

The Position of Anatolian

1. History of the Question

1.1 Discovery and Recognition

Excavations at the central Turkish village of Boğazköy (now Boğazkale) beginning in 1906 unearthed extensive cuneiform archives of ancient Hattusha, capital of the theretofore rather shadowy Bronze-Age kingdom of the Hittites (ca. 16th-13th centuries BCE). In 1917 Bedřich Hrozný demonstrated that the chief administrative language of the Hittite kingdom and later empire was Indo-European.¹ Disbelief in the possibility of an Indo-European language in second-millennium Asia Minor brought some initial skepticism about Hrozný's analysis. However, by the late 1920s the better preserved Hittite texts were available in philologically sound editions, and specialists had established the chief features of Hittite grammar, confirming the validity of Hrozný's overall interpretation and rectifying his very few serious errors. Indo-Europeanists had to reckon with a large new set of data to be integrated into the reconstruction of Proto-Indo-European.

¹ In 1902 J. A. Knudtzon had already argued that the two "Arzawa letters" in cuneiform found in Tell El Amarna in Egypt were composed in a previously unknown Indo-European language, which turned out to be Hittite. For a new appreciation of Knudtzon's pioneering work see Singer 2002.

It was also soon clear that Hittite was not alone, but belonged to a new subgroup of Indo-European that has come to be labeled Anatolian. Palaic and Luvian, two other languages of the cuneiform texts from Hattusha, were recognized as closely related to Hittite (Hrozný 1920: 39 and Forrer 1922: 215-223). By the 1930s it was established that Lycian, Lydian, and the language of the “Hittite” hieroglyphs belonged to the same group (Meriggi 1936ab and 1932: 42-57 and Hrozný 1933: 77-80). However, the very limited evidence for these other languages severely retarded their interpretation, and the very incremental progress in the decipherment of the hieroglyphs meant that the status of their language as a form of Luvian, long suspected, was fully confirmed only in the 1970s. As a result, for more than half a century most Indo-Europeanists who dealt with the problem of integrating the Anatolian material into PIE focused almost entirely on the Hittite evidence.²

Hittite presented a special challenge, because despite its antiquity it conspicuously lacked some key features of “classical” PIE as reconstructed chiefly on the basis of Sanskrit and Ancient Greek, with support from Latin and Avestan. In the noun there was no feminine gender distinct from the masculine.

² Even the few exceptions, such as the works of Meriggi cited above or Pedersen (1945), understandably used Indo-European to explicate the grammar of the attested languages rather more than vice-versa.

The verb showed no obvious trace of the aspectual contrast between “present” and “aorist” or of the “perfect” category at all. The subjunctive and optative moods were also missing. Hittite was typologically a synthetic and inflecting language like those named above with recognizable Indo-European morphology, but it appeared to reflect either a more primitive or a more advanced stage of evolution than the other oldest attested representatives of the family. And precisely the choice between those alternatives quickly became the focus of a debate that has continued to the present.

1.2 First Reactions

Strictly speaking, there were nearly as many responses to the “Hittite problem” as there were Indo-Europeanists, and any generalizations run the risk of oversimplification. Nevertheless, most reactions may be fairly characterized as adopting one of three fundamental approaches.

The first was to treat Hittite (respectively Anatolian) as merely one more subgroup of the Indo-European family like any other and to derive its features from the PIE already reconstructed, with a bare minimum of revisions to that model—as represented by the *Grundriß* of Karl Brugmann.³ Two articulate and

³ I emphasize, however, that even before the discovery of Hittite there was more diversity of opinion and more dissent from specifics of the Brugmannian

nuanced presentations of this viewpoint may be found in Pedersen (1938) and Eichner (1975), but there have been many others. Since this account must assume that the features of “classical” PIE missing in Hittite are due to their having been lost there, it is often (simplistically) labeled the “Schwund-Hypothese”. While there have been important exceptions (see below), it is fair to say that this approach was dominant among Indo-Europeanists in Europe until the 1990s.

Some, however, adopted essentially a diametrically opposed position: namely, that the major features cited above (and arguably others) represent massive common innovations of non-Anatolian Indo-European in which Hittite did not take part. In terms of the family-tree (Stammbaum) model, Hittite (Anatolian) is thus not a descendant of “classical” PIE, but a co-equal branch, both being derived from an earlier prehistoric protolanguage. The most famous proponent of this view was Edgar Sturtevant, who argued in a series of works that Hittite and PIE are descended from what he labeled “Indo-Hittite” (see Sturtevant 1933a: 30 with diagram and references in note 11). The conception of “Indo-Hittite” found little favor in Europe, but Sturtevant’s ideas had rather more

formulation than is typically acknowledged. Indo-European studies have never been as monolithic as they are sometimes portrayed.

influence in North America, even if the explicit label “Indo-Hittite” was not always used.⁴

A third response to the new evidence of Hittite was exemplified by the work of Jerzy Kuryłowicz, in both phonology and morphology (see respectively 1927 and 1964 as representative). Kuryłowicz and others rejected both the “Schwund-Hypothese” and “Indo-Hittite”, contending that proper integration of the Hittite evidence demanded a radical and far-reaching revision of reconstructed PIE—meaning PIE as the source of not only Hittite, but also the non-Anatolian languages including Sanskrit, Greek and the rest. Other representatives of this viewpoint include Watkins (1969), Meid (1963) and (1975), Neu (1976 and 1985), and Adrados (1963, 1982 and 2007).

1.3 Stalemate and Resolution

It was not at all clear by the decade of the 1980s how any compromise could be reached between the opposing models of the “Schwund-Hypothese” and that of a radical revision of PIE, cast in terms of “Indo-Hittite” or not (see the strong

⁴ The labels one chooses for the more remote parent language and for its immediate non-Anatolian descendant are of no consequence. What is crucial is the claim of large-scale common innovations that set off the latter protolanguage from Anatolian. See Cowgill (1979: 27) and compare the remarks of Eichner (1975: 72²).

statement of Eichner 1975: 72). Nevertheless, several factors have since significantly altered the terms of the debate. First, there has been a significant maturation of Anatolian philology. A crucial breakthrough in our ability to establish the relative chronology of Hittite texts and manuscripts has brought reevaluation of nearly every aspect of the synchronic and diachronic grammar and a much better grasp of the Hittite facts. At the same time evidence for and our understanding of the other “minor” Anatolian languages has also dramatically improved, to the extent that these languages now actively contribute to the debate over the position of Anatolian vis-à-vis the rest of Indo-European.

Second, there has been a serious retrenchment regarding *some* of the evidence cited from non-Anatolian languages in support of the radically revised model for PIE. For example, while debate still continues on the precise formal details, a consensus developed by the 1980s that the Insular Celtic contrast of absolute and conjunct verbal endings reflects in some fashion the “classical” PIE system of primary and secondary endings (following Cowgill 1975a) and does not justify the radically innovative accounts of Meid (1963) and Watkins (1969).⁵

Third, in response to proposals like those of Meid (1975) there has developed a widespread view that we need not view the problem as strictly a choice between

⁵ Most aspects of the very novel analyses of Neu and Adrados in the works cited in the preceding paragraph have also failed to win broad acceptance.

Anatolian as another descendant of PIE like any other subgroup or Anatolian and PIE as representing branches of “Indo-Hittite” (see further section 4 below).

Some archaisms claimed for Hittite/Anatolian have withstood scrutiny, and any viable reconstruction of PIE must take these into account. For that reason there are now few defenders of the strict Schwund-Hypothese or of an unaltered “classical” PIE. However, continued analysis of Hittite and the other Anatolian languages brings them ever closer to the rest of Indo-European (see in detail e.g. Rieken, forthcoming). Furthermore, many of the remaining differences involve relatively minor reshaping of the formal expression of grammatical categories (or changes in productivity of particular formal patterns), not the creation of—or major functional changes in—the categories themselves. Seeing Anatolian as uniquely reflecting a very archaic “Indo-Hittite” or Early Indo-European” is thus also now a minor viewpoint (respectively Lehrman 1998 and Adrados 2007).

I do not mean to suggest that a full consensus has yet been achieved regarding just which features of Anatolian are archaisms and which are innovations. Nor are the differences in the conceptions of individual scholars by any means trivial. However, most Indo-Europeanists now agree on the basic terms of the debate: some revisions to “classical” PIE are required, in order to account for the genuine archaisms of Anatolian, whose prehistoric speakers “separated” (or became sufficiently geographically isolated) from the rest of the PIE speech community so as not to share in some common innovations. The goal of the

debate is to identify which features constitute these common innovations and to determine just how radical the revisions to PIE need to be. On these points there is a broad spectrum of opinion. What follows in Section 3 reflects my own current best assessment, with due acknowledgement of divergent views.

2. Issues of Time and Space

2.1 Anatolian Languages: Intrusive or Autochthonous?

The unexpected discovery of a set of ancient Indo-European languages in Asia Minor not only precipitated a major reassessment of the linguistic features of PIE, but also cast in an entirely new light the attendant debate regarding the supposed location in time and space of the associated prehistoric PIE speech community. For half a century it was at least taken for granted that Indo-European speakers were intrusive to Asia Minor, having moved there from some point farther north in Europe. There was also a broad consensus that their entry into Asia Minor took place only shortly before the first appearance of the Anatolian Indo-European languages in the historical record, thus late in the third millennium BCE. The only major point of dispute concerned the migration route: eastern through the Caucasus or western through the Balkans and across the Black Sea straits?

As outlined below, it is now reasonably certain that any movement of Indo-European speakers into Asia Minor took place far earlier than used to be assumed. For this reason almost all of the linguistic and textual arguments made in the older

secondary literature in favor of one migration route or the other—as ingenious as some of them were—are now irrelevant. It is extremely unlikely that speakers of the IE Anatolian languages during the historical period preserved any cultural memory of the initial entry route into Asia Minor. I forgo here any further discussion of this extremely difficult and perhaps unanswerable question.

