$ is in situ but that $\text{LU.ME}^\text{S} \text{GUSKIN}$ has moved to the left of it to give it a prosodic host. That is to say, we assume that $(y)a^\text{GIR.GUB}$ in (7) and $=ya \; \text{hûmandan}$ in (8) are in situ and that $\text{patân}$ and $\text{LU.ME}^\text{S} \text{GUSKIN}$ have been fronted to a phonological position immediately to the left of the enclitic conjunction.

Examples (5)–(8) are cases of phrasal coordination, where phonological movement from the right conjunct fronts a word to the left of the phrasal conjunction. The same happens with clausal coordination, as the following shows, where $\text{apê}$ “those” has been fronted past enclitic $=ya$ to provide it with a host:

(9) KBo 2.3 iii 21–2

\begin{align*}
\text{apê} & =ya \\
\text{uddâr} & \text{QATAMMA lagâru}
\end{align*}

\text{those}^\text{ACC} = \text{and} \quad \text{words}^\text{ACC} \text{likewise fall over}^\text{SG.IMV.M-P}

“And let also those words likewise fall over (fail).”

Fronting like this with clausal coordination regularly involves some degree of focus on the word that immediately precedes the clitic conjunction (Melchert 2009:187–8). Evidence that this fronting process is phonological rather than syntactic comes from the fact that it ignores the Left Branch Condition (Ross 1967: 114), which bans the syntactic movement of the left branch ($\text{apê}$) of a constituent ($\text{apê} \; \text{uddâr}$ “those words”); this suggests that the movement is not syntactic but phonological, since phonological movement \textit{ex hypothesi} is blind to syntactic considerations (Agbayani and Golston 2010b). Cases like this are not uncommon:

(10) KBo 39.8 iv 30–1

\begin{align*}
\text{kî} & =ya \\
\text{wa} & =\text{QUOT}^\text{KIŠIB} \text{apiyakku niniktaru}
\end{align*}

\text{this}^\text{NOM} = \text{also} \quad \text{seal}^\text{NOM} \text{even then lift}^\text{SG.IMV.M-P}

“Let also this seal even then be lifted (broken open).”

(11) KUB 31.127 i 27–8

\begin{align*}
\text{karu} \text{iliyâš} & =a \\
\text{kan} & \text{DINGIR.MEŠ-naš ištarnâ}^\text{4UTU-uš}
\end{align*}

\text{former} = \text{also} \quad \text{gods} \quad \text{among} \quad \text{Istanus}^\text{NOM}

\text{şarku} \text{š} \\
\text{exalted}^\text{NOM}

“You are exalted also among the former gods, Istanus.”
This kind of movement is also insensitive to the Coordinate Structure Constraint [CSC] (Ross 1967:89), which bans syntactic movement out of a coordinate structure. Consider the following, where the (asyndetic) coordinate structure “heaven and earth” is broken up by the sentential clitic string =wa=kan:

(12) KUB 33.113:29; Güterbock 1952:27

\[
\text{nepiš} =wa =kan \text{daganzipaš kuedani šer wedanza} \\
\text{heavenNOM} =QUOT =LOC \text{earthNOM whom} =LOC \text{upon built} =\text{NOM}
\]

“Upon whom heaven and earth are built …”

Movement of nepiš “heaven” leftwards to provide a host for =wa=kan would violate the CSC if the movement were syntactic, suggesting again that it is phonological. Similar cases are not hard to find, even with an overt conjunction. In the following, for instance, the coordinate structure “hair and nails” undergoes movement of both its conjuncts:

(13) KUB 13.4 i 15–16; Garrett 1996

\[
\text{išheniuš} =\text{šmaš} =kan \text{UMBIN.} =\text{ya } =\text{dān} =\text{ēšdu} \\
\text{hairNOM} =\text{them} =\text{DAT} =\text{LOC} \text{nailsNOM} =\text{and taken} =\text{be} =\text{3SG.IMV}
\]

“Let their hair and nails be removed.”

The first conjunct išheniuš “hair” moves leftward to provide a host for the sentential clitic string =šmaš=kan; UMBIN.MEŠ “nails” (collective singular, hence the singular verb) moves leftward to provide a host for the clitic conjunction =ya. Similarly for the conjoined emphatic pronouns (“you and I”) below:

(14) KUB 23.102 i 14–15

\[
\text{zik} =za =kan \text{ammuq} =a \text{1-edani AMA-ni} \\
\text{youNOM} =\text{REFL} =\text{LOC} \text{I} =\text{and} \text{1} =\text{DAT} \text{woman} =\text{DAT}
\]

\[
\text{haššanteš} \text{begottenNOM.PL}
\]

“Were you and I begotten in one woman?”

