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The Origin of Luwian Possessive Adjectives

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The Luwian possessive adjectives in *-ašša/i-* and their Anatolian cognates are not directly related to any Indo-European adjectival formation but rather arose as a result of contact-driven case attraction in genitive case nouns ending in **-osso* and **-osyo*. These two endings can be analyzed as the basic genitive marker **-os* extended by the deictic particle **-so* and the relative particle **-yo*. The original distribution of the simple and the extended genitival forms was probably syntactic, while the alignment of **-osso* > **-oso* and **-osyo* with the thematic paradigm in individual Indo-European languages must represent a secondary phenomenon.

1. Introduction

A widely cited feature of the Anatolian languages other than Hittite is the frequent use of possessive adjectives in lieu of genitive case nouns.[1] The Lydian possessive adjective in *-l(i)-* reflects Anat. **-olo-*, well attested in Hittite as a derivational suffix *-ala-*. The reflexes of the derivational suffix **-iyo-* forming possessive adjectives are abundant in Luwian and Lycian. Luwian, Lycian, Milyan, and Carian use yet a different suffix for the formation of the possessive adjectives (Luw. *-ašša/i-*, Mil. *-ese/i-*, Lyc. *-ehe/i-*, Car. *-s(i)-*).[2] The independent evidence

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[2] For Palaic possessive adjectives in *-aša-* see Hajnal (2000:165-66) and the discussion below. Note that although the Assyriological transliteration of cuneiform texts is used throughout this volume for consistency reasons, I operate on the assumption that the grapheme <s> corresponds to the phoneme /s/ in my Anatolian examples.

in the four languages supports the common Luwic character of *i*-mutation in this formation. Morpurgo-Davies (1980) succeeded in showing that the paradigm of the Luwian possessive adjectives included a peculiar dat.sg. ending *-an*.

The Indo-Hittite (Early Indo-European) origin of this suffix remains uncertain, although a considerable number of scholars have expressed opinions on this subject. Kronasser (1966:233-35) argued for the borrowed origin of sigmatic possessive adjectives, largely on the basis of numerous substrate toponyms in *-ašša* attested in Hittite cuneiform sources. While the parallelism between the two suffixes is indeed striking, there is by now enough evidence to conclude that substrate influence on Luwian morphology took the form of structural interference, rather than direct borrowing. Georgiev (1967) attemped to explain Luw. *-ašša/i-* as a "thematization" of the genitive singular ending *-os*, but failed to account for the consistent double spelling of *s* in this formation. Finally, Pedersen (1949:34) suggested that Mil. *xugasi* 'of the grandfather' and similar formations find a counterpart in Latin adjectives of the type *aquārius* 'related to water'.

Pedersen's view that *xugasi* and similar forms go back to Indo-European *-yo-* stems was falsified by the discovery of *i*-mutation (Starke 1990:59-71). Consequently, the direct connection between Proto-Italic *-āsyo-* > Lat. *-ārius* and the sigmatic suffix of Anatolian possessive adjectives is no longer tenable. Nevertheless, a modified form of this comparison lingers on in Hittitological literature. Melchert (1994:77) and Hajnal (2000:163-64) suggest that the Anatolian and Italic forms are ultimately derived from the Proto-Indo-European possessive adjective, the suffix of which can be reconstructed as *$-eH_2so-$. The Proto-Anatolian assimilation rule *$-H_2s-$ > *-ss-*, which is introduced on the basis of this single phonetically imprecise comparison, comes at a very high price. One is forced either to assume that the synchronic *-ḫš-* clusters in Hittite, observed in such forms as *paḫš-* 'to protect', *naḫšaratt-* 'fear', *tuḫš-* 'to cut off', *palaḫša-* '(a garment)' etc. have all been restored through analogical leveling (which in many cases must be based on synchronically unattested forms), or to follow Melchert in his claim that the assimilation exemplified through *$-eH_2so-$>*-asso-* was restricted to the intervocalic position. The last hypothesis is particularly unnatural in that it assumes the preservation of a complex consonant cluster *$-VH_2sC-$* vs. the elimination of its simpler counterpart *$-VH_2sV-$*, and at any rate it also implies a great deal of analogical restructuring.

The main reason that prompted Melchert (1994:77) to look for the second "laryngeal" generalized in the Anatolian possessive suffix was the vocalism of Lycian *-ahe/i-* and Milyan *-ase/i-*, cognates of Luw. *-ašša/i-*. This argument appears to be based on a misunderstanding. Hajnal (2000:170-71) has demonstrated that possessive adjectives in *-ahe/i-* and *-ehe/i-* are equally well attested in Lycian, and furthermore that there is a good correlation between the type of the stem and the quality of the initial vowel in the possessive suffix. The thematic stems usually take the variant *-ehe/i-*, while the variant *-ahe/i-* is particularly frequent with lexemes that end in *-a* in the nominative. Therefore, the distribution between the two allomorphs of the Lycian possessive adjective can be trivially derived from the generalization of the stem vowel. There are no obvious advantages in assuming that *$-ase/i-$* continues the original variant, whereas *$-ese/i$* represents an innovation of Lycian and Milyan, as opposed to the diametrically opposite solution, which yields a straightforward correspondence between Luw. *-ašša/i-*, Mil. *-ese/i-*, and Lyc. *-ehe/i-*.

The arguments that prompted Hajnal to accept the existence of Anat. *$-eH_2so-$* are likewise not convincing. Hajnal (2000:170-71) evaluates three hypotheses regarding the origin of Luw. *-ašša/i-*, one of which implies the "laryngeal" assimilation while the other two operate with the accent-driven fortition *s > *ss*. He rejects the last two options as empirically unfounded, and concludes that the first one must be closer to reality.[3] Yet, the list of alternatives offered by Hajnal is not logically exhaustive. As argued below, the geminate in the suffix *-ašša/i-* may owe its existence to secondary contact at the morphemic boundary or to the fortition of /s/ at the syllabic boundary. While one has good reasons to assume that the geminate /ss/ was automatically simplified in Proto-Indo-European (Mayrhofer 1986:120-21), there is also abundant evidence for the restitution of /ss/ in secondary contact in Anatolia (compare Ved. *asi* and OCS *esi* and vs. Hitt. *ešši* '(thou) art').[4]

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[3] Hajnal (2000) also admits the existence of the possessive suffix *-osso/i-* which, according to him, represents a result of the contamination between the suffixes *$-eH_2so-$ > *-asso/i-* and *-oso-*, the latter reconstructed based on Palaic evidence. The putative semantic distinction between Luwic *-asso/i-* and *-oso-* is, however, synchronically unfounded, as cogently argued in Melchert (forthcoming a).
[4] Palaic 2sg. *mu-ú-ši* derived from the root *mus-* 'to enjoy' (Yakubovich 2005:117) represents the sole example known to me for the degemination *$/ss/$ > /s/ in Bronze Age Anatolian.