The 1980s brought two major independent challenges to the orthodox view of an Indo-European migration into Asia Minor. First, Thomas Gamkrelidze and Vyačeslav Ivanov in 1984 presented a fully elaborated scenario for location of the PIE speech community in the area of eastern Anatolia, the southern Caucasus, and northern Mesopotamia (see Gamkrelidze and Ivanov 1995: 757-852, especially 791). Their chief arguments consisted of reconstructed PIE lexemes for fauna such as ‘elephant’, ‘lion’, and ‘monkey’ and of evidence for extensive linguistic contact between PIE and Proto-Kartvelian on the one hand and Sumerian, Semitic, Hattic, and Hurrian on the other (loanwords in both directions). A detailed refutation of these arguments is not possible here. Suffice it to say that I find most of the claimed instances of lexical borrowing wholly unconvincing,

along with the PIE status of the animal names cited above, and have the impression that most Indo-Europeanists concur in this judgment.⁶

It is important to note that Gamkrelidze and Ivanov, while arguing for a Near Eastern location for the PIE speech community, retained the view predominant among Indo-Europeanists that PIE is to be dated approximately to the fifth or fourth millennium BCE. Colin Renfrew in 1987 not only proposed a central Anatolian location for the PIE speech community, but also claimed that it dated to 7000 BCE, associating the presumed movement of Indo-European languages *into* Europe with the spread of farming dated to that era. Barber (2001) and Darden (2001) make what I regard as compelling arguments against Renfrew's thesis, showing that the PIE lexicon includes cultural terms associated with the so-called "secondary products revolution", thus precluding a date for PIE earlier than the late fifth millennium. I may add the further counterargument that, if the Anatolian Indo-European languages at the time of their attestation had been *in situ* for five

⁶ There is even less merit to the claims of Whittaker (1998 and elsewhere) of an Indo-European "substrate" in Sumerian. For a detailed refutation of his proposal see Rubio 2005.

thousand years, it is not remotely credible that they would show so few genuine loanwords from or into Sumerian, Hattic, or the nearby Semitic languages.⁷

I therefore maintain the traditional majority view that the Indo-European Anatolian languages are intrusive. As indicated above, linguistic arguments can contribute little to the question of the route of the supposed migration. Nor can we determine even approximately the number of speakers involved and the nature of their movement: hostile invasion, migration, “line of advance” penetration, or some combination of these. We can, however, say something useful about the timing. Contrary to earlier views, there has now developed a consensus among linguists that entry of Indo-European speakers into Asia Minor was much earlier than previously assumed. See Melchert (2003a: 23-26) with references to Carruba (1995), Oettinger (2002a) and others, and also Lehrman (2001: 116-117) and Yakubovich (2008a: 4-5). The gist of the argument is that the attested degree of differentiation of the IE Anatolian languages such as Hittite and Luvian already by the beginning of the second millennium requires at a minimum that their

⁷ I stress that I know of not a single compelling example for a *pan*-Anatolian loanword from any non-IE Near Eastern language. Loanwords into the individual IE Anatolian languages naturally reflect much later processes. Contra Simon (2006: 317) the distance between the languages cited and those of Anatolia is not remotely great enough to explain the absence of such loanwords.

divergence from Proto-Anatolian began by the middle of the third millennium. It may easily have begun as early as the end of the fourth.⁸

We must, of course, always bear in mind that the concept of an IE Anatolian subgroup is fundamentally *linguistic*. Nothing assures us that the location of the Proto-Anatolian speech community was in Asia Minor, nor is it certain that there was a single movement of IE speakers into Asia Minor (cf. Darden 2001: 220). Nevertheless, that much of the differentiation of the IE Anatolian languages took place as their speakers spread out across Asia Minor must be the default assumption in the absence of contrary evidence.

Further arguments have recently been adduced for a relatively early presence of the IE Anatolian languages in Asia Minor, based on evidence for their prehistoric interrelationships. Starke (1997, esp. 457) argues convincingly that the presence of Luvian across a wide area of western Asia Minor presupposes a late prehistoric movement of Luvian speakers that postdates earlier population movements that produced the differentiation reflected in Lydian, Lycian, Carian, and Luvian itself. Evidence also continues to mount for extensive *prehistoric* influence of Luvian on Hittite: see Yakubovich (2008a, esp. Chapters 4 and 5).

⁸ None of the scholars cited accept the premises of glottochronology, so estimates of the time depth needed to produce the attested linguistic differentiation can only be approximate.

While one obviously cannot give precise dates, the developments described by Starke and Yakubovich undeniably require a significant amount of time for a sequence of dialectal divergence among the IE Anatolian languages followed by their subsequent prehistoric influence on one another. Under these circumstances, redating of the entry of Indo-European speakers into Asia Minor to no later than the middle of the third millennium seems the minimal adjustment required, and the event(s) may have occurred well before then.

2.2 Anatolian Dialectology

As indicated earlier, for many years the relatively poor attestation of the IE Anatolian languages other than Hittite severely restricted the amount of useful information they could provide us for recovering the linguistic features of Proto-Anatolian. As a result, despite the recognition of an Anatolian subgroup, there was almost no serious reconstruction of Proto-Anatolian. This situation fostered an unfortunate tendency to effectively project the features of (Old) Hittite back to Proto-Anatolian and to reflexively view any divergences in the other languages as due to innovation on their part. It is obvious, however, that the language that by historical accident happens to be the best attested in a subgroup is not necessarily always the most conservative (one may compare the situation of Sanskrit and Avestan within Indo-Iranian).

Fortunately, some major new textual finds in the case of Hieroglyphic Luvian, Lycian, and Carian, and publication by various scholars of much

improved text corpora for several of the languages have in the past quarter-century led to dramatic improvement in our knowledge of the “minor” languages. Regarding the dialectal relationships among the Anatolian languages one may consult among others Oettinger (1978), Starke (1997: 468), Melchert (2003b), and Yakubovich (2008a: 3-4). One cannot properly speak of a consensus, and it remains an open question whether the facts are best accounted for in terms of strict divergence (with a stemma model), overlapping innovative isoglosses, or divergence combined with some later contact phenomena. One point on which there is widespread agreement is that Luvian and Lycian form a dialect group, to which Carian probably also belongs.⁹ The position of Lydian and Palaic remains under debate. Interestingly, there is little or no evidence for subgrouping of Hittite with any other language.

For present purposes the details of subgrouping within the Anatolian family are generally of limited significance. What is important in evaluating the position

⁹ I, followed by some others, have adopted the label “Luvic” for this group instead of the more popular “Luvian”, in order to forestall confusion with Luvian in the narrow sense of just the language represented by Cuneiform and Hieroglyphic Luvian (or more properly, with Yakubovich 2008a, Kizzuwatnan and Empire Luvian). This terminological difference, however, should not be allowed to obscure the basic agreement regarding the dialect group’s existence.

of Anatolian vis-à-vis the rest of Indo-European is rather the now demonstrated presence in other Anatolian languages of certain PIE features that are lacking in Hittite. Due to the superior quantity and quality of its evidence, Hittite will perforce continue for the foreseeable future to occupy a privileged position within the study of Anatolian. However, we are now in some instances able to place it in its proper place as merely *one* of the languages that contribute to our picture of Proto-Anatolian, confirming that like all other natural languages Hittite reflects a mixture of archaisms and innovations. To the extent allowed by current knowledge, the following discussion of the relative position of Anatolian within Indo-European will be based on what we can reconstruct for Proto-Anatolian, not merely on the facts of Hittite.

3. Diagnostic and Non-Diagnostic Features

3.1 Basic Premises

I adhere in what follows to the widely accepted principle that the crucial factor in linguistic subgrouping consists of non-trivial common innovations. Only when a subgrouping has been established on the basis of shared innovations can common retentions, if numerous enough, perhaps be adduced as supporting evidence. One well-known limitation on this procedure is that not all linguistic changes are clearly unidirectional. That is, if one set of languages shows state A of a given feature, and another state B, we cannot necessarily determine which represents the innovation. Defining a “non-trivial” innovation is also not always

straightforward. For these and other reasons not every observed difference between the Anatolian and non-Anatolian IE languages will be useful for our purposes.

3.2 Phonological Features

3.2.1 Segmental Phonemes

3.2.1.1 Laryngeals

The unique (partial) retention in Anatolian of the PIE “laryngeals” as consonants obviously per se furnishes no evidence for defining Anatolian as a subgroup versus the non-Anatolian languages. Scholars have proposed a number of putatively PIE rules for conditioned deletion of laryngeals. If it could be shown that one or more of these operated only outside Anatolian, they could be viewed as features establishing “Indo-Hittite”. However, some of these deletion rules almost certainly include Anatolian: see Nussbaum (1997: 182-183) on the “Saussure-Hirt Effect” in Hittite (**h₂wórs-o-* > *warša-* ‘mist, steam’, **kólh₂-mo-* ‘stalk’ > *kalmara-* ‘ray, beam’, *kalmi-* ‘burning log’, etc.)¹⁰ and Mayrhofer (1986: 132) following Eichner on **h₁ésh₂n-* > Hittite *ēšnaš* ‘of blood’ (~ Sanskrit *asnás*).

¹⁰ The rejection of the latter etymologies by Kloekhorst (2008: 431) on semantic grounds is entirely unjustified. The words are named for their *shape*, as is Hittite *kalmuš-* ‘lituus’ (i.e., a stick), which is also derived from the same source (Rieken 1999a: 211-212), *pace* Kloekhorst and Puhvel (1997: 29).

In the case of others known to me we cannot yet affirm with any confidence that they did not apply also to Anatolian.¹¹

There is no question that various non-Anatolian languages regularly show a vocalic segment as the reflex of a laryngeal in the position between obstruents (or obstruent and word boundary). Whether this reflects a direct syllabification (“vocalization”) of the laryngeals or anaptyxis may be left open here. At issue is whether Anatolian shares in this development. Lindeman (1987: 106) and Melchert (1994a: 69-70) expressly deny this, but Kimball (1999: 388) insists that at least the word for ‘daughter’ (HLuvian *tu-wa/i-tara/i-* /*twatra/i-*/ and Lycian *kbatra-*) must reflect a preform **dhug̊ter-* with the same vocalic reflex as seen in Sanskrit *duhitár-* and Greek *θυγάτηρ*. Kloekhorst (2008: 903-904) boldly suggests an ablauting form **dhwegh₂tr* to avoid the need for anaptyxis in the Luvic word, but direct extra-Anatolian evidence for such an ablaut is lacking. Until we gain a better understanding of the conditioning for the loss of voiced dorsal stops in the Luvic languages and for the deletion of interconsonantal laryngeals in PIE, it is impossible to be sure whether the Luvic word for ‘daughter’ is a special case or

¹¹ An exhaustive list of such proposed deletion rules is impossible here. I cite as merely representative the so-called “Wetter”-Regel (see Peters 1999 with refs. and Hill 2003: 17-19) and those of Pinault (1982), Peters (1986), and Hackstein (2002).

does in fact show the same vocalic reflex of a laryngeal between obstruents as we find outside Anatolian.

