

REKONSTRUKTION UND RELATIVE CHRONOLOGIE

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Relative Chronology and Anatolian: The Vowel System*

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The existence of an Anatolian family of Indo-European languages has long been recognized. Kammhuber, *HbOr* (1969) 119–357 and 428–546, summarizes some of the features which distinguish this set of languages from other sub-families of Indo-European. Her discussion focuses on Hittite, Palaic, Cuneiform and Hieroglyphic Luvian, but there has been general agreement for some time that we should also add Lycian and Lydian to the Indo-European languages of Anatolia: see for Lycian especially Meriggi, *Fs Hirt* 2 (1936) 257–282, and Laroche, *BSL* 53 (1958) 157–195, 55 (1960) 155–185, 58 (1963) 58–79 and 62 (1967) 44–66; for Lydian see Meriggi, *Fs Hirt* 2. 283–290.

Despite the long recognition of an Anatolian family, there has been little work to date on reconstructing the features of Common Anatolian, whether in phonology, nominal or verbal morphology¹. To the extent that they have discussed at all, scholars have generally treated Common Anatolian as a sort of backward extension of Hittite, abstracting from the features of Old Hittite a few obvious Hittite innovations (such as *t > ts before *i/*y) and calling what is left Common Anatolian. The main reason for this behaviour is evident: for many years our knowledge of the 'minor' Indo-European languages of Anatolia was so inferior that these languages seemed of little use for historical reconstruction.

Recent developments have drastically changed this situation. The revised readings of several crucial Hieroglyphic Luvian signs established by Hawkins, Morpurgo-Davies and Neumann, *HHL* (1974), based on suggestions of earlier scholars, have revolutionized our understanding of HLUvian. An authoritative new edition by Hawkins of all the first millennium texts in this language will also surely

* Bibliographical abbreviations are those of *The Hittite Dictionary of the University of Chicago (CHD)*, edited by Hans G. Güterbock and Harry A. Hoffner, Chicago: 1980ff. Older Lycian texts are cited after E. Kalinka, *Titulí Lyciae (TL)*, Vienna: 1901. They are also available in J. Friedrich, *Kleinasiatische Sprachdenkmäler*, Berlin: 1932. More recent Lycian texts are cited with the prefix N after G. Neumann, *Neufunde lykischer Inschriften seit 1901*, Vienna: 1979. Note that by this numbering the Trilingual of Létoon is N 320.

¹ One exception to this trend has been the work of Heiner Eichner, who has explicitly treated many problems of Common Anatolian. See for example his articles in *MSS* 31 (1973) 53–107, *Sprache* 32 (1986) 7–21, *KZ* 99 (1986) 203–219. However, since he has not yet presented his analyses in a systematic fashion, they have not had the overall impact they deserve.

led to many new results.² The publication of the 'Létóon Trilingual' has likewise entirely renewed the study of Lycian: see in the first instance Laroche, *Fouilles de Xanthos* 6 (1979) 49–127. We are indebted to F. Starke, *StBoT* 30 (1986), for a splendid new edition of all the Cuneiform Luvian texts. Developments in Palaic and Lydian have been less dramatic, but considerable progress has also been made in the elucidation of these languages.³ I am convinced that our understanding of the 'minor' IE languages has now progressed to the point where we are no longer justified in treating Common Anatolian merely as an adjunct of Hittite. The time has come for serious reconstruction of Common Anatolian based on the contributions of all the assured languages of the family.⁴

The relevance of relative chronology to the reconstruction of Common Anatolian is crucial and twofold. First of all, data from the other languages can be used as a control on relative chronologies posited for Hittite. So long as one is restricted to Hittite as the end-point and PIE as the starting point, relative chronologies of changes in the development of Hittite are in principle unverifiable: one assumes the relative chronology required by the analysis one adopts. If someone proposes an alternative analysis requiring a different chronology, one can argue the overall merits of the competing analyses, but one has no basis for choosing between them in regard to the relative chronologies.

However, facts from the other Anatolian languages can often verify or falsify a relative chronology and the dependent analysis made for Hittite. For example, there is in the Hittite 'hi-conjugation' a subtype which shows a consistent morpho-phonemic alternation: the present third singular (and other 'strong' forms) shows an apparent long vowel followed by a single stem-final consonant, while the present third plural has a short vowel and double stem-final consonant. See for example pres. 3rd sg. *wāki* 'he bites' versus pres. 3rd pl. *wakkanzi* 'they bite'. Oettinger, *Stammbildung* (1979) 444–449, explains the origin of this type according to two prehistoric sound changes in Hittite. The single consonant in the third singular is due to 'lenition' after an accented long vowel. This is the rule of Eichner, *MSS* 31 (1973) 79–83. Oettinger sees the long vowel here as produced by another change by which a short accented vowel was lengthened in an open syllable before another short vowel in disyllabic words: $*\check{V}C_1\check{V} > \check{V}C_1\bar{V}$. Note that this account requires that the lengthening rule precede the lenition rule. Unfortunately, evidence from Luvian, Lycian and Palaic shows that the lenition rule is Common

² J. D. Hawkins, *The Hieroglyphic Luvian Inscriptions of the Iron Age*, de Gruyter, Berlin: 1992.