I believe that the Luwian possessive suffix *-ašša/i-* and its Luwic relatives have no direct cognates in Indo-European. They rather represent a straightforward outcome of the genitive endings *-ašša* < **-osso* and *-ašši* < **-osyo* modified by case attraction. This hypothesis allows me to simplify the history of the Anatolian possessive construction, suggesting a uniform direction of its development in Hittite, Luwic, and perhaps Palaic. The Indo-European genitive markers **-osyo* and **-oso*, which are usually reconstructed as a part of the thematic paradigm, represent direct cognates of these Luwian case endings. In terms of internal reconstruction, the genitives in **-os-yo* and **-os-so* can be analyzed as basic genitives in **-os* extended by the relative particle **-yo* and the deictic particle **-so*, respectively. The first of these two etymologies can already be found in Watkins (1962:16, alongside fn.1) and was elaborated in Schmidt (1978), but the second one does not appear to have been offered before.

The rest of the paper will be organized as follows. In Section 2, I will discuss the formation of Luwic possessive adjectives as a contact-induced phenomenon and compare it with similar morphosyntactic processes in the other languages of the Ancient Anatolian Linguistic Area. In sections 3 and 4, I will present evidence for the existence of the relic endings *-ašša* and *-ašši* in the dialects of Luwian. In the concluding Section 5, I will attempt to reconstruct the original distribution between the base genitive ending **-os* and its extended variants **-os-so* and **-os-yo*.

2. The Formation of Luwian Possessive Adjectives

Luraghi (1993) argued that an Anatolian areal feature is the double marking of the case of the possessor in the possessive construction. The modification in a New Hittite nominal phrase as a result of which the dependent noun appears not in the expected genitive case, but rather assumes the case marking of its head-noun has been inauspiciously labeled "partitive apposition" in the Hittitological tradition (cf. Friedrich 1960:123-24). I prefer to avoid this term because the possessum does not always constitute the physical part of the possessor, and I refer instead to the same phenomenon as case attraction in a possessive construction. It will be significant for the following discussion that the nominative head noun can never trigger "case attraction" in Hittite. An additional synchronic constraint on Hittite case attraction prohibits it in those cases

where an animate head noun governs an inanimate dependent noun (Yakubovich 2006:46).

It is possible to show that New Hittite case attraction represents an innovation from the diachronic perspective. The following example from the Hittite Laws features one of many cases where the possessive construction without case attraction found in the Old Script version of the Laws has been modified in its later version.

(1) KBo 6.2 i 24, CTH 1.a.A (OH/OS), Hoffner (1997:26)
takku LÚ. U$_{19}$.LU-as *ELLAM*-as KIR$_{14}$=set kuiški wāki 1
[MA.NA KÙ.BABBAR pāi]
KBo 6.3. i 33, CTH 1.b.A (OH/NS[?]), Hoffner (1997:26)
takku LÚ.U$_{19}$.LU-**an** *ELLAM* KIR$_{14}$=set kuiški wāki 1 MA.NA
KÙ.BABBAR pāi

If someone bites off the nose of a free person, he shall pay 1 mina of silver.

Luraghi (1993:163ff. with ref.) suggested that case attraction, as attested in New Hittite, ultimately represents an attempt to copy the areal construction with "Suffixaufnahme" with the means available in an inflectional language. "Suffixaufnahme," or in this context double marking of the case of the possessum and the case of the possessor on the dependent noun, constitutes a well known feature of the Hurro-Urartian languages. Thus in the Hurrian phrase cited below, the genitive marker *=ve* and the directive marker *=da* co-occur in the same form *Šauška=ve=ne=da* separated by a special linker. The genitive case encodes the relationship between the head noun and the dependent noun, while the directive case, copied from the head noun, encodes the semantic role of the phrase in a sentence. The Hittite construction, unlike its Hurrian counterpart, has only one slot for marking case on the dependent noun, and so here the case copying results in the displacement of the genitive ending.

(2) KBo 20.129 ii 56-57, CTH 777.5 (MH/MS), Wilhelm (1995:118)
ḫi-pa-ap-te-ni-ta ^{d}GAŠAN-ka-bi-ne-da
ḫibapte=ne=da Šauška=ve=ne=da
ḫibapte=RltSg=Dir   Sawoska=GEN=RltSg=Dir

...to the *hibapte* of the goddess Sawoska.

Luraghi (1993) cites the example of another Indo-European language of the Caucasus, Classical Armenian, where case attraction is attested in oblique cases, and ascribes the rise of this Armenian construction to the influence of Old Georgian, another language with "Suffixaufnahme." The Armenian construction with case attraction represented likewise an imperfect image of "Suffixaufnahme," since Classical Armenian did not tolerate double case marking and therefore did not have syntactic means to distinguish a noun phrase with case attraction from a true appositional construction. It is interesting, however, that the instances of case attraction in Classical Armenian are largely limited to noun phrases with ablative or instrumental head-nouns, and there are no reliable examples of head-nouns in the accusative triggering case attraction (Luraghi 1993:149). Thus the comparison of Hittite and Armenian data yields the natural hierarchy of case agreement in NPs: OBL > ACC > NOM.

Now it is time to turn to the Luwian possessive construction with the suffix *-aššalı-*, which represents a closer functional equivalent of "Suffixaufnahme" than the Hittite double case construction, since both the case agreement and the syntactic subordination between the possessum and the possessor are overtly expressed in Luwian morphology. I suggest that in Luwian, just as in Hittite, we are dealing with a modification of the original genitive case noun through case attraction, probably triggered by contacts within the Anatolian Linguistic Area.[5] The difference between syntactic modifications in Hittite and in Luwian is that the Luwian case agreement marker does not replace the original genitive case marker, but is rather appended on top of it. For example the neuter accusative singular phrase **apašša parnanza* (or **apašši parnanza*) 'his house' becomes *apaššanza parnanza* as a result of copying the marker *-nza*.

There is, in fact, a way to show a synchronic connection between Luwian genitives and possessive adjectives. Example (3) features the co-occurrence of the nominal phrase 'Sipis, (son) of Nis' with and without case attraction in the same sentence. There is no reason why the author of

the KARABURUN inscription would use both the genitive case noun and the unrelated adjective for the same patronymic. By contrast, the spread of the dative but not the nominative case marker to the dependent noun has a precise parallel in New Hittite, where case attraction does not occur in nominative noun phrases.