3.2.1.2 Dorsal Stops

In Melchert (1987) I argued that Luvian shows a three-way contrast of voiceless dorsal stops before front vowel (see also the independent account of Morpurgo Davies and Hawkins 1988). There I left open the question whether this reflects an unconditioned contrast or a conditioned split of PIE $*\hat{k}$ (1987: 203). However, in Melchert (1989: 23-32) I concluded that the contrast was unconditioned. This claim has been widely accepted (e.g. by Kloekhorst 2008: 17-18), but there has been occasional dissent (e.g. by Sihler 1995: 154). Most of the objections of Woodhouse (1998) are unfounded, and his own attempt to account for the Luvian and Lycian facts in terms of unrounding of labiovelars is not remotely credible. If my claim of 1989 is upheld, then Anatolian would show neither the “centum” merger of velars and labiovelars nor the “satem” merger of palatovelars and velars, and these two mergers would represent a “post”-Anatolian development.

However, one point raised by Woodhouse (1998: 40) cannot be so easily dismissed: one must agree with him that it would be extremely strange for a language to show an *unconditioned* development of voiceless palatovelar (or front velar) $*\hat{k}$ to an affricate /ts/ while the corresponding voiced aspirate $*\hat{g}h$ appears as a velar stop before back vowels. One can and should ignore my feeble attempt

(1987: 186) to explain away CLuvian *katmarš-* ‘defecate’ < **ḡhod-mVr-* or CLuvian *kuttaš(ša)ra/i-* and HLuvian /*kutassra/i-* ‘orthostat’ < **ḡh(o)ut-* (~ Hittite *kutt-* ‘wall’).¹²

While the overall evidence for Luvian /*ts/* and Lycian *s* < **k̂* is quite robust (*pace* Sihler 1995: 154), the only basis for this development before back vowel consists of the putative equation of the Luvian suffix *-(i)zza-* with Lycian *-is(e)-* and its derivation from a PIE **-i(s)k̂o-* (Melchert 1989: 29-30). My assumption of a preform **-i(s)k̂o-* was problematic from the start. Evidence for an **-i(s)k̂o-* beside well-established **-i(s)ko-* is virtually non-existent.¹³ More seriously, it is now clear that the Lycian suffix *-is(e)-* forms in the first instance abstract and

¹² Since the Hittites regularly constructed outer walls using the “Kastenmauer” technique involving the use of fill, derivation of ‘wall’ from a root meaning ‘pour’ is semantically impeccable. Contra Kloekhorst (2008: 499), as an animate *t*-stem the Anatolian noun reflects a modified acrostatic **ḡhóu-t-s*, **ḡhu-t-* (thus with Rieken 1999a: 137).

¹³ On Sanskrit *-śa-* see Brugmann (1896: 2.1.473-474) and Wackernagel-Debrunner (1954: 929-930). The only example with cognates outside Sanskrit is *yuvaśa-* ‘youthful’, which matches Latin *iuuencus* ‘young bull’ and cognates in Celtic and Germanic. In the absence of supporting evidence from any other satem language this is a very slender basis for a PIE variant **-k̂o-*.

collective substantives, not adjectives: see Eichner apud Borchhardt et al. (1997-99: 83). It thus forms no equation with Luvian *-(i)zza-* (where the *-i-* is not inherent), which is rather cognate with Lycian *-(a)za-* < **-tyeh₂-* (for which see Hajnal 1994: 151-152): NB CLuvian *wašhazza-* ‘holy, sanctified’ ~ Lycian *wasaza-* (kind of priest), HLuvian *ku-ma-za-* ~ Lycian *kumaza-* both ‘priest’.

With the removal of this example for **k̂* > Luvian /ts/ and Lycian *s* before **o*, nothing stands in the way of assuming rather a *conditioned* change of **k̂* into /ts/ ~ *s*. The most solid examples for Luvian /ts/ and Lycian *s* < **k̂* stand either constantly or in some parts of an alternating paradigm before a front vowel, yod or **w* (NB not **u*). For **w* as a fronting environment one may compare the frequency of **k̂/ġ(h)w* in PIE versus the near absence of **k/g(h)w*. HLuvian /zurnid-/ ‘horn’ < **k̂ngid-* (cf. Hittite *karkid-ant-* ‘horned’ and Sanskrit *śṃga-* ‘horn’) and CLuvian *zanta* ‘down’ < **k̂ntō* (= Hittite *katta* and Greek κάτω) suggest that **k̂* was also affricated before syllabic sonorants. Elsewhere, notably before all back vowels, it merged with **k*.¹⁴

A complete review of the vexed problem of the results of voiced dorsals in Luvic is not possible here, but the current facts are likewise compatible with a

¹⁴ For /zurnid-/ see Starke (1990: 406-407) and for *karkidant-* Puhvel (1997: 89).

The unexpected *u*-vocalism of the syllabic **ġ* has parallels in Anatolian (Melchert 1994a: 260). For CLuvian *zanta* as ‘down’ see Goedegebuure (forthcoming).

conditioned split of **ĝ(h)* into yod before front vowel versus *g* (eventually devoiced to *k*) initially before back vowel (see the examples above) and widespread (perhaps general) loss internally before vowel (see on this issue Kimball 1994).¹⁵

The result of this revised account of dorsals in Luvic is that Anatolian may be regarded as “centum”, showing eventual merger of the palatovelars and velars (or more likely front and back velars). However, Luvic is in effect the “mirror image” of Albanian. In Luvic there was before the merger of the front and back velars a conditioned split of the former (but not the latter, confirming inheritance of a three-way contrast). Whereas Albanian, as a satem language, eventually merged the back velars and labiovelars, but not before there had been a conditioned split of the latter (see most recently on this issue Matzinger 2006: 70-73). Therefore

¹⁵ The one certain example of preserved word-internal **ĝh*, HLuvian *ta-ka-mi* ‘on the land’, may be explained either as reflecting a cluster **-ĝhm-* (Kimball 1994: 81) or a secondary geminate generalized from the nom.-acc. form: /taggami/ after **taggam* < **dhéĝhom* by “Čop’s Law” (Čop 1970: 90-91). In either case we would once again have the treatment as a velar stop in a non-front environment, as in the two word-initial examples.

nothing in its treatment of the PIE dorsal stops suggests that Anatolian is more archaic than any other subgroup.¹⁶

3.2.2 Synchronic Phonological Rules

I know of no synchronic phonological rule of PIE that can be definitively shown to be a non-Anatolian innovation. One certainly is not: both Hittite and Luvian preserve the PIE rule by which the first of two (heterosyllabic?) dental stops is dissimilated to an affricate: Hittite /e:dtən/ and CLuvian /a:dtan/ ‘eat!’ (imperative 2nd plural) appear as *ēz(zas̄)ten* [e:tstən] and *āzzaštan* [a:tstən].¹⁷ In Melchert (2003c) I have argued that CLuvian *īnzagan* means ‘inhumation’ and reflects a similar dissimilation of dental stop to affricate before dorsal stop, what is traditionally referred to as PIE “thorn”. This claim must remain uncertain

¹⁶ The raising of **ei* to *i* in Hittite *ki-* ‘lie’ < **kēi-* may or may not show a contrast of front velar vs. back velar in pre-Hittite. The same change occurs in *kiš-* ‘become’ (cognate with German *kehren* ‘turn’) which may reflect **geis-* or **gēis-*. We have no secure example for a back velar followed by **ei* in Hittite (see on this problem now Kloekhorst 2008: 474-475 and 480-481 with refs.).

¹⁷ Since a synchronic phonological rule may remain in a language indefinitely, the objection of Hill (2003: 4) to the PIE status of the rule is entirely specious. For this rule as a dissimilation and not “s-epenthesis” see Melchert (2003c: 154), following Merlingen.

pending the discovery of a second Anatolian example of this development. In any case, however, as already noted in Melchert (1994a: 64), there is no basis for establishing that the appearance of “thorn” is a non-Anatolian innovation.

Positive Anatolian evidence for other synchronic phonological rules of PIE is likewise less than robust, but at least suggestive. Palaic present indicative 2nd singular *mu-ú-ši* to *muš-* ‘enjoy’ (thus with Yakubovich 2005: 117 against me and others) suggests that Anatolian inherited the PIE rule simplifying **ss* to **s* (Mayrhofer 1986: 120). Hittite present indicative 2nd singular *ēšši* ‘you are’ represents a trivial analogical restoration, just like Greek *έσσι* beside *ει̃*. For discussion of likely reflexes of “Sievers-Lindeman” in Hittite see Melchert (1984: 25-27 and 56-57) but compare also Eichner (1988: 137) and Melchert (1994a: 57-58).

The synchronic status in Anatolian languages of regressive voicing assimilation in obstruents is dubious, but Hittite indicative preterite 3rd singular *wakkiš* to *wak-* ‘bit’ and imperfective stem *akkuške-* to *eku-/aku-* ‘drink’ appear to be relics of such a rule (see the discussions in Melchert 1994a: 57 and Kimball 1999: 300-301). The evidence cited by Puhvel (1972) for reflexes of “Bartholomae’s Law” (progressive assimilation **/D^hT/ > *[DD^h]*) in Hittite is

false,¹⁸ but the appearance of the PIE “instrumental” suffix variant **-dhlo-* in Hittite *-ulli-* < **-u-dhli-* (Čop 1966-68: 54-55)¹⁹ with assimilation versus Hittite *šiyattal-* ‘missile, spear’ < **sh₁yo-tlo-* (Melchert 1993: 110) suggests that Anatolian does reflect the effects of Bartholomae’s Law (on its status as a PIE rule see Mayrhofer 1986: 115-117 with refs.).