³ The standard handbook for Palaic is Carruba, *StBoT* 10 (1970). See also the recent articles by Wallace, *Sprache* 29 (1983) 159–173, and Melchert, *KZ* (1984) 22–43. For all aspects of Lycian see the *Lydisches Wörterbuch* of R. Gusmani with its *Ergänzungshefte*. One should, of course, also consult the articles on Lycian by Neumann and on Lydian by Heubeck in *HbOr* (1969).

⁴ It is likely that we should add more languages to the Indo-European Anatolian group. If I do not speak in what follows about Carian, Sidetic, Pisidian, etc., I do not mean thereby to deny that these languages are Indo-European. I merely consider the linguistic affiliation of these languages uncertain at present.

Anatolian. I cite here Lyc. *tadi* 'puts' < **dheh₂ti*, HLuv. /iri/ 'goes' < **/idi/* < *h₁eiti*, Pal. *kitar* 'lies' < **ketiri*. See Eichner, loc. cit., and Morpurgo-Davies, *KZ* 96 (1982) 245–270, for further evidence. On the other hand, the vowel lengthening rule in open syllables must be post-Common Anatolian, as shown by the contrast between Hitt. *péran* and CLuv. *paran* 'in front' from **pérom*. The different treatment in the Luvian word reflects the effects of 'Çop's Law', for which see *IF* 75 (1970) 85–96. Evidence from the other Anatolian languages thus shows that the relative chronology assumed by Oettinger for Hittite is in this instance false.⁵ We must seek another explanation for the *wāki* : *wakkanzi* type.

One could easily find additional examples where the other Anatolian languages either confirm or contradict relative chronologies posited for Hittite. I will not rehearse these here, but instead will turn to the other way in which relative chronology is relevant to the reconstruction of Common Anatolian. The fragmentary attestation of the minor Anatolian languages often makes it impossible or difficult to determine their historical development in the usual inductive fashion, relying solely on the texts themselves. There simply may not be enough sure examples of a given phonological environment or morphological type from which to draw firm conclusions. In such instances, hypotheses based on Hittite relative chronologies may serve as a guide to research in the other languages and lead to quite unexpected results.⁶

I take as an example the Common Anatolian vowel system. Common Anatolian is generally assumed to have reduced the PIE five-vowel system to four vowels **a*, **e*, **i* and **u*, having merged **o* with **a* (under certain conditions perhaps with **u*). See explicitly Kammenhuber, *HbOr* (1969) 181, or Pedersen, *Hitt* (1938) 164–165. Some scholars do assume a long **ō* for Common Anatolian, but they make it clear that this **ō* is a secondary development from PIE diphthongs in **Vu*: e.g. Eichner, *Or* 52 (1983) 56. The reason for assuming only **a*, **e*, **i* and **u* for Common Anatolian is obvious: Hittite has only *a*, *e*, *i* and *u* (\pm 2ary 'o' < **Vu*); Luvian only *a*, *i*, *u*; Palaic *a*, *i*, *o* and *u*, but one of the few points of Lydian history does have synchronically *a*, *e*, *i*, *o* and *u*, but one of the few points of Lydian historical phonology on which there is general agreement is that the *o* in all clear cases is secondary: see Gusmani, *Lyd. Wb.* 30, *Brg.* 1.23–24. There has thus been no reason to doubt the assumption of basic **a*, **e*, **i*, **u* for Common Anatolian.

However in Melchert, *Phon.* (1984) 30, 51 & 77, I pointed out that acceptance of several well-established etymologies requires a relative chronology which in turn implies the distinction of PIE **a* and **o* in pre-Hittite, hence also in Common Anatolian. The relevant examples are the following (I refer the reader to my earlier discussion for authorship of the various etymologies): Hitt. *t₂du-wa-a-an*

⁵ Eichner, *KZ* 99 (1986) 207, n 10–11, also points out the impossibility of the chronology assumed here by Oettinger, but he does not make the argumentation explicit.

⁶ I am keenly aware of the risks of this aprioristic procedure. When one begins with a pre-conceived hypothesis, one must be constantly on guard against the tendency to see only those examples which fit the hypothesis and to ignore those cases which are problematic for it. Nevertheless, I believe that this method, used with caution, can lead to valid and important results which could not be achieved by other means.

/dwān/ 'far' appears to continue PIE * [dwām] * /dweh₂m/, while Hitt. *dān* 'twice' has most plausibly been explained as a frozen nt. nom.-acc. singular adjective **dwoyom*. The contrast between /dwān/ and /dān/ suggests a loss of **w* between a dental stop and **o*, but preservation before **a*. This distinction also makes sense, of course, in phonetic terms. The rounded bilabial glide **w* is lost by dissimilation before the rounded vowel **o* but not before unrounded **a*. The further contrast between Hitt. *idālu-* and CLuv. *adduwāli-*, 'evil' from an extension of **h₁eduwōl-* shows that the loss of **w* in this limited environment is specifically pre-Hittite.⁷ The distinction of **a* and **o* must therefore be pre-Hittite, and also Common Anatolian. I personally found this result not only surprising, but dismaying. It seemed implausible that such a fundamental distinction had left no trace in all of Anatolian except in this small set of interrelated forms. I have therefore subsequently sought further evidence of the distinction of PIE **a* and **o* in Anatolian. I believe that I have found such evidence in Lycian, as I now hope to demonstrate.