(3) KARABURUN § 9-10, Hawkins (2000:481)
si-pi-sa-pa-wa/i ni-ia-**sa** (gen.) REL-ti si-pi-ia REX-ti MALUS-za CUM-ni ‖ za<+ra/i>-ti-ti ni-mu-wa/i-zi ni-pa-wa/i ha-ma-si si-pi-ia-pa-wa/i-ta ni-ia-**sá-na** (poss. adj.) hara/i-na-wa/i-ni-sa (URBS) (DEUS)ku+AVIS-ia ku-ma-pi ta-wa/i INFRA-ta á-za-tu

But if Sipis, (son) of Nis, wishes evil for Sipis the king, for (his) son or grandson, for Sipis, (son) of Nis, may the Haranean (god) together with[7] Kubaba swallow down the eyes.

The tendency toward using forms with case attraction for patronymics appearing in indirect object phrases can be confirmed through the analysis of KULULU lead strip 1. This administrative document lists a large number of recipients of a certain commodity hidden under the ideogram HH *179. The names of recipients appear in the dative case, and in fifteen instances they are accompanied by their patronymics. In all the fifteen instances we are dealing with possessive adjectives endowed with the dative case marker *-an* (Hawkins 2000:506-09). By contrast, genitives without case attraction are frequently used to express patronymics in the initial sentences of personal inscriptions, next to nominative case names and titles of their commissioners (e.g. KARATEPE 3 §1, KÖRKÜN §1, PORSUK §1 etc.). Unfortunately, in most of these instances we find the word 'son' spelled out, whereas in KULULU lead strip 1 it is elided, and this makes the contrast between nominative and dative noun phrases less illuminating than the one in (3).

An additional instance of a case-sensitive alternation between the genitive case noun and the possessive adjective in the same idiom is given below. The distribution between forms with and without case attraction is here again the same as what one would expect in New Hittite.[6]

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[5] It is to be noted in passing that the immediate trigger of case attraction in New Hittite could be not contacts with Hurrian, but rather contacts with Luwian. Athough the Hittites were drawing upon the Hurrian lexical stock for their religious terminology in the historical period, one may doubt that these contacts were so intense as to trigger structural changes in New Hittite.

[6] Note, however, that the animacy hierarchy established in Yakubovich (2006) for New Hittite case attraction does not seem to operate in Iron Age Luwian. The animate head

(4) SULTANHAN §2, Hawkins (2000:465)

|a-wa/i |za-a-na |(DEUS)TONITRUS-hu-zá-na |tu-wa/i+ra/i-sà-
si-i-na (poss. adj.) |ta-nu-wa/i-ha ||

I have set up this Tarhunt of the Vineyard.

(5) SULTANHAN §8, Hawkins (2000:466)

|a-wa/i |tu-wa/i+ra/i-sà-**sa** (gen.)|(DEUS)TONITRUS-hu-za-sa
|wa/i›-su-SARMA-ma-[ia? ...]-´[...]-ti-i [|mu-w]a/i-ta-li-na-´
|wa/i+ra/i-pi-na |pi-ia-ta

And Tarhunt of the Vineyard gave Wasusarmas the king[7] the
mighty power.

We have seen that case attraction in object noun phrases represents a
synchronic phenomenon in Iron Age Luwian. Other things being equal,
one has to assume that this synchronic morphosyntactic transformation
reflects the historical reality. Although the correlation between oblique
noun phrases and case attraction is not exact, deviations in Iron Age
Luwian can be accounted for through the analogical extension of
constructions with and without "double case." The near-generalization of
possessive adjectives at the expense of genitive case nouns in
Kizzuwatna Luwian can be seen as a secondary development.[7]

If we accept the development of Luw. *-ašša/i-* from genitive case
endings, the same origin must be postulated for the rare derivational
suffixes *-(a)šša-* and *-aššiya-* occurring in such Hittite formations as
(DUG)*hapašša-* 'water vessel[?]' derived from *hap(a)-* 'river' or EZEN₄
witaššiyaš 'yearly festival', derived from *wett-/witt-* 'year' (for the
complete list of examples see Hajnal 2000:174). These formally and
semantically non-trivial derivations preclude the hypothesis that these
Hittite suffixes represent borrowings from Luwian. In all probability, we
are dealing here with relic formations reflecting the head noun ellipsis in
constructions with case attraction. Thus the original **hapašša* DUG

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constituent (Tarhunt) influences the case structure of the dependent inanimate constituent
(vineyard) in (5).
[7] It is, however, to be observed that the Kizzuwatna Luwian forms in *-ašša* frequently
depend on oblique case nouns. This distribution is problematic for my theory, but I
assume that genitive case forms in this dialect were limited to certain fixed collocations
that happen to be unattested as sentence subjects in the available corpus of texts.

'vessel for river(-water)' could undergo case attraction in oblique cases
(e.g. abl. **hapaššaz* DUG-*az*), and then the disappearance of the word
for 'vessel' would lead to the grammaticalization of the new stem
hapašša-. This must have happened before the moment when the
unextended genitive ending **-os > -aš* was generalized in Hittite. The
mechanism of hypostasis triggered by case attraction has been described
in detail in Yakubovich (2006:44-45) in connection with the genesis of
É*arzana-* 'inn'.

An independent instance of the original "double case" construction
in possessive noun phrases lurks in Palaic possessive adjectives in *-aša-*.
Hajnal (2000:165-66) lists the occurrences of Palaic forms *fashulāša-*
and *ziparwāša/i- / ziparwataša-*, which are consistently spelled with a
single *-š-*. The first form, functioning as a title of the Sun-god, is
probably to be connected with the Hattic form *waₐ-aš-hu-ú-l[i* (1x) and
the theonym ᵈ*waₐ-aš-hu-ú-li-li* (Soysal 2004:897 with ref.). The second
one apparently refers to a culinary product associated with the god
Zibarwa. Melchert (forthcoming) follows Bader (1991:99) in assuming
here secondary inflexion of the Palaic genitive ending *-aš*. The meager
Palaic corpus does not yield to us enough evidence in this to decide
whether the "double case" construction owes its existence to the original
case attraction or to direct hypostasis in nominal forms. Since we have
no record of genitival forms in **-aš(š)a* in Palaic, it seems reasonable to
assume that the Palaic adjectives in *-aša-* represent an areal and
typological, rather than genetic, parallel to the Luwic adjectives in
*-ašša-.

Nothing indicates that imperfect language acquisition played a role
in the spread of case attraction through Anatolia. Presumably, the reason
for this morphosyntactic change was not the mistaken reanalysis of the
genitive case ending as an adjectival suffix, but rather the selection for
redundant case marking in order to facilitate the interpretation of noun
phrases. As such, it can be compared, for example, to the
grammaticalization of clitic doubling in the Balkan Linguistic Area.
Most scholars view structural changes that changed the face of the
Balkan languages as a result of long-term linguistic contacts in a
situation of language maintenance (Winford 2003:70-74 with ref.).
Accordingly, one need not postulate a massive shift from Hurrian to
Luwian in order to account for the formation of Luwian possessive
adjectives.