3.3 Morphological Features

3.3.1 Nominal Inflection

3.3.1.1 Gender

Perhaps no feature of Anatolian has generated more discussion than the absence of a feminine gender distinct from the masculine. The chief argument cited in the older literature for interpreting this fact as reflecting a loss lay in the putative presence of the PIE “motion-suffix” **-ih₂/-yeh₂* in Hittite adjectives of the type *parkui-* ‘pure’ (beside *parku-nu-* ‘to purify’), comparable to the type of

¹⁸ PIE **kt* does *not* assimilate to *tt* in Hittite, as shown by *šaktā(i)-* ‘perform sick maintenance’ < **sokto-* (cf. Old Irish *socht* ‘stupor’, as per Watkins 1976). Hittite *uttar* ‘word’ belongs to PIE **weth₂-* ‘say’ (Latin *uetāre*, Middle Welsh *dy-wed* etc.). The alleged Hittite variant †*uk-tar* is a ghost word (read Akkadian *AŠKUT* ‘I was silent’, as per Eichner, *Sprache* 21 [1975] 164).

¹⁹ The coexistence in Hittite of the suffix *-utri-* (as in *waššutri-* ‘garment’) < **-u-t/dhri-* confirms Čop’s analysis of *-ulli-*, contra Rieken (1999a: 444).

Sanskrit feminine *svādvī-* ‘sweet’ (beside masculine-neuter *svādú-*): see e.g. Pedersen (1938: 35-36) and Kronasser (1966: 107).²⁰

The entire topic was renewed by the discovery by Starke (1990: 54-85) of the phenomenon of “*i*-mutation”,²¹ by which many nouns and adjectives in Luvian and Lycian—and to a lesser extent in Lydian—are marked by an *i*-suffix just in the common gender nominative and accusative: e.g. CLuvian NSgC *ādduwalīš*, ASgC *ādduwalin*, NPIC *ādduwalinzi*, APIC *ādduwalinza** vs. N-APINeut *ādduwala* and Abl-Inst *ādduwalati*. Starke himself (1990: 85-89) suggested that this pattern might reflect the PIE appurtenance suffix **-ih_x* of the type of Sanskrit *kṛṣṇī-* ‘night’ or *vṛkī-* ‘female wolf’.²²

²⁰ Goetze (1960: 45-46 and 50) adduced in addition the formation of feminine personal names in *-ašwe* beside masculine names in *-ašu* in texts from the Assyrian colony period. A close examination shows, however, that Goetze could not actually show any such directly contrasting pairs. See the fully justified skepticism of Kronasser (1966: 115-117).

²¹ Starke’s own designation as a “Motionssuffix” is infelicitous for the synchronic feature, since the addition of the *-i-* does not alter the gender of the underlying stem.

²² It is important to stress that Starke characterized the suffix as a “Zugehörigkeitssuffix”, not as a feminine “Motionssuffix”.

Oettinger (1987) argued that the Anatolian “*i*-mutation” was rather a reflex of the PIE ablauting feminine motion-suffix $*-ih_2/-yeh_2$, and I followed him in Melchert (1994b) with some revisions. Furthermore, in Melchert (1992) I showed the existence of common-gender nouns in Lycian with *a*-vocalism and concluded that these must reflect specifically feminine nouns in $*-eh_2$, since collectives formed with this suffix appear as neuter *pluralia tantum*. I made a parallel argument regarding Hittite *ḫāšša-* ‘hearth’ (= Latin *āra*): see for similar but slightly different reasoning regarding the latter also Harðarson (1994: 35-39).

However, Hajnal (1994) has decisively refuted the claims that the presence of common gender nouns in Anatolian with a suffix $*-eh_2$ demonstrates its prehistoric use there as a feminine motion-suffix. Many such nouns have masculine referents, and more importantly there is no evidence for feminine agreement in adjectives. Rieken (2005) has also now presented a convincing account of Anatolian “*i*-mutation” as originating in secondary derivatives in $*-i-$.²³ This feature thus provides no compelling basis for the existence of either ablauting $*-ih_2/-yeh_2$ or $*-ih_x$ in Anatolian as a feminine motion-suffix.²⁴

²³ On the Hittite type of *parkui-* ‘pure’ see Rieken (2005: 56-57 with note 7). The one suspiciously complicated step in her scenario (2005: 57-58) may be simplified if one assumes that a secondary *i*-stem like $*s_0/élh_2-i-$ was an endocentric derivative *‘the great (one)’ from $*s_0/élh_2-o-$ ‘great’, rather than an

One cannot in principle prove a negative. However, the suffix **-eh₂* is undeniably present in Anatolian in its function of deriving abstracts and collectives, universally agreed to be older than its use as a feminine motion-suffix. Likewise, as per Widmer (2005), Hittite *nakkī-* ‘heavy’ probably reflects the “*v₁rkī-*suffix” in its older use as an appurtenance suffix: **h₁nóko-* ‘burden’ → **h₁noḱ-ih_x* *‘burdensome’.²⁵ This distribution must in the absence of compelling counterevidence be taken as *prima facie* evidence for an archaism, and contrary to my own earlier claims I now regard the development of the feminine gender to be a common innovation of the non-Anatolian Indo-European languages.²⁶

exocentric abstract *‘greatness’, following the idea of Nussbaum apud Vine (2006: 155).

²⁴ Eichner (1985: 135-136¹³), following Sommer (1947: 52-53), argues for the archaicity of **-ih₂/-yeh₂* based on its ablaut, but this argument applies only to the suffix’s *existence* in the prehistory of Anatolian, not its use as a feminine motion-suffix.

²⁵ I take no stand here on Widmer’s further analysis of the origin of the suffix or on the question of the quality of the final laryngeal.

²⁶ Discussion of the much vexed question of just how this development took place is impossible here. I can only refer readers to *some* of the most relevant recent

3.3.1.2 Number

Eichner (1985) argued that PIE had a four-way number contrast in animate nouns: singular, dual, distributive plural and collective (or comprehensive) plural.²⁷ Inanimate nouns were defective in lacking a distributive plural (1985: 167-168). This claim was rejected by Harðarson (1987a: 83-84) and Tichy (1993: 7-8), but in Melchert (2000) I showed that Old Hittite still directly attests the contrast of distributive and collective plural in animate nouns as posited by Eichner, while it has only imperfectly filled the gap of a distributive plural for inanimates. However, in non-Anatolian Indo-European we find only relics of the contrast in animate nouns (Latin *locus, locī, loca*) and an indirect reflex of the lack of distributive plural in inanimates in Tocharian (see again Melchert 2000). Already in Vedic Sanskrit and Homeric Greek the old collective plural clearly functions as a distributive plural: e.g. *trīṇi śīrṣā́* ‘three heads’ and *δέκα τάλαντα*

literature: Harðarson (1987ab), Tichy (1993), Ledo-Lemos (2000), Matasović (2004), Luraghi (2006), Kim (forthcoming).

²⁷ As per Eichner (1985: 150-151), it is a matter of taste whether one views the last two categories as subtypes of plural as given here, or as two distinct categories plural and comprehensive. I retain here for convenience the more common label “collective” also for the inflectional category.

‘ten talents’ respectively.²⁸ It is thus highly likely that reduction of the four-way contrast to three and loss of the distinction between distributive and collective plural is a common post-Anatolian innovation (cf. Neu 1976: 246).

On the other hand, the absence of a synchronic dual in the noun in Anatolian is almost surely due to loss. The most secure reflex consists of the CLuvian forms *iš(ša)ra* ‘hands’ and *pāta** ‘feet’ (GÌR.MEŠ-ta), whether the ending *-a* continues original athematic **-h₁e* or generalized thematic **-oh₁*: see Eichner (1993: 110⁵⁶), Schindler apud Watkins (1986: 60³³ = 1994: 715), and Starke (1990: 29).²⁹ A case has been made with varying degrees of plausibility also for traces of the PIE neuter dual ending **-ih₁*: Hittite ^{GIŠ}*ēlzi* ‘(pair of) scales’ (Puhvel 1984: 270), ^{KUŠ}*išmeri* ‘reins’ and *dānḫašti* ‘double-bone’ (Starke 1990: 29), *mēni* ‘cheeks’ and *iniri* ‘eyebrows’ (Rieken 1994: 52). On dual number in the verb see 3.3.4.1 below.

3.3.1.3 Case

Hittite and Palaic dative-locative plural *-aš* and Lycian dative-locative plural *-e* reflect a PIE dative plural ending **-os* (Neu 1991: 14 and Melchert 1994a: 182&193 against Neu 1979: 193, Starke 1982: 423, et al.). As shown by

²⁸ I am indebted to Siliva Luraghi for reminding me of this point.

²⁹ As per Eichner, these forms were synchronically incorporated into the system of collective plural in animate nouns.

Goedegebuure (2007), HLuvian *zin* and *apin* function as the ablative-instrumental forms of the demonstratives *za-* ‘this’ and *apa-* ‘that’ and continue a PIE ending **-im*, for which see Dunkel (1997) following Delbrück. Anatolian attests the ending **-bhi* only in a locative function in adverbs, such as Hittite *kuwapi* ‘where; when’. As per Jasanoff (2008), the non-Anatolian ablative-dative plural ending **-bh(y)os* is transparently a hybrid of **-bhi+os*. Given the now demonstrated existence of **-(i)m* in Anatolian, Melchert and Oettinger (forthcoming) have suggested that non-Anatolian dialectal **-mos* is likewise a hybrid of **-m+os*. Both complex endings surely represent post-Anatolian innovations. Further suggestions by Melchert and Oettinger (forthcoming) regarding the relative chronology of developments in the endings of the ablative and instrumental remain to be tested and will not be discussed here.