This again involves two movements out of a conjoined NP: the left conjunct zik “you” moves to provide a host for =za=kan; the right conjunct ammuq “I” moves to provide a host for the enclitic conjunction =\text{ya}.\text{a}.
Clitic order

Returning now to the left–right order of clitics in the clitic string, we can see that simple scope relations correlate with where most of the clitics fall. Thus the fact that conjunctions come first correlates with the fact that they have scope over the entire clause that follows. Similarly, the quotative particle =war comes next in the string and has scope over the following clause but not over the preceding conjunction. We therefore assign the conjunctions and the quotative particle head positions in the tree, the latter a sister to the clause proper (TP):

Because nothing in Hittite ever appears between the conjunction and the quotative particle, we assume that there is no syntactic position (no specifier position) between the Conjunction and the Quotative head. This holds for the entire clitic string in what follows: clitics surface in an uninterrupted string between the conjunction and the VP.

The pronominal clitics come next in the tree, following immediately upon the heels of the conjunctions and the quotative. Pronominal clitics in Hittite are in complementary distribution with full NP arguments, so we assume that they originate in argument positions within the VP and move to a functional head position immediately outside of VP (Kayne 1991:649, Roberts 2010:50–64). We posit that this position is the “little v” head (see figure 2). We will discuss what orders =naš before =aš (or =aš before =mu, etc.) below; for now the syntax merely adjoins them both to v, where they symmetrically c-command each other with no scope or linear order relations determined between them. Non-clitic pronouns and full NPs never occur in this v-position and remain within VP throughout the syntax; phonology may front them to provide a host for clitics or to focus them, but that involves no movement to syntactic positions.
The reflexive and local particles are tightly bound to the main verb in Hittite, so much so that it is often not clear exactly what they contribute to the semantics of the clause. The semantics of =za are not just those of a reflexive, a direct object coreferential with the subject; instead, they are fairly non-compositional and mark a number of features of various verbs. =za not only marks the direct object (myself), but also the indirect object (for myself) and possessive (my own); it can signal a change in transitivity (adding an argument), or a change of state, or can simply be used to support a predicate nominal, not to mention various other lexical idiosyncrasies (see Hoffner and Melchert 2008:357ff.). Similarly for the local particles:

The particles -an, -apa, -aša, -kan, and -šan belong to a single class of sentence particles which modify the action expressed by the main verb and its “adverbal” adjuncts. The nature of that modification is disputed: some thinking that it marks primarily local relationships … and another that it marks verbal aspect. These two viewpoints are not mutually exclusive … (Hoffner and Melchert 2008:364–5)

We take the idiosyncratic and non-compositional semantics of =za and the local particles as evidence that they are syntactic heads very closely associated with the main verb. Specifically, we suggest that they are functional heads interleaved within the VP-shell structure (Koizumi 1995:101–5) as in figure 3.
This tree lays out the correct order of all the particles we have seen so far. Thus in the following,

(15) KUB 13.35 ii 33; Hoffner and Melchert 2008:362

\[
\text{nu} = \text{wa} \quad \text{za} = \text{kan šer nāḫun}
\]

and \(=\text{QUOT} = \text{REFL} = \text{LOC} \text{ on feared}_{1SG}

“I became afraid on (that) account.”

the order conjunction (\(\text{nu}\)), quotative (\(=\text{wa}\)), reflexive (\(=\text{za}\)), local particle (\(=\text{kan}\)) can be read right off the tree and directly related to the asymmetric c-command and concomitant semantic scope of the elements in question. But our tree does not yet lay out the order of pronominal clitics with respect to each other—it simply puts them in a cluster under \(\text{vP}\).

**The relative order of pronominal clitics**

In a simpler world, the relative order of pronominal clitics would again follow from scope and we would find the nominative clitics arrayed before other pronominals just as freestanding subjects generally precede direct and indirect objects in Hittite. This is not the case, however. Instead, dative and dative-
accusative clitics precede nominative and accusative clitics when they are plural and follow them when they are singular.

Hoffner and Melchert lay out the issue as follows, where columns are slots that hold the various clitic types (2008:410). Conjunctions occur in the first column, followed by the quotative in slot 1, the pronominals in 2–4, the reflexive in 5 and the local particles in 6:

<table>
<thead>
<tr>
<th>Host</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accented Word (+ -al-ya)</td>
<td>-wa(r)</td>
<td>-naš</td>
<td>-a- (e.g., -mu</td>
<td>-za</td>
<td>-an</td>
<td></td>
</tr>
<tr>
<td>Accented Word (+ -al-ma)</td>
<td>-šmaš</td>
<td>-aš,</td>
<td>-ta/-du</td>
<td>-apa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nu</td>
<td>-an,</td>
<td>-še/i</td>
<td>-ašta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>šu</td>
<td>-at,</td>
<td>-kan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ta</td>
<td>-e,</td>
<td>-šan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The distribution of pronominals into slots 2–4 is morphosyntactically anomalous:

The dative-accusative pronouns of the first and second-person plural and the dative of the third-person plural appear in Slot 2, the nominative and accusative third-person pronouns in Slot 3, and the dative-accusative pronouns of the first and second singular, as well as the dative pronouns of the third person singular, occur in Slot 4. The pronouns of Slots 2 and 4 are mutually exclusive and never co-occur. (Hoffner and Melchert 2008:411)

And therein lies the problem: why are slots 2, 3, and 4 so heterogeneous? Scope cannot be the answer because there is no regular relation between it and number: plural dative-accusative NPs don’t regularly precede other NPs in Hittite, so there’s no reason they should among the clitics. Put another way, if dative-accusative singulars are in complementary distribution with dative-accusative plurals (Hoffner 1986:94), why don’t they show up in the same slot? The problem is clearer if the slots are shown with the morphosyntactic information of the clitics they contain (see table 2). Nothing explains why things occur in the order they do; Hoffner and Melchert’s slots grind out most of the facts but don’t explain them.

We propose that the members of Slot 2 precede those of 3 to provide them with syllable onsets; and that the members of Slot 4 follow those of 3 to avoid vowel hiatus. This is easily seen when we look at the phonological form of these pronominal clitics. Note below that the clitics in Slot 2 have both onsets and codas, those in Slot 3 lack onsets, and those in Slot 4 lack codas (see table 3).
Pronominals in 2 precede those in 3 so that the final consonant of =naš and =šmaš can provide an onset to vowel-initial =aš, =an, =at, =e, =uš, and =e:

(16) Pronominals in Slots 2–3

*naš=an [na.šan] 2–3
*an=naš [an.naš] 3–2 no onset for first syllable

The pronominals in Slot 4 have no final consonants to offer those in 3. The pronominals in Slot 3 precede those in 4 to avoid the hiatus that would result from the opposite order:

(17) Pronominals in Slots 3–4

*an=mu [an.mu] 3–4
*mu=an [mu.an] 4–3 hiatus

(Slots 2 and 4 are mutually exclusive, as we’ve seen, so there is no need to explain why the pronominals in 2 precede those in 4; they don’t.)

Late =ma and =ya

As we have seen, a clitic conjunction (=ma, =ya) generally comes first in the string of clitics, right after the first word in the clause, and our analysis is de-
signed to account for this naturally. But if the first word in the clause is prosodically light (see below), =$ma$ and =$ya$ surface on the following word instead in Old and Middle Hittite:

(18)  KBo 8.42 obv. 5

\[ \begin{align*}
\text{mān} & \text{ Uru\text{-}Hattuša} = \text{ma} \text{ uwawen} \\
\text{when} & \text{ H.} \quad = \text{but came}_{\text{PL}}
\end{align*} \]

“But when we came to Hattusha.”

(19)  KUB 13.9 ii 8–9

\[ \begin{align*}
\text{mān} \text{ taizzilašš} = \text{a} \quad \text{kuiški} \quad \text{sarnikzel} \text{ piyan} \text{ ḫarzi} \\
\text{if} \quad \text{theft}_{\text{GEN}} \quad = \text{also} \quad \text{someone} \text{ ransom} \quad \text{given} \text{ has}
\end{align*} \]

“If someone has also given ransom for theft.”

When other clitics occur, though, they show up where we would have expected them, on $mān$ or $takku$ or whatever the first word in the clause is:

(20)  KBo 16.47:10–11

\[ \begin{align*}
\text{mān} & = \text{mu} \quad = \text{kan} \text{ arḫa} = \text{ma} \text{ kuški} \quad \text{išparzazi} \\
\text{if} & = \text{me} \quad = \text{LOC from} = \text{but someone}_{\text{NOM}} \text{ escapes}
\end{align*} \]

“But if someone escapes from me.”

(21)  KBo 6.2 ii 35

\[ \begin{align*}
\text{takku} & = \text{at} \quad = \text{an} \text{ parna} = \text{ma} \text{ kuēlka} \quad \text{peššiezi} \\
\text{if} & \text{ them} = \text{LOC home} = \text{but someone} _{\text{GEN}} \text{ disposes.of}
\end{align*} \]

“But if he disposes of them in someone’s house.”

Clearly, our syntactic tree cannot position these late clitic conjunctions.