I must begin with a discussion of the synchronic vowel system of Lycian.⁸ Lycian shows a system of basically four vowels distinguished by the features of height and backness: high front /i/, low front /e/, high back /u/, and low back /a/. There are also two phonemically distinct nasalized variants of the low vowels /ē/ and /ā/, but these vowels behave just like /e/ and /a/ for our present purposes. There is one very important synchronic phonological rule of Lycian which has grave consequences for the historical phonology: regressive vowel assimilation. This rule was earlier misnamed 'vowel harmony', but already Merrigi, *Declinazione del licio I* (1929) 441, correctly termed the change 'umlaut'. See also the description by Neumann, *Lgk.* (1969) 376, with references, and by Laroche, *Fouilles de Xanthos* 6 (1979) 80–81, although even the latter's formulation does not go far enough. I believe that at the phonological level the rule may be stated in the following very strong form:

$$\begin{array}{c} [+ \text{voc}] \\ [- \text{high}] \end{array} \rightarrow \begin{array}{c} [\alpha \text{ back}] \\ / \\ \text{---} \end{array} \begin{array}{c} [+ \text{voc}] \\ [- \text{back}] \end{array}$$

According to this rule, which operates within the phonological word (including clitics), any low vowel assimilates in terms of backness to the vowel of the following syllable. Thus beside regular *nite* 'into' we find assimilated *nita ta* 'establish';

⁷ In his original formulation, *Gs Kromayer* (1982) 261, Watkins begins with a noun **h₁eduwōl* 'evil', which he sees directly continued in CLuvian *adduwāli* 'evil' (noun). The Hittite and Luvian adjectives *idālu-* and *adduwāli-* would be secondary from the noun. The appearance of a short adjectival stem in CLuv. *adduwānza* (dat.-loc. plural in its only clear occurrence) and in HLuv. MALUS₁-*wa/i-za* */adduwan-za/, nt. nom.-acc. singular, has brought this morphological analysis into question. One could easily suppose that *adduwāli* is an inner-Anatolian creation from the short adjective stem. However, the fact that the nt. nom.-acc. singular is /adduwan-za/, not */addu-sa/, and the apparent parallelism of CLuv. *šē(b)wa-* and *er(b)wāli-* suggest that the shorter adjectival stem is *adduwa-* from a **wo*-stem **h₁edwo-*, not *addu-* from a *u*-stem **h₁edw-*. Thus, even if *adduwāli* is to be segmented *adduwa-li*, we are still dealing with an original sequence **-dwo-*.

⁸ While the discussion below is confined to Lycian proper (Lycian A), I know of no reason to doubt that this system, including the 'umlaut' rule, is shared by Milyan (Lycian B).

beside *ēnu* 'I, me' also assimilated *amu*; conversely beside *kumaza-* 'priest' stands *kumēziye-* 'sacred'; beside *mar-* 'command', *mere* 'laws' (dat. pl.). The rule is iterative, as shown by the personal name *Ermmenēni* from **Armanani-* (i.e. 'brother of the moon'), where the final *-i* umlauted the preceding *a* to *e*, and this *e* umlauted the preceding *a*, and so forth. There are indeed a very large number of apparent exceptions to the rule stated in this form, but to my knowledge all of these cases can be attributed to paradigm leveling. Thus the *a* of dat. singular *ladi* 'wife' remains unchanged due to the pressure of nom. sg. *lada*, acc. sg. *ladā/ladu*, nom. pl. *ladāi*, acc. pl. *ladas*, where the first *a* is regularly maintained before the back vowels of the final syllable.

As indicated above, this widespread umlaut rule creates serious problems for determining the original distribution of *a* and *e* vocalism in Lycian. We are for the most part limited to final syllables, which escape the effects of the rule (except in proclitics). We can use examples from interior syllables only when their vocalism disagrees in terms of backness with that of the following syllable. That is, if we find low back *a* before a front vowel, or low front *e* before a back vowel, we can tentatively take the respective *a* and *e* vocalism as original, since it cannot be attributed to the umlaut rule.⁹ On the other hand, an *a* before a back vowel or *e* before a front vowel is not probative, because the attested vocalism could in this case be due to umlaut.

When we turn to the historical development of the Lycian vowel system, we find that the predominant view derives the Lycian four-vowel system from a proto-Luvian three-vowel system **a*, **i*, **u*: see explicitly Neumann, *Weiterleben* 48 and Oettinger, *KZ* 92 (1978) 81. This account is based at least in part on the well-established conviction that Luvian and Lycian form a clearly defined dialect group within Anatolian. However, it is interesting to note that there has been some dissent from this view: see notably Pedersen, *LH* (1945) 33, Mittelberger, *Sprache* 10 (1964) 59, and Carruba, *Sprache* 24 (1978) 167. The difficulty with this derivation is this: if Lycian *a*, *e*, *i*, *u* reflects Proto-Luvian **a*, **i*, **u*, then Luvian **a* must have split into Lycian *a* and *e*. If one accepts the fundamental principle of historical linguistics that there are no unconditioned splits, then this split of **a* into *a* and *e* must be conditioned. No satisfactory conditioning for such a split has been proposed.