3.3.1.4 Thematic Inflection

It is well known that in Hittite and in Anatolian more generally there is no fundamental contrast between athematic and thematic inflection, except for the neuter nominative-accusative singular, where the class continuing old *o*-stems shows the expected reflex of **-om*, whereas other stems have a zero ending. It has been suggested (e.g. Villar 1974: 277-278, Hajnal 1997: 71¹²¹) that this state of affairs reflects at least in part an archaism, in that some oblique forms of the thematic class reflect the athematic endings with no thematic vowel: thus genitive

singular **-os*, locative singular **-ei*, not **-o-s* respectively **-o-i/-e-i* (contra Tichy 2000: 66-7, Meier-Brügger 2000: 186, et al.).

However, the shortening of all unaccented inherited long vowels in Proto-Anatolian (Eichner 1973: 79 & 86¹⁵) would have led to widespread merger of the athematic and thematic genitive plural and dative-locative plural as **-om* and **-os* (oxytone *o*-stems are exceedingly rare in Anatolian, as is preserved accent alternation in athematic paradigms). The thematic dative singular **-ōi* would have frequently merged with the locative singular in **-oi*. In the prehistory of the individual languages **-oi* would further have merged with **-ei* (thematic locative singular or athematic dative singular). Outside Hittite there was likely further merger with athematic locative singular **-i*. At least some shared endings of the athematic and thematic classes must be analogical: Hittite animate nominative plural *-ēš* represents **-eyes* generalized from *i*-stems (see most recently Sidel'tsev 2002), while the Luvic languages have rebuilt the animate nominative plural on the accusative plural. Under these circumstances, there is little basis for the putative archaic status of the thematic genitive or dative-locative singular.

On the other hand, there is positive evidence for Anatolian having inherited a full thematic declension. Palaic preserves the thematic animate nominative plural **-ōs* (via shortened Proto-Anatolian **-os*) in *aškummauwaš* 'sacralized meats' and

mārḫaš ‘gods’.³⁰ As per Hajnal (1995: 98), Lycian infinitives in *-Vna* reflect the expected athematic allative ending **-eh₂* (Hajnal) or **-h₂e* (Melchert 1994a: 324), while *-Vne* continues the analogically spread thematic ending **-o-h₂* (as in Latin *quō* ‘whither?’). We also find evidence for the thematic genitive singular ending **-e/oso* at least in Lycian (Bader 1991: 40 and Adiego 1994: 14-21) and Carian (Melchert 2002: 309) and for thematic **-osyo* in HLuvian */-asi/* (Szemerényi 1990: 195) and Carian *-ś* (Schürr 2001: 117). See further on both endings Yakubovich (2008b), including the possibility that both are attested in CLuvian. Their attested distribution argues against these genitive endings being confined to the pronominal declension in Proto-Anatolian. I therefore conclude that Proto-Anatolian inherited an already fully elaborated thematic inflection.

3.3.2 Nominal Derivation

Oettinger (1986) offered a very thorough survey of the Anatolian facts of nominal derivation relevant for evaluating the position of Anatolian vis-à-vis the rest of Indo-European. Much has changed in our overall picture of Anatolian nominal derivation in the last two decades, but most of the attendant revisions

³⁰ Athematic stems in *-au-* or *-h-* in these nouns are structurally highly implausible. As per Eichner (1974:184) and Neu (1979: 192 and 1991: 15), it is possible that the Old Hittite nominative plural *[ḫante]zziaš* to a *yo*-stem also reflects PIE **-ōs*.

have had little effect on the diagnostic status of particular features as outlined by Oettinger. I confine the discussion here to three points.

Rieken (2008) has shown that Hittite stems in *-īl-* and *-ūl-* reflect syncopated thematic stems in **-i/úlo-*. The widespread presence of archaic *l*-stem inflection in Anatolian, first promoted by Benveniste (1935: 40-49) and still assumed by Eichner (1973: 85⁶), Oettinger (1986: 16-17), Starke (1990: 301) and Melchert (2001: 263) is thus illusory.³¹

On the other hand, Oettinger (1986: 27¹⁶) dismisses rather too quickly the significance of the attested function of the participial suffix *-ant-* < **-e/ont-* in Anatolian. It is true that Anatolian may have once had and lost the aspectual distinction between imperfective and perfective stems (“present” and “aorist” in traditional terminology): see 3.3.4.3 below. We therefore cannot determine on purely formal grounds whether the Anatolian *-ant-* participle reflects a formation

³¹ Rieken (2008: 250⁷) also suggests that Luvian and Hittite neuter instrumental nouns in *-al* likely reflect thematic stems in **-olom*, but the presence of the productive Hittite suffix *-āla-* < **-ó-lo-* argues rather for primary athematic **-lo-* (cf. Icelandic *þél* ‘buttermilk’ < **ténk-lom* beside Sanskrit *takrám* ‘buttermilk mixed with water’ < **tṛk-lóm*), with the development of **-C-lom* sketched in Melchert (1993).

built on characterized aspectual/tense stems or a verbal adjective originally derived directly from the root.

However, the Hittite participle in *-ant-* regularly expresses an attained state: *akkant-* ‘having died, dead’, *pānt-* ‘gone’. In the case of transitive verbs the sense is usually passive (*appant-* ‘taken, seized’, *kunant-* ‘killed, slain’), but may occasionally be active (*adant-* ‘eaten’ or ‘having eaten’, *akuwant-* ‘drunk’ or ‘having drunk’). This function of *-ant-* is already Proto-Anatolian, as seen in relics elsewhere: CLuvian *walant(i)-/ulant(i)-* ‘dead’ and Lycian *lāta-* ‘dead’ (NB not ‘dying’!). That in the case of a few intransitive verbs an attained state may be pragmatically equivalent to an ongoing one does not alter the basic function: *ešant-* ‘seated, sitting’. In the other oldest Indo-European languages suffixes reflecting **-e/ont-* have an exclusively active and processual meaning: Tocharian AB *ešant/aiššenca* ‘giving’, Sanskrit *bhindánt-/bhidánt-* ‘splitting’, Greek *διδούς/δούς* ‘giving’, Latin *ferēns* ‘carrying’, etc. It is difficult to see how either the Anatolian or non-Anatolian attested function could have developed from the other. They represent rather different specializations of a PIE verbal adjective that had not yet acquired the function of a true participle (thus Kuryłowicz 1964: 167).³²

³² Oettinger (1986: 35¹¹⁹) correctly argues against the enduringly popular derivation of the productive Luvian and Lycian participial suffix *-Vmma/i-* ~

The status of the adjectival suffix **-to-* is less clear-cut. Oettinger (1986: 23) emphasizes the extreme rarity of deverbative examples in Anatolian. There are in fact no entirely assured cases. Given the plene spelling of the first syllable in Hittite *ša-a-ak-ta-a-iz-zi* ‘performs sick-maintenance’, this verb may reflect a PIE noun **sók-to-* (cognate with Old Irish *socht* ‘stupor’) of the type of Grk. νόστος ‘return home’, as per Watkins (1976: 25), and likewise Palaic *tarta-* ‘curse’ a noun **tór-to-*. If it in fact even means ‘fasten’, the Hittite denominative verb *mitā(i)-* also would require a preform **(h₂)mói-to-* (Catsanicos 1986: 156 and Kimball 1999: 215 against Oettinger 1979: 377), but the word more likely is derived from *mita/i-* ‘red’: see Puhvel (2004: 166), Steer (2008: 143⁷), and Kloekhorst (2008: 583). Hittite *mūtā(i)-* may mean ‘(re)move’ and reflect an adjective **múh_x-to-* *‘moved’ with irregular accent (Eichner 1979: 48-50¹⁴), but

-Vme/i- from the PIE thematic present medio-passive participle **-mh₁no-* on the same functional grounds, and the argument applies likewise to any equation with the present passive participle of Balto-Slavic (contra Kammenhuber 1969: 264 and Fortson 2004: 98). The Luvo-Lycian suffix is entirely parallel in function to Hittite *-ant-*, indicating an attained state, usually but not exclusively passive with transitive verbs. It almost certainly represents a secondary thematic derivative **-mn-o-* to neuter verbal nouns in **-men*, which are productive precisely in the Luvic languages, but not Hittite (see Starke 1990: 243-299, esp. 245).

the assigned synchronic meaning is not beyond question, and the etymology remains disputed: see the vigorous dissent by Puhvel (2004: 194-195) and the doubts of Kloekhorst (2008: 588). If it is correctly interpreted, Lydian *wšta(a)-* ‘alive, living’ may represent a verbal adjective **h₂us-tó-* (see most recently Gérard 2005: 73), but the sense is by no means certain. In any case, the almost complete absence of deverbative (deradical) examples of adjectival **-tó-* in Anatolian is not in dispute. On the other hand, denominative use of **-tó-* is reasonably productive. In addition to the examples cited by Oettinger (1986: 23) see those adduced in Melchert (1999: 368-372).

One may interpret this state of affairs in more than one fashion. If one believes that the denominative use is analogical to the deverbative (e.g. Buck 1933[1963] 335 for Latin), then one would assume that Anatolian once had the deverbative type and had subsequently lost nearly all traces of it. On the other hand, if one believes that at least some of the denominative type are of PIE date (e.g. Schwyzer 1953: 1.503) and that the deverbative use may have originated in secondary adjectives to root nouns (e.g. Brugmann 1896: 2/1.394), then one may regard the productivity of the deverbative type as a post-Anatolian innovation (see the discussion of Chantraine 1979: 302-306, esp. 306). Evaluation of this scenario is complicated by the issue of whether deverbative adjectives in **-to-* originated in compounds (thus Chantraine loc. cit. after Meillet and more cautiously

Schwyzler 1953: 1.502) or not (Benveniste 1948: 164-167) and the status of compounding in Anatolian (cf. Oettinger 1986: 24).

3.3.3 Pronouns

I know of no compelling examples of common non-Anatolian innovations in the stem formation or inflection of the pronouns. Anatolian does show a quite limited inflection of the accented personal pronouns, but it is by no means certain that the fully elaborated inflection seen in e.g. Sanskrit represents a common innovation of “inner Indo-European”.