Although the concentration of "double case" forms in the languages of Anatolia and the Caucasus makes their spread via language contact in this case very likely, they also occur in other parts of the world, notably in the languages of Australia (Plank 1995:339-428). Therefore, I believe that the account of Bader (1991), according to which various forms of the Indo-European genitive generated denominative derivational forms through the process that I would call case attraction, merits serious consideration.[8] It would be, however, far-fetched to project these forms back into Proto-Indo-Hittite even if some of them display occasional sound similarities. The modification of possessive constructions in Indo-European need not have been any more uniform than it was in Anatolian.

Thus the derivation of Luw. -*ašša/i*- from the genitive case markers -*ašša* < *-osso* and -*šši* < *-osyo* is superior to its currently accepted alternative not only from the formal perspective but also from the typological viewpoint. This, of course, does not relieve me of the necessity of demonstrating the existence of the relevant endings in the dialects of Luwian and to account for their origin. I intend to accomplish this task in the following three sections.

3. Luwian Genitives in -*ašša*

It is usually assumed that the "Cuneiform" Luwian dialect has lost its genitive case, employing instead the possessive adjective in -*ašša/i*- (Melchert 2003b:171). While "Hieroglyphic" Luwian also makes a heavy use of possessive adjectives, it also features two distinct genitival markers °*a-sa* and °*a-si*.[9] The (near-)generalization of possessive adjectives in Luwian cuneiform texts is normally taken as a dialectal innovation, since other Luwic languages likewise feature genuine forms of the genitive singular, which do not agree in case with their respective head-nouns.

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[8] Bader argues that these forms were grammaticalized in some language and retained a purely lexical distribution in others; for their provisional summary one can consult the table in Bader (1991:131). Compare also the account of Bachvarova (2007), who adduces the double case construction in the "Tyrrhenian" language, reconstructed on the basis of the Etruscan and Lemnian data, as a likely source of the Anatolian possessive adjectives. The "Tyrrhenian" influence proposed by Bachvarova is particularly plausible in the case of Lydian, a language that was spoken in the same geographic area that is referred to as the homeland of the Tyrrheni/Etruscans in the classical sources.

[9] The phrase INFANS.NEPOS-*sa* INF[ANS] 'son of (my) grandson' in EMİRGAZİ, §4 is the only instance of a genitive in Bronze Age hieroglyphic texts known to me. All the other examples come from Iron Age monuments.

The analysis of Luwic genitives constitutes the topic of a forthcoming article by Craig Melchert. The author came to the conclusion that the languages of the Luwic subgroup preserve not only the Indo-Hittite gen.sg. ending in *-os*, but also the thematic ending *-oso* and probably also *-osyo*. Melchert followed Neumann (1970:61) in his assumption that the Lycian zero ending characterizing a number of personal names (e.g. TL 127.1 *Epñxuxa tideimi* 'son of E.') represents a direct reflex of *-os*. He further argued that the Lycian ending -*Vhe / -Vh* (e.g. TL 2.2 *Murazahe: tideimi* 'son of M.' vs. TL 122 *Tutinimeh: tideimi* 'son of T.') reflected the earlier *-oso* and suggests the same origin for the Milyan ending -*ese* in *Kuprllese* (cf. Melchert 2004:97). With regard to the Luwian ending °*a-sa*, he observed that the Anatolian Hieroglyphic script leaves us no way of deciding whether it reflects *-os* or *-oso*. Finally he cautiously hypothesized that the Luwian ending °*a-si* may owe its existence to an irregular apocope of the earlier *-osyo*.

I am very much in agreement with the general thrust of Melchert's article, which attempts to provide a historical account for a number of forms that are sometimes dismissed without much discussion as language-specific innovations (explicitly so in Hajnal 2000:177-78). It is possible, however, to demonstrate that some of the etymologies proposed in Melchert (forthcoming a), and sources this article quotes have superior alternatives if one takes into consideration Bronze Age Luwian data. The most serious problem for the suggested scenario comes from the existence of Luwian genitives in -*assa*. Melchert (forthcoming a), did not mention the existence of such a formation, although it is implicitly recognized in Melchert's *Cuneiform Luvian Dictionary*, where KUB 35.54 ii 14, iii 17 *im-ma-ra-aš-ša* is booked as an absolute form of the possessive adjective *im(ma)rašša/i*- 'of the open country' (Melchert 1993:89). I intend to show below that further attestations of this formation can be adduced if we dispense with certain faulty grammatical interpretations and take manuscript variation seriously.

I will begin my analysis with the discussion of a Luwian foreign word embedded in a Hittite context. The example cited immediately below is taken from a Late New Hittite instruction for unspecified high officials, which in all likelihood was composed in Hattusa. The emendation to nom.sg.n. *mar-ša-aš-ša-<an>* in (21), as per Melchert (1993:140), is obviously *ad hoc*. While the syntax of the passage is compatible with the plural interpretation of *marsašša mēḫur* as 'ominous times', nom.pl. *mēḫur* would be formally irregular, since the endingless

plural forms of the Hittite neuter *r*-stems consistently show the *plene* spelling on the suffix, not on the root.

(6) KBo 4.14 ii 57-59, CTH 123 (NH/LNS), Stefanini (1965:42)
     našma=kan LUGAL-us tūwali KAŠKAL-ši arḫa paizzi našm=at
     GIM-an ašān imam ˩mar-ša-**aš-ša** mēhur

     ... Or (when) the king goes to a long campaign, or whatever time of calamity[7] there may be... .

Turning to the Luwian textual material, there are at least four attestations of these forms in the Luwian passages embedded in the Ritual of Puriyanni (CTH 758). The passages cited below must ultimately reflect the Kizzuwatna dialect of Luwian, but since the Puriyanni ritual was likely copied in the Hittite capital, the interference of the dialectal features of Hattusa Luwian cannot be excluded.

(7) KUB 35.54 ii 14, 758.1.C (MS), Starke (1985:66)
     [...] im-ra-**aš-ša** ᵈIŠKUR-aš-ša-an-za [...]

     ...of the Storm-god of an open country

(8) KUB 35.54 ii 35-36, 758.1.C (MS), Starke (1985:67)
     a-ta im-ra-**aš-ša** ᵈIŠKUR-u[n-t]i pa-ri ta-ra-a-u-i-it-˩ta˩

     He handed them over to the Storm-god of an open country.

(9) KUB 35.54 iii 2-5, CTH 758.1.C (MS), Starke (1985:68)
     ḫal-li-iš-ša ˩pa˩-ra-at-ta-an[-za]
     pu-wa-ti-il-za [n]a-nu-un-tar-ri-š [a]
     ir-ḫu-u-wa-**aš-ša** pa-˩ri˩-it-tar-u-wa-a-aš-š [a]¹⁰
     u-˩la˩-an-ta-al-li-ya-an ḫu-it-w[a-li-ya-an]

     ...*halis*- and impurity
     past and present
     of *ir(hu)wa*- and of *parittarwa*-
     of the dead and of the living.