When I examined the list of Lycian = Luvian = Hittite correspondences presented by Neumann, *Lgk.* (1969) 375 ff, I also could see no pattern for a conditioning of Lycian *e* versus *a*. However I was struck by the fact that all equations of Lycian *e* with Hittite and Luvian *a* seemed to reflect PIE **o*, while cases of Lycian

⁹ I say 'tentatively' because it is conceivable that the umlauted vowel could be analogically spread into the non-umlauting environment: i.e., an original **mer*, 'command' would become by umlaut *mar-* in *mar-za* 'I commanded', whence analogically *mar-i* 'commands' for regular **mer-i*. I find this kind of analogy in principle less likely than that by which original vocalism is maintained against the umlaut rule. It is also remarkable that there seem to be no attractive etymologies which would require such analogical spreading of the umlauted vowel. Nevertheless, I personally view the evidence from final syllables as the crucial proof for the analysis presented here.

a equating with Hittite and Luvian *a* either continued PIE **a* or were of obscure origin. The more I pursued the matter, the more striking this complementary pattern became.

As examples of Lycian *e* = Hittite and Luvian *a* < PIE **o* I may cite the following. (1) The nt. nom.-acc. singular of **o*- and **yo*-stems is consistently *-ē*: *pdāzē* 'place' < **pedom* equal to Hitt. *pēdan* (among others Carruba, *Sprache* 24.175)¹⁰; *kumezijē* *θθē* 'sacred offering' (or similar), cf. Hluv. *tasā^a-za* and Lyd. *tasēv* (Eichner, *Or* 52.59 ff.); *isbazijē* (part of the tomb) (Pedersen, *LH* 34); *ehbijē* 'his (property)' in N 320, 12; *hrzēzē* 'upper' in TL 84.2 and *przēzē* 'front-' in TL 44a, 28¹¹, and probably *kēmēzē* 'how much?' in N 320, 16 and 23. (2) The *i*-stem gen. plural *-ē* continues **-ōm*, also seen in Hitt. *-an* (cf. Pedersen, *LH* 37).¹² (3) Despite its partially divergent syntax, Lyc. *me* certainly equals Hitt. *-ma*, which is also the second element of Hitt. *imma* = Lat. *immō* 'indeed' < PIE **id^h-mō* (Melchert, *KZ* 98.184 ff). (4) Lyc. *ñite* 'into' = Hitt. *anda* = Lat. *endo* < PIE **endo*. (5) Lyd. *epñ* 'behind' = Hitt. *āppan* < **opV*- (for the *o*-vocalism see Dunkel, *KZ* 96.83 ff). (6) Lyc. *ebe* 'this' = Hitt. and Luv. *apā*- 'that' from a virtual **obho*-. (7) Lyc. enclitic *-ē* 'him' = Hitt. and Luv. *-an* < **-om*. (8) Lyc. *ēke* 'when' = CLuv. *āhha* < **en^h-ho*.¹³ (9) Lyc. pret. 3rd sg. *-te/-tē* = Luv. *-tta* < **-to* and Lyc. pret. 3rd pl. *-ñite/-ñitē* = Luv. and Pal. *-anta* < **-onto*.¹⁴ Lyc. infinitive *-āēne* = Hitt. *-anna* < **-ātnō*.¹⁵

¹⁰ Forms such as *pdāzēh* (TL 106, 1) and *pdāzēne* (N 320, 3) make it possible that this word is synchronically an *n*-stem, but this does not affect the derivation. For confusions among neuter *o*- and *n*-stems, cf. Hitt. *ewz*- 'barly' (gen. sg. once *ewanāš*) or *e(y)a*- 'yew-tree', both *e(y)a*- and *e(y)an*-.
¹¹ The adjectives *hrzai*- and *przai*- are in origin **-ijo*-stems like Hitt. *šarazzi(ya)*- etc. The enclitic *-ē* < **-om* in the neuter nom.-acc. singular is thus historically justified. As in Hittite and Luvian, these adjectives for the most part entered the inflection of the *i*-stems.
¹² Pedersen derives *-ē* from a contraction of **-i-ā* and likewise the dat. plural of *i*-stems for **-i-a*. However, there is no evidence for such contractions in Lycian. It is likely that Lycian, like Luvian and Hittite, lost intervocalic **y*. Thus in the oblique forms of ablating *i*-stem adjectives there would have developed forms in **-ōm* and **-ōs* from the original genitive and dative plural forms **-oyōm* and **-oyos*: cf. OH *palhan* gen. pl. to *palh^h-broad* and *šallaš* dat. pl. to *šalli*- 'great' (Melchert, *Phon.* 44 f). In Hittite these forms were replaced by new analogical forms with the *-y*- restored: NH *šallayaš*. In Lycian, however, the contracted forms *-ē* and *-e* could have been generalized to the *i*-stem nouns. Hence the synchronic confusion of *i*-stem and *o*-stem (now *e*-stem) inflection in Lycian. In any case, the likely equation of Lyc. *ebēzē* (secondarily also *ebēzē*) 'their(s)' with Hitt. *apanzan* < **obhe/oi-n-s-ōm* would show directly gen. pl. *-ē* < **-ōm*.