It has been argued (e.g. Sturtevant 1933b: 4 and Watkins 1963: 13-16) that the anaphoric/demonstrative stem **so-/to-* with its unique allomorphy is a post-Anatolian innovation (NB that it appears in Tocharian). Hittite would represent a more archaic stage with its clause-initial conjunctions *šū* (for **so*) and *ta* < **to* to which enclitic forms of the pronominal stem **o/e-* are added by synchronic syntactic rules. This claim may be valid, but a number of factors raise serious doubts. First, there is no evidence for either **so* or **to* as a conjunction elsewhere in Anatolian. The only clause-initial conjunction assured to be Proto-Anatolian is that which appears in Palaic and Hittite³³ as well as Luvian as *a-*, and in extended

³³ The reading of the conjunction *a-* in KUB 48.99 and Bo 1391 (now KUB 60.59) as Luvian by Starke (1985: 253-255) is entirely arbitrary and unfounded, since every other word in these texts is indisputably Hittite.

form in Lydian *ak-*. The first two languages demand a prehistoric **o-*grade, and this conjunction likely reflects an instrumental **oh₁* (Dunkel 2007: 57).³⁴

Second, there are likely traces of the **so-/to-* pronominal stem in Anatolian. Rieken (1999b: 86) plausibly derives the Hittite conjunction *ta* from an instrumental **toh₁*, and the CLuvian “particle” *-ša* appended to the nominative-accusative singular of neuter nouns represents at least in part an enclitic deictic pronoun **-sod* (see Arbeitman 1992: 34). In any case, Proto-Anatolian clearly innovated a stem **obhó-* as an accented anaphoric pronoun and demonstrative. It cannot be excluded that it replaced an inherited **so-/to-* in the same functions.

3.3.4 Verbal Inflection

3.3.4.1 Person and Number

There is ostensibly little to say about person, where Anatolian displays the standard three persons of Indo-European languages. As to number, it is clear that the Proto-Anatolian first plural ending **-wen(i)* is built on the **-we-* seen in the first dual forms of Indo-Iranian and Balto-Slavic.³⁵ I personally find merit in the

³⁴ Dunkel chooses **eh₁* as the preform for the Luvian, which is phonologically possible, but economy demands **oh₁* as the common preform.

³⁵ The PA primary ending **-weni* is assuredly reflected in Hittite *-weni/-wani*, Palaic *-wini/-wani*, and CLuvian *-unni*, and secondary **-wen* at least in Hittite *-wen*, probably also in Lydian *-wv*. There are *no* traces of first plural endings with

suggestion of Watkins (1969: 47) that an early stage of PIE had in the verb (and the personal pronouns) not a contrast of first and second dual and plural but rather of first person inclusive, first person exclusive, and second person plural.

However, even if this hypothesis is correct, there is not the remotest possibility of proving that Anatolian directly reflects such a putative system. In the absence of such a demonstration, one must follow the *communis opinio* (e.g. Pedersen 1938: 89, Eichner 1975: 87) that Anatolian inherited a contrast of first dual in **-we+* vs. first plural **-me+* and generalized the former at the expense of the latter.

3.3.4.2 Tense

Anatolian clearly inherited the contrast of present and past tense marked in most persons by the opposition of the so-called primary and secondary endings (with and without final *-i*). There are no credible traces of the augment in Anatolian,³⁶ but the augment as an obligatory prefix marking the past tense is unlikely to be a common innovation of non-Anatolian Indo-European (see e.g.

-m- in Anatolian. All examples of *-meni* in Hittite are due to dissimilation after *-u-* (Melchert 1994a: 169 after Kammenhuber and Eichner 1988: 137 and Melchert 1994a: 57). There is no HLuvian present first plural ending *-min(a)* (Melchert 2004).

³⁶ Contra Eichner (1975: 78) Hittite preterite first singular *ešun* and third plural *eter* may reflect simply **h₁és-ṃ* and **h₁és-ēr*.

Meier-Brügger 2000: 170 and Tichy 2000: 119). The augment *é- cannot be equated with the Anatolian clause-initial conjunction *a-* (contra e.g. Watkins 1963: 15), on which see 3.3.3 above.

3.3.4.3 Aspect

One striking feature of the Hittite (respectively Anatolian) verb is that it is monothematic: all finite and non-finite forms are based on a single stem (which may show ablaut). It is obvious that most of these stems are built with suffixes that furnish the imperfective (“present”) stem in the oldest non-Anatolian Indo-European languages. However, the very multiplicity of these suffixes suggests that at an earlier stage they marked varieties of Aktionsart, and it has been suggested that Anatolian reflects this stage: see e.g. Strunk (1979: 248-250 and more systematically 1994) contra Eichner (1975: 83-85). In Melchert (1997) I argued that some Hittite and Luvian verbs do show two stems, with and without the suffix *-ye/o-, with *no* discernible difference in Aktionsart, whose distribution suggests that they may reflect a prehistoric imperfective (“present”) and perfective (“aorist”) contrast. The evidence is sparse and brittle, and the question mark of my title retains its validity. It seems fair to say that at present one can neither affirm nor deny that development of a perfective/imperfective aspectual contrast is a common innovation of non-Anatolian Indo-European.

Even more indeterminate is the status of the “perfect” in Anatolian, which is inextricably bound up with views regarding the prehistory of the *hi*-conjugation.³⁷ Deriving the *hi*-conjugation as a whole from the perfect is not viable (see below 3.3.4.6), but it remains an open question whether some attested *hi*-verbs do reflect old perfects, and if so which ones. Jasanoff (2003: 11&37 and 117-118) argues that Hittite *wewakk-* ‘demand’ and *mēmi/a-* ‘speak’ continue *reduplicated* perfects (on the former see already Jasanoff 1994: 156). See also Forssman (1994: 103) for Hittite *šipand-* ‘libate; sacrifice’ < **spe-spónd-* (vs. *išpant-* ‘idem’ < **spend/spṇd-*). On the other hand, Oettinger (2001: 80-83, 2002b: xxiii-xxvi, 2006: 37-42) views the perfect (along with the present type of Sanskrit *dadhāti* and the intensive type of Sanskrit *várvarkti*) as a post-Anatolian development of a PIE reduplicated present that appears in mostly de-reduplicated form in the Anatolian *hi*-conjugation. Hajnal (1999: 8-25) sees rather the Anatolian *hi*-conjugation and the

³⁷ I follow the widespread view that in its oldest direct attestations the perfect expresses a (resultant) state (e.g. Hajnal 1999:6, Meier-Brügger 2000: 238, Tichy 2000: 88). I treat it under aspect because I believe it clearly does not belong to the categories of tense or voice. On the problem of its functional definition see the references in Di Giovine (1990-96: 1.16-18) and his own conclusion that it is an Aktionsart (1990-96: 2.273-276).

post-Anatolian perfect as separate developments of a PIE “proto-perfect”, the perfect having been formally influenced by inherited intensive presents.

A reasoned choice between these competing scenarios (and still other alternatives—see 3.3.4.6 below) is not yet possible. A pressing desideratum in regard to this controversy is a comprehensive and up-to-date analysis of verbal reduplication in Anatolian: how many types may be identified, what if anything can be said about their respective function, and is a given type inherited or innovated? Such an investigation may provide help in evaluating the conflicting hypotheses cited above.

3.3.4.4 Voice

Anatolian clearly inherited the PIE contrast of active versus mediopassive. It shares with Celtic, Italic, and Tocharian *-*r* as the marker of mediopassive primary endings in at least the third and probably the first person. As described by Yoshida (1988: 112-119 and passim), final *-*r* was regularly lost in Proto-Anatolian after unaccented vowel, but the third-person singular ending *-*ór* was retained and renewed by the -*i* of the active primary endings, from which -*ri* was then generalized as the marker of most primary mediopassive endings. The appearance of primary mediopassive endings without -*ri* in Old Hittite thus does not reflect an archaism (contra Watkins 1969: 78-79 & 175).

As shown by Hittite *kitta(ri)* and Palaic *kītar* versus CLuvian *ziyar(i)* and Lycian *sijēni* ‘lies’ (cf. Sanskrit *śáye/śéte*), Anatolian shows both *-*o(r)* and

**-to(r)* as the third-person singular mediopassive ending. Whether one views this as a chronological renewal **-o(r) > *-to(r)* after the active ending (e.g. Watkins 1969: 84-87, Pooth 2000) or as the trace of an original category of “stative” distinct from the mediopassive (e.g. Oettinger 1976 and 1993, Kümmel 1996), there is no evidence that Anatolian preserves a more archaic state of affairs.

3.3.4.5 Mood

There are no obvious reflexes of either the optative or subjunctive mood in Anatolian. Already Sommer (1947: 63) argued on the basis of its ablaut pattern that the optative marker **-yeh₁-/-ih₁-* could hardly be an innovation of non-Anatolian Indo-European. For a more elaborated presentation of this argument see Harðarson (1994: 30-32). Sommer (1947: 63-64) suggested that by sound changes the subjunctive would have largely fallen together with the indicative in Anatolian. This certainly would have been true for all thematic stems where the thematic vowel was unaccented, due to the shortening of original unaccented long vowels in Proto-Anatolian (Eichner 1973: 79 & 86¹⁵). In Hittite the lengthening of accented short **e* and **o* (Melchert 1994a: 133 & 156 with refs.) would have likewise led to merger of indicative and subjunctive in the very productive stems in **-yé/ó-* and **-ské/ó-*.