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[10] The restoration *pa-˩ri˩-it-tar-u-wa-aš-š* [*a-an*] is likewise formally possible.

(10) KUB 35.54 iii 6-8, 758.1.C (MS), Starke (1985:68)
     a-ta a-ap-pa za-aš-ta-an-za DINGIR.MEŠ-an-za pár-ra-an ni-iš
     <<???>> im-ma-ra-**aš-ša** ᵈIŠKUR-aš-ša-˩an˩-za ḫa-li-iš-ša

     Let the *halis*- of the Storm-God of an Open Country not <<???>> before these gods'.

Melchert (pers. comm.) takes examples (7) and (10) as instances of group inflection involving the omission of the redundant ending *-anza*. There is, however, no need to assume that the original ending contained the deictic element *-za*. One might as well reconstruct **immaraššan Tarḫuntaššan-za ḫališ-ša* in the original version of the ritual. If it is possible that the inconsistent use of *-ša/-za* represented the last resort strategy of expressing syntactic dependency in the iterated possessive construction "the *halis*- of the Storm-God of the Open Country." The construction with two possessive adjectives **immaraššan-za Tarhuntassan-za halis-sa* probably had a default interpretation "the *halis*- of the Storm-God AND of the Open Country," If one accepts this reconstruction, it appears that the *-ašša* genitives in the Puriyanni ritual are restricted to those contexts where one might otherwise expect the possessive adjectives ending in *-aššan* (acc.sg.n. and dat.sg.).

The close connection between the forms in *-ašša* and *-aššan* is borne out by the parallelism of (8) with the dative adjectival phrase KUB 35.54 ii 37 *im-ma-[r]a-aš-ša-an* ᵈIŠKUR-*ti* occurring in the adjacent paragraph of the same text. It can be further confirmed through the analysis of the parallel versions of the Kizzuwatna ritual CTH 760.II attributed to Kuwattalla. The majority of the manuscripts of this text display preference for possessive adjectives, such as acc.sg.n. *kursaššan* and **tuliyaššan* in (12). By contrast, the manuscript CTH 760 II.1.A contains the genitival forms **kuwarsašša* and *tuliyašša* (11).

(11) KBo 29.55 iii 1-5 + KUB 35.43 iii 28-32, CTH 760 II.1.A
     (Pre-NH/NS), Starke (1985:147)
     l[a-la-i-]du-ut-ta ta-˩pa-a-ru˩ ta-ta-ri-ya-am-ma-an ḫ[i-i-ru-ú-u]n
     e-ir-ḫu-u-wa-˩al˩-li-ya-an pa-ri-it-tar-wa-al-li-ya-an wa-a[l-l]i-
     ya-an ḫu-u-it-wa-li-ya-an pu-u-wa-ti-i-il pa-ri-ya-na-al-la<-an>
     ˡᵁˤ˩lu-la˩-ḫi-ya-an ḫa-ap-pí-ri-ya-an ku-wa-a[r-š]a-**aš-ša**<<-aš
     -ša>>tu-ú-li-ya-**aš- ša**

It takes (away from) him *tabaru*, the spell, (and) the curse, of
ir(ḫu)wa- (and) of *parittarwa-*, of the dead (and) of the living,
past (and) future, of the *lulaḫḫi* (and) of the *ḫabiri*, of
ku(wa)rsa- (and) of the assembly.

(12) KUB 35.45 ii 1-4, CTH 760 II.2.B (Pre-NH/NS), Starke
   (1985:151)
   ḫi-i-ru-ú-un pu-ú-wa-<ti>-i-il[!] pa-ri-ya-na-**al-la-an** AMA-ya-an
   ta-a-ti-ya-an ŠEŠ-ya-an NIN-ya-an ARAD-ya-an GEMÉ-ya-an
   ^{LÚ}lu-u-la-ḫi-ya-an ḫa-pí-ri-ya-an kur-ša-**aš-ša-an** tu-ú-li-ya-<**aš-**
   ša>-an

   the curse past (and) future, maternal (and) paternal, fraternal
   (and) sororal, of slaves (and) of slave-women, of the *lulaḫḫi*
   (and) of the *ḫabiri*, of *ku(wa)rsa-* (and) of the assembly.

The final example of a genitive in *-ašša* occurring in a position
where *-aššan* is expected comes from a fragmentary incantation of
uncertain provenance. The ending *-ašša* appears there in a simplified
spelling *(C)a-ša*. Melchert (1993:177) takes the form *Pirwa(š) ša* as
nom.-acc.pl.n. of the possessive adjective *Pirwašša/i-* 'belonging to
Pirwa', but the following singular head-noun *ḫantawadaḫi-ša* 'kingship'
undermines such an analysis.[11] There is, of course, a possibility that
Pirwasa modifies the preceding plural noun, lost in the lacuna, but the
dependent proper noun usually precedes its syntactic head in the Luwian
possessive construction (as, for example, in the genealogies of Neo-
Hittite kings).

(13) KUB 35.123 iv[?] 7, CTH 768.2 (LNS), Starke (1985:251)
   [....^dP]í-ir-wa-**ša** ḫa-an-ta-⌈wa⌉-da-ḫi-ša

   ...the kingship of Pirwa.

The absence of alternations between gen.sg. *-ašša* and the other
inflectional forms of possessive adjectives supports the analysis of

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[11] Starke (1990:47) attempts to circumvent this difficulty by assigning the plural meaning
to the nominal ending *-ša* in *ḫantawadaḫi-ša*. A similar grammatical analysis of *-ša* in
ḫališ-ša allows him to interpret *immarašša* as acc.pl.n. of a possessive adjective in (25).
Starke's analysis of nominal extensions *-ša/-za* has been widely and justly rejected.

Melchert (1993), according to which gen.sg. *-ašša* in Kizzuwatna rituals
represents the corruption of the earlier **-aššan*. Although the nasalization
[an]>[ã]/_C/#[?] represents a likely optional feature of colloquial Luwian,
it is unclear why variant spellings reflecting nasal vowel formation in
word-final position would be compartmentalized in the category of
possessive adjectives. The only other case where Melchert (1993)
restores the final graphic <an> is *pa-ri-ya-na-al-la<-an>* in (11). But in
this case the scribe may have reinterpreted *pūwatīl pariyanallan* as
pūwatīl pariyanall=a, the pair of two endingless adjectival forms linked
by the coordinative clitic *=(i)a*.[12]

I believe that the omission of the final graphic <an> was possible
only in those cases where the misspelled forms could receive the new
grammatical interpretation that would fit the general context of the
passage. In the instance of the possessive adjectives in *-aššan*, they
would be reinterpreted as genitives in *-ašša*. My hypothesis implies that
the genitives in *-ašša* were absent in the original Luwian dialect of
Kizzuwatna rituals, but were secondarily introduced there by Hattusa
copyists. Although the phonetic development [an]>[ã] could hardly be
responsible for the emergence of gen.sg. *-ašša*, it may have increased the
chance of dictation errors. The secondary origin of the forms in *-ašša* in
the manuscripts of Kizzuwatna rituals explains why the distribution of
these forms does not show reverse correlation with the hierarchy of case
attraction (cf. the discussion of *-ašši* in the following section).