¹³ Cf. also Mil. *-ke* 'also, and' = Luv. and Pal. *-ha*, and Lyc. *tike* 'some/anyone' = Luv. *kwišha*. For the development of **h₂* to Lyc. *k* after consonant see Laroche, *Fouilles de Xanthos* 6.84. Contra Laroche, however, the equation of Lyc. *ēke* = Luv. *āhha* does not show the sign *ē* standing for a non-nasal vowel: the loss of the *n* before *h* in Luvian is parallel to that in Hittite *māhhan* 'when' from earlier *mānhanda*. The *o*-vocalism of **-h₂* had already been proposed for independent reasons by Dunkel, *KZ* 96.198 f. See also note 18 below.

¹⁴ The possibility that these preterite endings continue PIE medial endings has long been suspected by a number of scholars: see already Pedersen, *LH* 33, and Watkins, *Idg. Gram.* III/1.175. The Lycian vocalism would now confirm this derivation. It is true, of course, that Lycian *-e* does not by itself exclude the alternative explanation of a prop vowel added to the inherited active endings in **-t* and **-e/ont*: see Oettinger, *Stambbil-*

One also finds expected Lycian *e* for **o* in *pede*- 'foot' < **pedo*- (abl.-inst. *pededāš*), *esbe* 'horse' < **ekwo*- (abl.-inst. *esbedāš*), *epri*- 'rear-' < **opert*- (= CLuv. **appari*-), and *epriye*- 'sell' < **h₂ep*- [hop-] (= Hitt. *happriya*-) (Kimball, *Fs Hoenigswald* (1987) 185 ff.). However, since the *e* appears before a following front vowel in all these cases, the possible effect of the umlaut rule makes these examples less than probative.

In clear and consistent contrast to the above cases of Lycian *e* < PIE **o*, we find Lycian *a* representing PIE **a* or **ā*. (1) The pret. act. 1st singular ending *-χa/χā/gā* clearly reflects PIE **h₂e* (cf. Luv. and Pal. *-hha*). This example is of some importance, since it shows Lyc. *a* from short PIE **a*, while most other examples are from long **ā* (**eh₂*). As in the case of **o*, then, the length of the vowel is irrelevant in the Lycian development. (2) The neuter or collective nom.-acc. plural ending is Lyc. *-a* < **-eh₂*: *kumezija* 'sacred precinct' (contrast *kumezijē* above),

đung 561, n 6. However, there is independent evidence against the latter account. Common Anatolian, like Latin, generalized the voiced or lenited form of stops in word-final position: note the nt. nom.-acc. sg. enclitic pronoun Hitt. *-at* (with single stop before following vowel), Luv. *-ata*, Lyd. *-ad*; see also Hitt. *pañi-aš* 'went he' with single stop from pret. act. 3rd sg. **-t*. Therefore if Luvian and Lycian had added a prop vowel to the inherited active ending, it would also appear consistently as single *-t* in Luvian and as *-d* in Lycian. Note that this is the result in the neuter enclitic pronoun as given above: Luv. *-ata* with clearly secondary prop vowel. The regular verbal ending, however, shows *-t*- in Luvian and *-t*- in Lycian. The combined evidence of the consonantism and the Lycian vocalism thus argues decisively for **-to* and **-ontō*.

¹⁵ The Lycian infinitive formant has generally been equated with Luvian *-ma* via **-wena*: see e.g. Laroche, *BSL* 55.172–173. However, as Laroche himself cites, the 'gentilic' suffix which appears as *-wanni*- in Luvian develops to *-ñni*- in Lycian, with syncope of the vowel of the suffix and the loss of the *w* before the nasal (in Lycian): Lyc. *Pilēñni* 'man from Pinars', Mil. *Treleññe* 'man from Tralleis'. The reduced cluster is clearly reflected by the geminate *n*, written here as elsewhere as *-ñn*-. One would thus expect from **-wena* likewise consistent *-Vñne* in the infinitive, but one finds in all clear cases only *-Vne*. I therefore derive Lycian *-āēne* from **-ātmō*, matching exactly Hitt. *-anna*. This is confirmed by *šijani* 'to lie' (TL 128, 2), which shows that the *a* vocalism is original in the first syllable of the suffix, while *-ēneš* shows the umlaut rule. The interpretation of *šijani/šijēni* as an infinitive solves the syntactic difficulties of this word, which occurs with both first and third person subjects. In such sentences *šijēni* is predicative: 'Here so-and-so (is) to lie' = 'shall lie'. For the ending *-i* instead of usual *e* compare *kumezēni* (TL 62, 15) beside usual *kumezēne* 'to sacrifice, worship'. The ending in *-i* probably continues a locative form, while the ending *-e* = Hitt. *-a* in *-āēne* = *-anna* reflects **-ō*, confirming Laroche's derivation, *RHA* 28 (1970) 46 ff., of the 'directive' case in Hittite from the ending seen in Grk. *kátō* 'downward', *ánō* 'upward', Lat. *quō* 'whither?'. The single *-n*- of the Lycian versus the geminate in Hittite is normal, since Lycian does not appear to reflect old Common Anatolian geminates, only newly created ones: cf. Lyc. *ēni* 'mother' vs. Hitt. *anna*-, Luv. *ānni*-. The assimilation of **-in*- to *-nn*- has previously been considered a Palaic-Hittite isogloss, not shared by the Luvian group, but to my knowledge all cases of preserved *-in*- in Luvian are in paradigms where the cluster could have been restored. There is thus no valid objection to assuming that the assimilation is Common Anatolian.