Unfortunately, two attractive analyses claiming to show definite relic forms of the PIE subjunctive cannot be upheld. Eichner (1975: 80) suggested that the Hittite imperative (i.e. voluntative) first singular ending *-allu* reflects the PIE

subjunctive first singular ending **-oh₂* plus an *l*-particle remade with the imperative marker *-u*. A prehistoric sequence **-oh₂lV* could explain the geminate *-ll-*, and the derivation is functionally well motivated. However, the PIE subjunctive shows fixed *e*-grade of the stem, that is, the *strong* stem in ablauting verbs, while the ending *-allu* clearly is added to the *weak* stem in Hittite, in both conjugations: *ašallu*, *appallu* and *akkallu*, *šekkallu*.³⁸

Jasanoff (1987: 94-106 and 2003: 182-183) has analyzed Hittite second singular imperative *paḥši* ‘protect!’, *eši* ‘occupy!’, and *ēšši* ‘do!’ as containing an ending *-si* matching forms in Indo-Iranian, Celtic, and Tocharian. He further derives such imperatives by haplology from sigmatic aorist subjunctive second singulars (following Szemerényi 1966): *paḥši* would represent a virtual **peh₂-s-(e-s)i*. The imperative ending in Hittite is descriptively *-i*, but the two oldest examples *paḥši* to *paḥš-* and *eši* to *eš-* ‘sit’ are formed to stems in final *-š-*, and a resegmentation leading to a new ending *-i* is quite plausible.³⁹

³⁸ The last example cited, with weak stem *šekk-* of the ablauting *ḫi*-verb *šakk-/šekk-*, precludes Eichner’s account of the *a*-vocalism of *ašallu* and *appallu* as due to analogy with that of other endings with *a*-vocalism.

³⁹ On the other hand, the hapax *e-iš-ši* ‘do!’ in the New Hittite copy KUB 1.16 iii 63 is of *no* probative value. KUB 1.16 contains many innovative forms and unreal creations of the copyist alongside genuine archaisms.

However, it is clear that the imperative ending *-i* in Hittite originates as the imperative second singular ending of *transitive* mediopassives: Middle Hittite *paḥši* to *paḥšari* ‘protects’ and transitive *eši* ‘occupy!’ to *ešari* ‘sits (down)’ versus intransitive *ēšḫut* ‘sit (down)!’. Such a restriction can hardly be explained by the derivation from haplogitized *active* subjunctive second singulars, and the non-Anatolian examples of *-si* cited by Jasanoff in fact have no such association with transitive mediopassives (see in addition to the references above also Jasanoff 1986). For a plausible inner-Hittite account of the imperatives in *-i* see Oettinger (2007), who includes for the first time a full presentation of the data.⁴⁰

In sum, it is probable that Anatolian inherited the optative and subjunctive from PIE and lost both categories, but positive evidence in the guise of relic forms remains lacking.

3.3.4.6 The *ḫi*-conjugation

Hittite and Luvian famously display two conjugation types. The indicative active singular of the first reflects the well-known PIE present-aorist active endings **-m(i)*, **-s(i)*, **-t(i)*, but the corresponding forms of the second show a

⁴⁰ Jasanoff’s explanation (2003: 183) of examples of the imperative ending *-i* other than those to stems in *-s-* as analogical to *iyanni* ‘walk!’ is unsatisfactory, since it does not account for instances like *maldi* ‘swear!’ or *iškalli* ‘tear!’.

strong affinity with the PIE perfect as well as with the mediopassive.⁴¹ The puzzle of the *hi*-conjugation has led to a wide variety of solutions. I cite here merely as representative Watkins (1969: 77-81), Eichner (1975: 85-99), Risch (1975), Cowgill (1975b and 1979), Kuryłowicz (1979). None of these analyses can plausibly account for the descriptive *a/e* ablaut of Hittite *hi*-verbs such as *karāp-/karēp-* ‘devour’, and I regard as established that PIE had a set of root presents with an **ó/é* ablaut, standing beside that with **é/zero* ablaut (the type of **h₁és-ti/h₁s-énti* ‘is/are’), entirely parallel to the two well established types of root noun (see Jasanoff 1979: 83-87 and with revisions 2003: 64-90).⁴² Anatolian preserved and extended this “**h₂e*-conjugation”, while non-Anatolian renewed it by various thematic types.

⁴¹ For the Luvian reflexes of the latter see Morpurgo Davies (1979). Putative traces of the *hi*-conjugation in Palaic and Lycian are questionable, but there is no reason to doubt that the basic formation is Proto-Anatolian.

⁴² One may assume *a priori* that there was once a functional contrast between the two ablaut types, in *both* the noun *and* the verb, but this is a matter of pre-PIE, as is the reason why the **ó/é* verbal type took a set of endings related to those of the perfect and mediopassive. These issues are not relevant to the position of Anatolian vis-à-vis the rest of the Indo-European languages.

Hittite and Luvian also continue a PIE present type in *-i-* that belonged to the **h₂e-*conjugation. It probably followed an **é/zero* ablaut pattern (Jasanoff 1979: 88-89, 2003: 91-107): **dhéh₁y-ei/dhh₁y-énti* > Hittite *dāi/tianzi* ‘put’. See, however, Kimball (1998) and Oettinger (2002b: xxiv-xxv and xxviii) for other proposals.⁴³ Outside Anatolian these presents were incorporated into the class of thematic **-ye/o-* verbs.

Still unclear is the source of Hittite *hi-*verbs with descriptive *ā/a* ablaut (e.g. *ari/arānzi* ‘arrive’). Jasanoff (2003: 84-86, 151-152) derives these from an altered **ó/é-*aorist corresponding to the **ó/é-*presents described above. For opposing views see the works of Hajnal (1999: 8-25) and Oettinger (2001: 80-83 and 2002b: xxiii-xxiv) already cited above in 3.3.4.3. Until the overall picture of verbal reduplication in Anatolian is clarified, one also cannot entirely exclude the possibility that the type of *ari/arānzi* reflects de-reduplicated (or unreduplicated?) perfects.

3.3.5 Verbal Stem Formation

Virtually every means of forming the “present” (imperfective) stem attested elsewhere in Indo-European is also used to derive verbal stems in Anatolian. As indicated in 3.3.4.3 above, it remains uncertain to what extent these stems marked

⁴³ The existence of an acrostatic “Narten” type of *i-*present with **é/é* ablaut (Jasanoff 2003: 107-110) depends entirely on non-Anatolian evidence.

aspect rather than Aktionsart in the prehistory of Anatolian. Only a few types call for special comment here. Anatolian does not currently help to solve the problems surrounding “*u*-presents” and “*s*-presents” in PIE. Anatolian evidence for the former is very limited, and the attested contrast in inflectional type between Hittite *tarḫu-zi/taruḫ-zi* (/tarh^wtsi/) ‘is strong; conquers’ and *lāḫu-i* ‘pours’ adds to our difficulties. See the recent tentative discussion by Jasanoff (2003: 141-143) and the important new demonstration by Kloekhorst (2008: 835-839) that the Anatolian verb ‘be strong, conquer’ reflects only a stem **terh₂u-*, never **terh₂-*. There is also no consensus on putative Anatolian reflexes of “*s*-presents”: compare Jasanoff (2003: 132-139) and Kloekhorst (forthcoming) with the still useful treatment of van den Hout (1988) and the relevant sections of Oettinger (1979). We cannot draw any firm conclusions from this material regarding the relative position of Anatolian vis-à-vis the rest of Indo-European.

The strong claim of Lehrman (1998) that Anatolian inherited no “simple” thematic presents (i.e., with the suffix **-e/o-* added directly to the root) appears to be contradicted by HLuvian /*tammari*/* (AEDIFICARE+*MI-ri+i*) ‘builds’ < **dém(h₂)eti* ~ Greek δέμω.⁴⁴ Nevertheless, the rarity of such presents in Anatolian

⁴⁴ The attested form with rhotacism reflects a **/tammadi/*, with regular “lenition” or voicing of the **t* of the ending (see Morpurgo Davies 1982/83: 261-262).

remains significant. For one account of this distribution in terms of a common innovation excluding Anatolian *and* Tocharian see Jasanoff (1998) and compare the remarks of Oettinger (2002b: xx).

There is no doubt that Anatolian attests reflexes of PIE root aorists: e.g. Hittite *tē-* ‘say’ = Lycian *ta-* ‘put’ ~ Sanskrit *(á)dhāt* ‘put’, Hittite *kuer-/kur-* and CLuvian *kuwar-/kur-* ‘cut’ ~ Sanskrit *(á)kar* ‘made’. On the other hand, few putative traces of a sigmatic aorist have been found. Such a source has been proposed for Hittite *g(a)nešš-* ‘recognize’ (e.g. Oettinger 1979: 199, following Rix), but for this verb there are two distinct competing analyses in terms of an *s-* present (Jasanoff 1988 and Kloekhorst forthcoming).⁴⁵ On other alleged traces of the sigmatic aorist in Hittite verbal *stems* see Neu (1974: 87-88¹⁷⁴). It is widely agreed that there is a historical connection between Hittite preterite third singulars like *naiš* ‘turned’ and the sigmatic aorist (cf. Sanskrit *ánāiṣam* ‘I led’)—see e.g. Eichner (1975: 83), Oettinger (1979: 405), Jasanoff (2003: 197)—but there is no agreement on the nature of that connection. The radically innovative account of the development of the sigmatic aorist presented by Jasanoff (2003, Chapter 7) has not won general acceptance (see e.g. the remarks of Kim 2005: 194 and

HLuvian orthography cannot express the geminate *-mm-* expected from either **démh₂-e/o-* or **dém-e/o-*.

⁴⁵ The latter analysis is now accepted by Oettinger (2006: 44).

Oettinger 2006: 43-44), but has not yet led to any fully elaborated alternatives.

What is significant for our present topic is that by Jasanoff's scenario the "classical" sigmatic aorist was an innovation of "inner Indo-European" that did not include Anatolian *or* Tocharian (see further section 4 below).

3.4 Syntax

I know of no assured examples of common non-Anatolian innovations in syntax. Two possible instances deserve brief mention. Patri (2007: 171-175) has argued that PIE may have had a prohibition against inanimate nouns taking the role of subject of transitive verbs. If this is the case, then the non-Anatolian languages innovated by removing this prohibition, while Anatolian developed "split ergativity".⁴⁶ Probert (2006) has shown that in addition to the well-established preposed, adjoined type, Old Hittite also has embedded relative clauses. She is suitably cautious about projecting the Old Hittite state of affairs back to PIE, allowing for the possibility that embedded relatives are a pre-Hittite innovation, but she does stress two points (2006: 78-80). First, later Hittite clearly eliminates embedded relative clauses, reanalyzing them as adjoined. This fact

⁴⁶ For this as the correct definition of the synchronic feature in attested Anatolian languages see Melchert (forthcoming a), against Patri and others. I stress, however, that the continuing controversy over the correct analysis of the synchronic facts of Anatolian does not affect the point being made here.

falsifies the common assumption that there is only a unidirectional development from adjoined to embedded relatives. Second, since Hittite has SOV, not SVO, word order, the typical scenario by which adjoined relative clauses are said to be reanalyzed as embedded cannot apply to Old Hittite. We must therefore consider the possibility that PIE, like Old Hittite, had embedded as well as adjoined relative clauses, and that non-Anatolian Indo-European eliminated the former.