Once we turn to the Iron Age Luwian data, the genitives rendered as
-(C)a-sa in hieroglyphic orthography represent a perfect counterpart to
the *-ašša* ending attested in cuneiform texts. In this case, however, the
alternative reading *-as* is also possible. Melchert (1993) lists the genitive
forms *ḫantiyaššas, ḫirudaš, ᵏkulanaš, tarmatnaš, ᵏtarpattaš*, and
warwalanaš occurring in Hittite contexts. All these forms are clearly
derived from Luwian nouns, but are provided with the genitive ending
-aš. While it is perfectly possible that some of these nouns represent
(partially) assimilated Luwian borrowings into Hittite, one cannot
exclude that other forms represent Luwian foreign words provided with
the inherited ending *-aš*. The last possibility, already raised in van den
Hout (2006:236, fn.107), strengthens the claim that some of the
hieroglyphic genitives in *-(C)a-sa* may have a purely graphic final

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[12] Note, however, the case of KUB 9.6 i 30-31 [*ku-wa-ar-š*]a-⌈aš⌉-ša<<-*an*>> *tu-úli-ya-
aš-ša-*<<*a[n]*>> where the <an> signs need to be deleted, as per Fortson (2004:170).

vowel. Yet the genitives in *-ehe* and *-ese* attested in Lycian and Milyan respectively and representing the perfect external comparanda of this newly discovered form in *-assa* suggest that at least in some of the *-(C)a-sa* endings the final vowel must have been real.

All the Cuneiform Luwian examples with the exception of (13) show the double spelling of /s/ in the genitive ending *-aša*. The closest external comparanda of this newly discovered form are the genitives in *-ehe* and *-ese* attested in Lycian and Milyan respectively, mostly with personal names. A better-known cognate is the Indo-European gen.sg. ending usually reconstructed as **-e-so/-o-so* (Fortson 2004:114, 129). The data of Indo-European languages where this suffix occurs are compatible with the alternative reconstruction **es-so/-os-so* (in particular, this holds for OCS *česo* 'of what' and for the Greek genitive ending *-ου*). Besides allowing me to account for the Luwian data, this modification also helps explain the internal structure of the extended genitive case endings in a unified fashion. It is significant that a reflex of the **-so* particle is independently attested in Luwian as the extension *-sa/-za* of nom./acc.sg.n. nominal forms (cf. Melchert 2003:186-87 and Fortson 2004:169).[13]

4. Luwian Genitives in *-ašši*

Unlike the genitive in *-aša* that is to be postulated based on the evidence of Luwian cuneiform texts, the genitive forms in *-ašši* are primarily known from hieroglyphic inscriptions (cf. Melchert 2003:187).[14] A distributional pattern of these forms that seems to have escaped the attention of previous scholars is their predilection for nominative and accusative head nouns. One subject and two object noun phrases containing the relevant genitival form would be sufficient to illustrate this tendency.

(14) KARATEPE 1, §51 (Hu.), Hawkins (2000:55)
pi-ia-tu-há-wa/i-tu-u (DEUS)TONITRUS-hu-za-sá ARHA u-sa-nú-wa/i-mi-sá za-si-há-wa/i |("CASTRUM")há<+ra/i>-na-sá-**si** DEUS-ní-zi (LITUUS)á-za-ti-wa/i-tà-ia || "LONGUS"-ta₅-ia (DIES)há-li-ia mi-ia-ti-zi-ha || (ANNUS)u-si-zi sa-na-wa/i-sá-ha-wa/i || tá-mi-hi-sá

And may Tarhunt the highly blessed and this fortress's gods give to him, to Azatiwada, long days and many years and good abundance.

(15) KARKAMIŞ A 2+3, §16, Hawkins (2000:109)
|za-ti-pa-wa/i |kar-ka-mi-si-za(URBS) (DEUS)TONITRUS-ti-i ᴵka-tu-wa/i-sa |REGIO-ni-ia-**si** |DOMINUS-ia-sa REL-i-zi |("*273")wa/i+ra/i-pa-**si** |DOMINUS-ia-zi-i pi-ia-tá

The "lords of lore" whom Katuwa the country-lord gave to this Karkamisean Tarhunt...

(16) KÖRKÜN §4, Hawkins (2000:172)
|wa/i-ti ku-ma-na á-sa-ti-ru-sá REX-ti-sá wa/i+ra/i-pa-**si** DOMUS-na "AEDIFICARE"

When king Astiruwa built himself the "houses of lore"...

The only possible counterexample to the tendency outlined above, which precludes me from calling it a rule, is a group of two transaction records preserved on a lead strip. From the syntactic point of view, these passages represent sentence fragments with an elided predicate, presumably meaning 'I gave'. As was mentioned in the previous section, patronymics attached to the names of recipients in the Kululu lead strip 1 invariably agree with them in case (cf. dat.sg. ᴵ*la-la/i/u-wa/i-sá-na* and ᴵ*mu-wa/i-sá-na*). By contrast, the information about towns where these individuals come from can be expressed by the genitive, or even the instrumental. This makes one suspect that these items could be perceived as fragments of a relative clause (*'who is from the town X'), but there is no independent way to either prove or disprove this hypothesis.

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[13] Since the particle **-so > -ša* must be synchronically regarded as a separate morpheme in Luwian, one can analyze the geminate /ss/ in *-aša* as a cluster arising in secondary contact. Its preservation in Luwian cuneiform texts can be directly compared with the case of nom./acc.sg. *tappaša* 'heaven' (Melchert 1994:257).

[14] The Carian genitive forms in *-ś* can be derived from **-as(s)i*, as per Melchert, forthcoming b, but the derivation from the nominative case of possessive adjectives in **-assa/i-* is likewise formally possible.

(17) KULULU lead strip 1, §§30-31, Hawkins (2000:506-07)
112 "*179" ˡku-ku-wa/i-ia-´ |CUM-ni ˡla-la/i/u-wa/i-sá-na
|wa/i+ra/i-tu+ra/i-**si** (URBS)
100 "*179" ˡREL+RA/I-mu-wa/i-ia-´ |CUM-ni ˡmu-wa/i-sá-na
|wa/i+ra/i-tu+ra/i-**si** (URBS)

112 (?) for Kukuwa, son of Laluwa, (who is) from Wartura; 100
(?) for Kwiramuwa, son of Muwasi, (who is) from Wartura.