[On *šijēni/šijani* see now Melchert, 'The Middle Voice in Lycian', to appear in *Historische Sprachforschung*.]

kumaha 'sacrifice', *mara* 'laws', *marazija* 'court', *ebeija* 'these', *a/erawazija* 'memorial' (or similar) plus *brutilla* and *pruiliya* of uncertain meaning and probably *kñma* 'how many?'. If they are functioning as adverbs, *ara* 'properly' and *arawa* 'free(ly)' would also continue neuter plurals, but see below for another possibility. (3) Denominative verbs in *-a* represent **-eh₂* (= Hitt. *-ah₂*): *prñnawa* 'build', *xñtawa* 'rule', *xasathrapaza* 'be the satrap', *brñmazaza* 'be the h-'. Note that this class cannot be equated with the extended type in **-āye/o-* (Hitt. *-āizzi*), because this group is continued in Lycian by the type of *tubidi*, *tubeiti* = Luv. *tupiti*, *tupaini* 'strike'.

(4) In contrast to the neuter collectives in *-a* seen above, Lycian also shows a class of animate nouns in *-a*. Several of these have feminine reference: *lada* 'wife', *xñna* 'grandmother', *Maliya* (goddess equated with Athena). Others refer to concrete objects: *xupa* 'tomb', *ñitaka* 'chamber', *prñnawa* '(grave-)house', **xaha-altar*. Note that the animate *a*-stem noun *prñnawa* is the base of the denominative verb *prñnawa*: cf. mutatis mutandis Lat. *fuga*, *fugāre*, or Grk. *tīmē*, *tīmáō*. Although its gender is not assured, because it occurs only in the abl.-inst. *xahadā*, there is no reason to doubt that **xaha*- 'altar' is animate, since it forms a word equation with Hitt. *haššad* 'hearth, altar' (note the secondarily added *-s* marking animacy in Hittite!) and Lat. *ara*. Taking all these facts into account, we can hardly avoid concluding with Pedersen LH 33, that this class of animate nouns in *-a* directly preserves PIE feminines(!) in **-eh₂*.¹⁶

(5) The first vowel of *kbatra* 'daughter' must reflect the **h₂* of PIE **dhugh₂tr*, either directly or by coloring of an anaptyctic vowel. The *a* coloring of the first vowel cannot be attributed to the umlauting effect of the second, since the first *a* is also seen in the dat. sg. *kbatri*, where an original *e* before *i* would have remained. The inflection of *kbatra* as an *a*-stem may be analogical to the feminine nouns discussed above, but see also below. (6) The verb *stta* is now shown by the Trilingual

¹⁶ There is even limited evidence for a development of special feminine forms in the adjective (type of Latin *nova*, *nova*, *novum*). One example is *erjupama* in TL 80,3, which is generally agreed to be an epithet of the goddess Maliya meaning something like 'exalted'. The ending *-ama* would be fem. nom. sg. of a participle in *-ami-*. A second unrecognized example is found in TL 100, which reads in its entirety: *ebe xupa me tibeija*. The form *xupa* 'tomb' can only be dat. sg. or pl. or nom. sg.. The first two, however, are eliminated by the form of the demonstrative, which would have to be respectively *ebeiti* and *ebette*. On the other hand, *ebe* is the precise expected equivalent of Hitt. and Luv. nom. sg. *apāš*. The text must read: 'This tomb (is) of so-and-so' = 'belongs to so-and-so'. The word *tibeija* is evidently not gen. singular or plural, but rather fem. nom. singular of a relational adjective in **-iyo-*, agreeing with *xupa*, thus 'This tomb is Tibeian' = 'belongs to Tibe'. This construction is well attested in HLuvian, as I will soon discuss elsewhere. The last example is in TL 18: *ebē[ñ] xup[ā] me n[e] [prñn]a[chwatē] prisei epñnē[ñ] ebēi apñxabi[ñ]a ebēi* 'Prisei built this tomb. (It is) for his younger brothers and his posterior (= posthumous?) descendants'. Here the gen. plural *epñnēñ* stands parallel to the relational adjective *apñxabiñja*, which is fem. nom. singular agreeing with the understood subject *xupa*. This mixed construction is also common in HLuvian. The productivity of the feminine declension of the adjective is unclear. I would also not care to affirm whether the development is inherited or an innovation.

(N 320, 16–17) to mean 'stand', not 'place', and there is no good reason to suppose a borrowing from Greek. Lyc. *stta* may be the perfectly regular reflex of PIE **steh₂* 'stand'.

The family of *ara* 'properly' (or 'proper action'), *arawa* 'free' (or 'freedom'), and *a/erawazija* 'memorial' (or similar) belongs with Hitt. *ara* 'proper' and *arawa* 'free'. According to the attractive etymology of Benveniste, HIE (1962) 108–110, these reflect PIE **ar-* 'to fit', with the same moral application as in English 'fitting' = 'proper' (see also Laroche, *Hommages à G. Dumézil* (1960) 124–128). However, since all the Lycian forms have an *a* in the following syllables, they do not furnish a probative example of **a > Lyc. a*.