Two claimed syntactic archaisms of Anatolian certainly do not exist. Neu (1979: 180-185), following Laroche, suggested that Hittite preserves traces of a PIE *casus indefinitus*, and the idea has been revived with modifications by Patri (2007: 81-95). However, the evidence cited by Patri himself (2007: 85-87) confirms that the case used by Hittite even in the “naming-construction” is the nominative, and all alleged examples of an indefinite or “zero” case reflect merely pseudo-Akkadographic spellings (see correctly Zeilfelder 2001: 141-151).

Old Hittite shows constructions such as *ammel āppan* ‘behind me’ (*ammel* = accented genitive pronoun ‘of me, mine’) and *katti-šši* ‘beside him’ (-šši = dative-locative singular of the enclitic third singular possessive adjective ‘his’). These have led some to argue that Hittite (*a fortiori* Anatolian) has preserved archaic PIE syntax in which local adverbs are still construed as the case forms of nouns which they reflect historically: see e.g. Starke (1977:131 and 149), Neu (1974:67-69), and Luraghi (1997:46). However, the syntax of *ammel āppan* and *katti-šši* is innovative in Hittite, having been modeled on true cases of secondary

development of nouns to adpositions such as LUGAL-*waš tapuša* ‘beside the king’ < *‘to the side of the king’ and *pēdi-šši* ‘in place of him’ < *‘in his place’. See for details Melchert (forthcoming b).

3.5 Semantics

The Hittite noun *neku-* means ‘twilight’, including morning as well as evening twilight (see Güterbock and Hoffner 1980-89: 434-436), and the verb *neku-* from which it is derived means ‘to become twilight’. In non-Anatolian Indo-European the meaning has shifted to ‘night’, probably including Tocharian, although the very limited attestation in the latter leaves some room for doubt (see Pinault 1990: 181-190 for discussion of the meaning and contexts of all occurrences). García-Ramón (forthcoming) makes a strong case for analyzing the Anatolian verb ‘run’ attested in Hittite *ḫuwai-/ḫū(i)ya-*, CLuvian *ḫū(i)ya-* and HLuvian */hw(i)ya-/* and various nominal derivatives as the reflex of a PIE root **h₂eu_h₁-* that shifts from ‘run’ to ‘help, assist’ in non-Anatolian Indo-European (on the latter reflexes see already García-Ramón 1996). Further research is likely to reveal further instances of such semantic shifts not shared by Anatolian.⁴⁷

⁴⁷ The case of the verb ‘to drink’ is more complicated than the two just presented. Here there was likely an original suppletion of imperfective **h₁e(h₂)g^wh-* and perfective **pe_h₃(i)-*. The former is preserved as a verb ‘drink’ only in Anatolian and Tocharian, while the latter was lexicalized in Hittite and Luvian *paš(š)-* as

3.6 Summary

If we review the discussion in the preceding sections, we find that the number of putative common non-Anatolian innovations is decidedly modest, even if we generously include those that may be characterized as merely probable or possible. Those innovations involving the creation or loss of functional categories are particularly few: among the former belongs almost certainly the feminine gender, arguably true participles with fixed diathesis built on tense-aspectual stems, and *perhaps* the perfect. Among the latter there is likely the loss of the collective plural as a living category.

The rest of the innovations cited consist merely in changes in the *formal expression* of categories (see the similar remarks of Jasanoff 2003: 215 on those features belonging to the verb): renewal of the dative plural ending **-os*, loss of the “*h₂e*-conjugation”, marked expansion of the “simple” thematic verbal stems, and more debatably the development of the fully sigmatized aorist and the loss of embedded relative clauses. To these we may cautiously add a few changes in the productivity of various derivational suffixes and in the meaning of some lexemes.

‘swallow’ and replaced in Tocharian (see Kim 2000: 164-165). In this instance the common “inner Indo-European” innovation was to eliminate **h₁e(h₂)g^wh-* as a verb and to replace it with reduplicated **pí-ph₃-e-* (see in detail García-Ramón 2002: 124-126).

Future research may well reveal further common non-Anatolian innovations not identified above, but it may also eliminate some of the less certain candidates cited. Our findings seem difficult to reconcile with the notion that Anatolian reflects a proto-language (however we choose to label it) profoundly different from the source of the other Indo-European languages, as represented by Sturtevant (1933ab), Lehrman (1998), or Adrados (2007). The facts of Anatolian (along with those of Tocharian) do appear to require some revision to the previous model of Proto-Indo-European reconstructed without knowledge of these subgroups, but not nearly as radical as has sometimes been suggested. The question of how best to conceptualize the place of Anatolian with respect to the other subgroups of Indo-European will be the subject of the next and final section.

4. Issues of Modeling: divergence vs. diffusion

Discovery of Anatolian (and Tocharian) not only led to a reassessment of the features to be reconstructed for Proto-Indo-European, but also renewed a debate dating to the nineteenth century regarding how best to model the historical relationships of the Indo-European languages. A full treatment of this very complex methodological issue is not remotely possible here, and the following remarks focus only on its relevance for understanding the various approaches to treating the position of Anatolian within Indo-European.

The preceding discussion has been framed in terms of divergence—common innovations of non-Anatolian Indo-European. The choice between the “Schwund-

Hypothese” and “Indo-Hittite” has likewise been posed in terms of the family-tree (Stammbaum) model: Hittite is either merely one among the subgroups descended from PIE or is a collateral descendant with PIE of a more archaic proto-language. See the formulations of Eichner (1975: 72) and Lehrman (1998: 3-7) and for a visual representation contrast the diagram of e.g. Baldi (1983: rear flyleaf) among many others with that of Sturtevant (1933a: 30).

Meid (1975: 210-211) presents two different models for the filiation of the Indo-European languages. The first portrays the attested languages (or subgroups) as reflecting a *synchronically differentiated* PIE that included archaisms, productive norms, and incipient innovations. The second views the descendant languages as being derived from *successive* reconstructed stages of the proto-language. If carried through, the first would be a truly radical departure from previous conceptions. However, in the rest of his 1975 article it is the second model that Meid himself follows, and for good reason. The very nature of the available data and of the comparative method makes it virtually impossible to realize the first model in any meaningful way (see Meid’s own concession 1975: 212, top).

Meid’s own elaboration of the second model and the formulations of Neu (1976) and (1985) have not been so much rejected as rather co-opted by revival (in modern guise) of August Schleicher’s original conception of the Stammbaum

(1871: 9).⁴⁸ Schleicher saw PIE as evolving by a series of common innovations that successively separated one subgroup after another from the remaining linguistic unity. There was in effect not only a PIE stage, but PIE minus 1, PIE minus 2, and so forth, although the latter stages do not have fixed labels. The second model of Meid (1975: 211) is in practical terms merely an abbreviated and schematized variant of the same.

Explicit modern exemplars of this form of a divergence model may be found in the diagrams of Hamp (1984: 153), Gamkrelidze and Ivanov (1995: 363 with important preceding discussion), Ringe et al. (1998: 408 and 2002: 90), and Watkins (2001: 57) among others.⁴⁹ Most scholars do not commit themselves regarding the entire Indo-European family, but there is a broad consensus that “PIE minus 1” is that stage defined by a series of common innovations not shared

⁴⁸ I am speaking here of the overall implications of their model. Most of their specific analyses regarding archaisms vs. innovations have failed to gain widespread approval.

⁴⁹ The published diagram of Hamp that I have cited describes the dialectal development of a single lexical feature, but his (unfortunately never published) handout at the IX. Fachtagung of the Indogermanische Gesellschaft held in Zürich in 1992 presented a stemma differing in only minor details based on *multiple* features.

by Anatolian. Also popular is the idea that Tocharian was the next subgroup to be isolated (e.g. Schmidt 1992: 114, Jasanoff 1994: 167 and 2003 *passim*, Winter 1998: 355, Ringe et al. 1998 and 2002, and Watkins 2001: 57). Some archaic features claimed to be shared by Anatolian and Tocharian have been mentioned in section 3 above. However, see for very different viewpoints Hamp (1984: 115), Meid (1988: 11) and Gamkrelidze and Ivanov (1995: 347) among others. One should also not forget the “marginal” versus “central” dialectal model of Meillet (1931), which is based a similar relative chronology of innovations.

Meid (1975: 208-209) also envisions a spatial component to his model and allows for the possibility of dialectal differentiation within stages of the proto-language, but admits the great difficulty in establishing any such features, given the possibility of subsequent contact and interference between already differentiated subgroups. Since the articulated Stammbaum or cladistic model also makes allowance for such contact and interference (see again Ringe et al. 1998: 408 and also Hamp, as cited in note 49), I contend that the practical conceptual difference between the two models is once again minimal. Both allow for *diffusion* of later innovations across speech communities that have *diverged* through earlier innovations.

The real issue is deciding just when and where the linguistic facts seem to demand assumption of such diffusion. Such scenarios have been proposed to explain certain features of the Indo-European languages of the Balkans, of

Germanic (Ringe et al. 1998: 407-408 and 2002: 110-111), and of other subgroups (e.g. Meid 1975: 209). In the case of Anatolian the possibility of such diffusion has generally been limited to possible influence of Anatolian on Greek (see e.g. Puhvel 1991: 3-20 and Watkins: 2001: 56-59). However, it is far from clear that all features shared by Anatolian with subgroups such as Italic, Celtic, Germanic, and Tocharian are archaisms (see e.g. Puhvel 1994). Further investigation may or may not confirm shared innovations between Anatolian and other subgroups. Future study of the position of Anatolian should in any case pay as much attention to what it shares with other Indo-European languages (as a group and severally) as to what it does not.

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