It is more difficult to trace the Bronze Age precursors of the forms in
ºa-si. The Luwian dialect of Kizzuwatna appears to lack them altogether.
Most of the forms in *-ašši* attested in Hittite cuneiform texts can be
analyzed as truncated ("Akkadographic") spellings of possessive
adjectives. This holds for numerous oblique case forms of the theonym
ᵈU *pihaššašši*, as well as for [A.]ŠÀ *ʔlalattašši* (KUB 8.75 iv 52) and
NINDA.GUR₄.RA *ḫawiyašši* (KBo 21.42 i 11). The most likely
candidates for the genuine forms in *-ašši* are *kulimmašši=wa* and
[...]*nišši=pa=ku=wa*, which appear in the two consecutive lines (iii 9
and iii 10) of a very fragmentary text KUB 35.79 (MS). The hypothesis
that this text did not originate in Kizzuwatna is likely on independent
grounds.[15] To this one has to add the form in a title of a Lallupiya song
KUB 25.37 iii 33 *ma-aš-ša-ni-ya-aš-ši wa-al-z[a-me-en]* alternating
with KUB 35.37 i 14 *[ma-aš-ša-ni-y]a-aš-ši-in wa-al-za-me-en*. The last
form KUB 35.70 ii 5 acc. *[ma-a-y]a[-aš-]-ši* EME-*in* 'slander of the
adults' occurs in a Kizzuwatna incantation, and alternates with e.g. KBo
13.262 8 nom. *[ma-ay-]a-aš-ši-iš* [EME-*iš*] in a related incantation.
Scribal errors made by Hattusa copyists and triggered by the structure of

their own dialects suggest themselves as possible explanations in the last
two cases.

These cuneiform examples are admittedly too few in number to settle
the question of the phonological reconstruction /-assi/, as opposed to
/-asi/ suggested in Melchert (2003:187). Yet the only evidence adduced
in favor of /-asi/ is its derivation from the extended genitive in *-osyo*
(Melchert, forthcoming a). The examples like Luw. *is(sa)ra/i-* < *ĝesr-*
'hand' or Luw. **immara/i-* < *ĝemro-* 'open country' suggest that the rule
stating that Hittite /s/ and /m/ geminate as the first members of
heterosyllabic consonant clusters can be extended to Luwian.[16] If so, the
etymological sequence /-osyo/ may have yielded */-assya/ and then, after
apocope, */-assi/. If one accepts this relative chronology, etymological
considerations speak for rather than against my phonological
reconstruction.

The compartmentalization of the hieroglyphic forms in *-(a)ssi* in
subject and object noun phrases has a simple functional explanation. The
case agreement hierarchy introduced in Section 2 predicts that the
nominative and accusative head nouns are the least likely ones to trigger
case attraction. In the case of *-(a)ssi*, this morphosyntactic process
appears to have been completed in the oblique case noun phrases, while a
related process was on its way in their direct case counterparts. The
following examples are meant to illustrate the alternation between the
genitive (virtual) **Suhiyassi* > *Suhissi* and the possessive adjective
Suhissa/i- in two nearly identical passages.

(18) KARKAMIŠ A 11b, § 1, (Hawkins 2000:103)
EGO-wa/i-mi ˡka-tú-wa/i-sa "IUDEX"-ni-i-sa DEUS-ni-ti-i
(LITUUS)á-za-mi-i-sa kar-ka-mi-si-za-sa(URBS) |REGIO-ni
DOMINUS-sa ˡsu-hi-**si** |REGIO-ni DOMINUS-ia-i-sa
|INFANS.*NI*-za-sa

I am Katuwa the Ruler, loved by the gods, Carchemisian
Country-Lord, the Country-Lord Suhi's son

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[15] KUB 35.79 iii 13 contains the sequence [...]*u-na*, which is probably to be taken as the
infinitive suffix. Luwian infinitives in *-una* are abundantly attested as foreign words in
Hittite texts, and they frequently occur in Iron Age Luwian, but there is not a single
instance of such a form in Luwian passages embedded in Kizzuwatna rituals. The other
two (likely) infinitival forms occurring in Luwian incantations are KBo 7.68 ii 5 *a-du-na*
and VBoT 60 obv. 12 *kar-šu-na*, but both of these fragments are likewise suspect of
reflecting the Luwian dialect of Central Anatolia. The infinitives in *-una* must have
existed in Proto-Luwian, since the noun *i-ú-na-ḫi-ša* 'mobile property' attested in
Kizzuwatna Luwian is apparently derived from inf. *iuna*, 'to go', known from Iron Age
Luwian. Yet the Luwian dialect of Kizzuwatna appears to have eliminated or severely
restricted the use of these infinitives. Unfortunately, it does not seem possible at present
to indicate a construction that replaced the infinitival phrase in Kizzuwatna Luwian. This
means that my argument is now supported by purely statistical considerations, and
therefore it remains somewhat hypothetical.

[16] See Melchert (1994:150-52) for the formulation of the rule for Hittite. Luwian
tahušiya- 'to keep silent' does not constitute a genuine counterexample to this rule,
because Luwian, as well as Hittite, appears to have generalized the "Sievers" allomorph
/iya/ of the stem-forming verbal suffix *-ya-*.

(19) KARKAMIŞ A 2+3, §1, Hawkins (2000:109)
EGO ˡka-tu-wa/i-sa |"IUDEX"-sa kar-ka-mi-si-za-sa
(REGIO)REGIO DOMINUS-ia-sa ˡsu-hi-**si-sa** |REGIO-ni
DOMINUS-ia-i-sa |(INFANS)ni-mu-wa/i-za-sa

I am Katuwa the Ruler, Carchemisian Country-Lord, the
Country-Lord Suhi's son.

The assumption that the ending *-ašši* and the suffix *-ašša/i-* are genetically related contributes to the understanding of the spread of the *i*-mutation. Since case attraction occurred in the oblique noun phrases first, one has to reconstruct a stage when nom.sg. /xantawatassi nimuwizzas/ 'the king's son' corresponded to abl./instr. /xantawassati nimuwizzati/ 'by the king's son'. It is possible that the direct case forms were added to the emerging paradigm of possessive adjectives not directly through case attraction, but rather through the addition of the nominative and accusative case endings to the pre-existing stem in *-assi*, as in (19). This would yield nom.sg. /xantawatassis nimuwizzas/ and acc.sg. /xantawatassin nimuwizzan/. This explanation obviously does not amount to a general account of the origin of the *i*-mutation in the Luwic languages. Several morphological processes, in particular those described in Rieken (2005), must have conspired to trigger the generalization of the "mutational declension." The existence of the *-ašši* genitive helps, however, to explain why *i*-mutation was extended to the paradigm of possessive adjectives.