When we consider the fragmentary attestation of Lycian and the further limitations imposed by the umlaut rule, I believe that the above contrastive lists are reasonably impressive. These facts are completely incompatible with the common assumption that the Lycian four-vowel system is derived from a Proto-Luvian three-vowel system. By such a development there could be no correlation between the contrast *e : a* in Lycian and the original opposition of PIE **o* and **a*.

The consistent contrast between Lyc. *e < *o* and Lyc. *a < *a* can only be explained by assuming that Lycian, like Hittite, inherited the PIE five-vowel contrast intact from Common Anatolian and then merged original **o* directly with **e*, while Hittite and Luvian merged **o* with **a*.¹⁷ This account presupposes that some cases of Lyc. *e* continue directly PIE **e* (Pedersen, LH 33), and several examples can be found: (1) *esu* 'let it be' < **h₁estu*; (2) *-pe* (particle) = Luv. *-pa* (cf. Lat. *mempe*); (3) *-te* (particle) = Luv. *-tta* (cf. Grk. *hó-te*, prob. *ah-te*); (4) *ē* 'if' < **en* 'in' (the case that)¹⁸; (5) *ēmu* 'I, me' < **emu* (cf. Grk. *emé*, Hitt. *ammug*, etc.); (6) *tise* 'some/anyone' probably also represents **k₁is-ke* (= Hitt. *kusiške*), but *-ko* is also possible

¹⁷ Shortly before the oral presentation of this paper I was pleased to learn that J. Rasmussen of Copenhagen had arrived independently at the same conclusion. His formulation, based on some of the same contrastive examples but with a different version of the umlaut rule, is printed in the present volume.

¹⁸ Lyc. *ē* was already tentatively identified as a 'potential particle' by Torp, *Lyklische Beiträge* V (1901) 22 ff. See also Gusmani, *IncLang* 2 (1975) 265, with note. The meaning 'if' is now confirmed by the example in the Trilingual N 320,37, where *ē* matches Grk. *án*. The equation of Lyc. *met* with Luv. and Hitt. *mán* 'if' by Laroche, *Fouilles de Xanthos*, 6.82 (and elsewhere), is false on both phonological and syntactic grounds. First, there is no good evidence for the alleged change of **Vn* to *V_i* in Lycian. Note the counterexamples of **-om* to *-ē* given above. All verbs which show an *i*-diphthong in the third plural in Lycian have an inherited *-i-*, as shown by the Anatolian cognates: *atiñ* 'they make' = Luv. *ayanñi*, *tubeiti* = Luv. *tupainñi* 'they strike', etc. In other cases, even when the nasalization is lost before a consonant (as often in Anatolian), no *i* appears: e.g. *hkatñ* beside *hātñ* 'they let go' < **sh₁-enñi*. Second, *met* cannot possibly mean 'if', since it occurs in imperative as well as conditional sentences. This is admitted implicitly by Laroche himself, BSL 53.117 & 192, who translates TL 88,3 and TL 89,1–2 as straightforward imperative sentences. As already recognized by Pedersen, KZ 37 (1923) 205, and Merigg, KZf 1 (1930) 425, most conditional sentences in the Lycian tomb inscriptions are marked only by word order: the combination *me-i* 'and therein' is placed in non-initial position. Compare the inverted order of English 'Had I the time' = 'If I had the time'. The only genuine conjunction 'if' is Lyc. *ē*, also seen in *ēke* 'when' (see above).

(cf. Hitt. nom. pl. *kuiššga*). Other examples of Lyc. *e* < PIE **e* are rendered non-probative by the umlaut rule: *ēnē* 'below' = CLuv. *ānān* by Čop's Law < **ēn*-t + ¹⁹; *ēri*- 'lower' < **endheri*- (= Luv. **antari*-); *esi* 'is' < **h₂esti*; *esbe*- 'horse' < **ekwo*-. In order to demonstrate the origin of the Lycian vowel system claimed above, it is obviously not sufficient merely to cite positive examples for the development. There must also be no cogent counterexamples. I must now therefore treat cases of *e* and *a* in Lycian which are unexpected by the above analysis.

There are virtually no examples of unexpected *e*. The *e* in the terms of relationship *ēni*- 'mother', *nēni*- 'brother' and *tedā*- 'father' for expected *a* in Lall-wörter (cf. Luv. *ānni*-, *nani*-, and *tādā*-) is of course due to the umlaut rule. Since *i*-stem nouns had front vowels in the end syllable in all case forms, here the umlaut was consistent throughout the paradigm, with no chance for restoration/retention of the original *a* vocalism. I also attribute the *e*- of the variant *erawazija* 'memorial' to the umlaut rule, although this appears at first sight rather odd, since the umlaut seems to have skipped over two syllables. Note first of all that the *e*-variant occurs only in *erawazija*, which does contain the umlauting sequence *-ij-*. On the other hand, one finds only *ara*, *arawa* with initial *a*- where there is no possibility for umlaut.²⁰ For the 'skipping' of the umlaut compare the hapax *prīnewāzē* 'they build'. It is noteworthy that one finds beside this only one example of *prīnewāzē* 'he built' with normal umlaut in the face of over 100 examples of unumlauted *prīnewāzē*/*ē*. I conclude therefore that the labial glide *w* had some retarding effect on the umlaut, resulting in the umlaut being 'postponed' to earlier syllables.²¹