We propose that the phonology is responsible for the late placement of $=ma$ and $=ya$ in these cases, based on the pragmatics of clitic conjunctions in Hittite (Melchert 2009) and on the weak accentual status of words like $\text{mān}$ and $\text{takku}$ (Kloekhorst 2011). Kloekhorst argues that $=ma$ and $=ya$ generally follow accented words, something we can relate to their syntactic and pragmatic function:

Hittite $=ya$ and $=ma$ are not “focus particles” … They are clause-linking conjunctions … However, neither $=ma$ nor $=ya$ is used for simple parataxis. They do usually express linkage of a particular constituent of one clause (to which they are cliticized) to a preceding clause. This function is clearest for clause-linking $=ya$, which does not mean merely ‘and’, as it is often mistranslated, but is equivalent to English ‘also’, German ‘auch’, etc. Like its comparanda, Hittite
"=ya marks an additional element in the discourse whose role runs parallel to the preceding state or action: i.e., the added element continues the discourse in the same direction … (Melchert 2009:187)

We follow Melchert (1998) and Kloekhorst (2011) in dividing the vocabulary of Hittite into accented and unaccented sets:

We can now firmly establish that the following words were consistently unaccented: (1) nu, ta, šu, (2) mān ‘when, if’, (3) kui- (rel. pron.), (4) takku ‘if’, (5) našma ‘or’, and (6) mān ‘as, like’. Apart from the latter, all these words can, despite their unstressed character, take the quotative particle =wa(r), the enclitic personal pronoun =a-, the dat.loc. particles =mmu, =tta, =nnaš and =šmaš, the reflexive =z, and the local particles =an, =ašta, =ap(a), =kkan and =ššan, which are attached to the first word in a sentence irrespective of whether this was accented or not. (Kloekhorst 2011:175)

Our phonological analysis of late =ma and =ya relies on the following constraint (see McCarthy and Prince 1993a–b for alignment generally and in relation to prosodic words specifically):

(22) ALIGNLEFT
=ma and =ya are preceded by a prosodic word.

ALIGNLEFT splits =ma and =ya from the rest of the clitic string when the clause-initial word is prosodically light (nu, ta, šu, etc.), as we will see shortly.

Prosodically light words show up clause-initially to keep postpositives (=ma, =ya, =war, =aš, =mu, =za, =kan, etc.) from showing up initially in a phonological phrase. Borrowing from Agbayani and Golston (2010b:160) on Classical Greek, we invoke the following constraint:

(23) POSTPOS
No postpositive is initial in its φ.

POSTPOS keeps postpositive particles like =ma, =ya, =war, etc. from being initial in their phonological phrase (see again Dover 1960:12–19 for the notion postpositive). Two other constraints penalize phonological movement of anything (Agbayani and Golston 2010b:158):

(24) STAYφ
No daughter of φ moves.

(25) STAYω
No daughter of ω moves.
The two STAY constraints punish any change in word order from the order the syntax determined before it passed the sentence on to the phonology.

Starting with the output of the syntax, then, we have the following tableau:

(26)

<table>
<thead>
<tr>
<th>POSTPOS</th>
<th>ALIGNLEFT</th>
<th>STAYφ</th>
<th>STAYω</th>
</tr>
</thead>
<tbody>
<tr>
<td>=ma=mu=kan mãn arḥa kuiški išparzazi</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. =ma=mu=kan mãn arḥa kuiški išparzazi</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. mãn=ma=mu=kan arḥa kuiški išparzazi</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. mãn=mu=kan arḥa=ma kuiški išparzazi</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>d. arḥa=ma=mu=kan mãn kuiški išparzazi</td>
<td>**</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>e. mãn=mu=kan arḥa kuiški=ma išparzazi</td>
<td>*</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

Candidate (a) fails because it has a postpositive that is phrase-initial (=ma), in fatal violation (∗!) of POSTPOS. Similarly with anything that begins with =mu or =kan, or the like, so (a) covers a multitude of sins, all candidates we needn’t enumerate here. Candidate (b) fails because =ma doesn’t have a full prosodic word to its left, in violation of ALIGNLEFT. This leaves (c)–(e), all of which violate STAYφ because they move one or more daughters of a phonological phrase (freestanding words). Candidates (c) and (e) do this once (mān), while (d) does it twice (arḥa and mãn), taking it out of the competition. This leaves (c) and (e) which differ in how much they violate STAYω: candidate (e) violates it twice (for moving =ma rightwards over two prosodic words), while (c) violates it only once (for moving =ma rightwards over one prosodic word); this leaves (c) as the optimal candidate and therefore the correct output.

Conclusion

Our analysis is not simple, as it involves not only an elaborate syntactic tree, but also phonological movement based on a variety of prosodic considerations (on-sets, hiatus, alignment). But it is explicit and fully models how and why clitics go where they go in Hittite. The positions that clitics occupy in the clause, we have argued, are purely syntactic, as are the positions the pronominal clitics are related to lower in the clause. Phonology determines the linear order of pronominal clitics and the late placement of the clitic conjunctions =ma ‘but’, =ya ‘and, also’ in Old and Middle Hittite.
References