5. The Origin of the Extended Genitives

The formal reconstruction of genitive forms in *-os-so* and *-os-yo* in Anatolian and Indo-European makes one wonder about the original function of these formations. Most of the Indo-European languages show the alignment of the extended genitives with the thematic declension. This distribution, however, cannot reflect the original state of affairs because the addition of clitics to a particular morphological type would violate the principle of syntactic autonomy. In all probability, the thematic endings *-osyo* and *-os(s)o* were grammaticalized secondarily as an attempt to disambiguate the homonymous nominative and genitive endings *-os* of the thematic paradigm. On the other hand, the Anatolian languages do not show any clear distribution between the two types. Hittite has generalized the unextended genitive in *-aš*, while Luwian

appears to have eliminated or restricted this type (it is uncertain, as argued above, whether the forms in *-(C)a-ša* of hieroglyphic texts go back to *-os* or *-os-so*). Only in Lycian can one possibly observe a synchronic opposition between genitives with zero endings possibly reflecting the earlier *-os* and the genitives in *-h(e)* going back to *-os-so*, but the distribution between the two types appears to be haphazard.

Since comparative reconstruction cannot clarify the original distribution between genitives in *-os* and their extended counterparts, typology alone can provide us with a hypothesis about the original difference between the respective endings. Here one has to pay due attention to the observation of Croft and Deligianni (forthcoming) according to which right-branching NPs tend to be morphologically more complex than their left-branching counterparts, and this irrespective of the basic pattern of branching in a given language.[17] The authors claim that their generalization holds for 21 out of 23 languages in their pool, and the Indo-European languages offer abundant evidence in its support. The most well known example is probably the opposition between Classical Greek noun phrases, such as ὁ τῶν Ἀθηναίων δῆμος and ὁ δῆμος ὁ τῶν Ἀθηναίων 'the Athenian people'. In Middle Persian, the left-branching noun phrases were formed through the simple juxtaposition of the dependent and its head, whereas the right-branching order required an *ezafe*-linker, which represented a reflex of the Indo-Iranian relative pronoun (e.g. *dūdag sālār* vs. *sālār ī dūdag* 'guardian of the household', Rastorgujeva and Molchanova 1981). Finally, Melchert (forthcoming b) observed that the same type of opposition also existed in Lycian, where the genitives were frequent in the left-branching constructions (e.g. *Tutinimeh: tideimi* 'son of T.'), whereas the right-branching constructions generalized the use of the possessive adjectives derived through case attraction (e.g. *ēni qlahi ebijehi* 'mother of this precinct').

It is likely that the distribution of simple vs. extended genitives in Proto-Indo-European obeyed similar syntactic rules. The genitive in *-os* was used in a position before the head-noun, while the possessor's right dislocation triggered the attachment of the relative element *-yo* to the genitive ending. In other words, the left-branching construction *bʰrātros*

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[17] If we assume, following the *communis opinio*, that the left-branching word order was unmarked in proto-Indo-European, then the hypothesis of Croft and Deligianni (forthcoming) only gains in likelihood with respect to this language. The statistically less frequent constructions tend to be formally more complex across communication systems.

eƙwos 'brother's horse' originally corresponded to the right-branching construction * *eƙwos (...) bʰrātros-yo* 'horse of the brother'.[18] After the ending *-osyo* was secondarily grammaticalized in the thematic declension, individual Indo-European languages developed new strategies for marking extraposed constituents of nominal phrases. The continuity with the original construction can be most clearly seen in Indo-Iranian, where the declined relative pronoun could be optionally employed before the right-branching constituents, as in Av. *haiθīm mąθrəm yim hauruuatātō ašahiiā amərətātasčā* 'the real spell of integrity, truth, and immortality' (Y 31.5-6).[19]

It is more difficult to make a typologically informed conjecture regarding the original function of *-os-so*. It is possible that in some dialects of Proto-Indo-European this ending was competing with *-os-yo* as a marker of possessors following their head nouns. The Greek construction with the resumptive article, illustrated by ὁ δῆμος ὁ τῶν 'Ἀθηναίων cited above, would then represent a typological parallel to, and perhaps even the formal renewal of * *eƙwos (...) bʰrātros-so* 'horse of the brother'. At a certain level, however, the functions of *-os-so* and *-os-yo* must have been different. I tentatively suggest that the demonstrative clitic could be originally added in order to mark constructions with head-noun ellipsis, e.g. *bʰrātros-so* 'that of the brother'. Besides the obvious parallelism with English syntax, the main argument in support of this view is the Hittite derivational suffix *-(a)šša-*, which probably represents a reanalysis of free-standing genitives, as argued in Section 2. Given that Hittite has eliminated extended genitives, the forms in *-(a)šša-* must represent old formations. Hittitte *genušša/i-* 'knee-joint' looks particularly archaic because its reconstruction *ǵenus-

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[18] We do not have enough information to decide whether the relative clitic *-yo* represents the archaic predecessor of the inflected relative pronoun, or should rather be seen as its secondary reflex. The phylogenetic considerations appear to support the first solution (the tonic relative pronoun *yo-* left no reflexes in Anatolian or Tocharian), while the second one would be more compatible with the usual direction of grammaticalization. In any event, it is important to observe that the clitic *-yo* could also be attached to finite verbal forms in proto-Celtic, yielding the special set of relative forms in Old Irish (Watkins 1962:24).

[19] Schmidt (1978) saw the relevance of this model for the reconstruction of *-os-yo* and identified *-yo* as a cognate of the Indo-European relative pronoun but failed to comment on the word order of the relevant Indo-Iranian noun phrases, which weakened his analysis of the original functional difference between *-os* and *-os-yo*. The references to the other treatments of *-osyo* can be found in Szemerényi (1996:187, n.10).

so 'that of the knee' shows the zero-grade of the genitive ending, which has otherwise disappeared from the Hittite nominal declension.[20]

One cannot say whether the distribution outlined above should be synchronically reconstructed for the immediate period before the separation of Anatolian and Indo-European, or it existed at some earlier stage in the history of Indo-Hittite. I have tried, however, to outline a model that can explain the original relationship between genitive case markers *-os*, *-os-so*, and *-os-yo* in a typologically natural way. The fusion of the clitic elements with the genitive case marker must have obfuscated the original contrast between the three endings. This could lead to their promiscuous use, as in the Luwic group, or to the rise of their morphological redistribution, as in the Indo-European family.

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[20] The noun *ǵonu-* 'knee' was originally acrostatic, as per Fortson (2004:108). The Hittite genitive of this noun was, however, rebuilt to *genuwaš* by analogy with the other ablaut paradigms.

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