There are several types of unexpected *a*. First, one finds sporadic *a* for *e* in final syllables: 1x *tuhās* for *tuhēs* 'nephew', 1x *tāna* for (*t*)*āne* 'to place' and 1x *erī-jēna* for *erījēne* '?' (same text!), 1x *meṛna* and 1x *ma na* for *mē(ṛ)ne* 'and it/him', 1x *zūwīmā* for *zūwīmē* '?' and 1x *ebāhā* for *ebēhē* 'their(s)'. I have no assured explanation for these alternations. Since all the examples occur in final syllables and are probably unaccented, an incipient merger of *a* and *e* in this position seems plausible. In any case, I emphasize that in all cases the *e* vocalism is clearly regular and the *a* vocalism sporadic. Whatever the explanation, then, these examples do not affect the claim of a basic consistent contrast between Lyc. *e* and *a*.

One important source of secondary *a* in Lycian is refashioned consonant and *u*-stems: *mahāna*- 'god' and *Elījāna*- 'water-nymphs' continue old *n*-stems, prob-

¹⁹ G. Klingenschmitt has brought to my attention Toch. B *ānc* 'down(ward)', which appears to require PIE **an*- or **h₂en*-. However one is to explain the Tocharian, the geminate consonant in CLuvian by Čop's Law independently confirms **ēn*- for Anatolian. We know that accented **ā* does not trigger the gemination in Luvian: cf. *tāh*- 'father', not **tāhh*- from **dād*h.

²⁰ The *e*-vocalism in the famous gloss *Ereua* = *Eleuthera* 'free (city)' is hardly probative, since it may well be influenced by the Greek equivalent.

²¹ I provisionally prefer this explanation because I find the derivation of this family from PIE **ar*- so appealing. However, as noted above, the *a*- of the first syllable in *ara* and *arawa* could be due to umlaut. Therefore one could choose to derive this set (and Sikt. *arya*- and *rta*-) ultimately from the root **h₁e/or*- 'move, go'. The *e*- of *erawazija* would then regularly reflect **o*- (not **e*- because of Hitt. *a*-). The semantic bridges from physical motion to morality would be in usages such as Fr. *ça va* or Germ. *das geht* (*nicht*).

ably in **h₁on*- (Eichner, *Or* 52: 62-64); *χūtawata*- 'rule' reflects a *t*-stem (cf. Hitt. *-att*-); likewise *abūtāi* 'possessions' (gen. or nom. pl.) < **h₁sūt*- (Laroche, *Fouilles de Xanthos* 6: 68); *χahba*- 'descendant' < **h₂e/onsu*- (HLuv. *hasu*-) and *wawa*-/*uwa*- 'cow' < **g^oow*- have replaced stems in *-u*- (*-w*-). The inflection of *kbatra*- 'daughter' < **dhugh₂tr*- may also belong here, but the influence of the feminine nouns in *-a*- from **eh₂r*- is also possible. The likely source of *a*-stem inflection in these consonant stems is the anim. acc. singular in *-ā*, probably the regular reflex of syllabic **-n*-. Positive evidence for **N* to Lyc. *ā* is admittedly hard to come by, but note *brqas* 'Storm-god' < **terh₂qt*- and *pādāh* (dat. sg.) 'place' (= HLuv. **pita***h*). The strongest argument is negative: we know that final **-om* gives *-ē* (nt. nom.-acc. singular, anim. acc. singular, and gen. plural as given above) and also that **en* gives *ē* ('if' from **in*'). There is then really no other plausible source for the final *-ā* of old consonant-stem accusative singulars or for the *ā* of *pādāh*.²²

Another secondary source of Lycian *a* is the sequence **eh₁*, which yields *a* in Lycian as well as Luvian. This development is seen in the singular forms of the verbs *a*- 'make, do', *ta*- 'put, place' and *ha*- 'let go, release', which show pres. 3rd singular forms with a vocalism and lenition of the consonant of the ending produced by the long vowel resulting from loss of **h₁*: thus *adi* < **ye_hh₁-ti*, *tadi* < **dhe_hh₁-ti* and *hadi* < **seh₁-ti*. For *tadi* see Eichner, *MSS* 31: 80, and for *adi* Melchert, *Phon.* 159ff. I will soon discuss elsewhere the equation and derivation of Lyc. *ha*- and Luv. *ša*- 'let go, release'. It is important to note that one cannot derive the *a* vocalism of the singular forms secondarily from the plural in Lycian (an explanation which would be conceivable for Luvian). As indicated in the last paragraph, a third plural **dhh₁-enti* (or even **dhh₁-onti*) could lead only to *tēti* in Lycian. The more frequently attested *tāti* must in fact owe its a vocalism to analogical influence of the singular. The once attested *tēti* is probably due in turn to umlaut of *tāti*, though of course an original form cannot be entirely excluded. In any case the *a* of *adi*, *tadi* and *hadi* must be directly from **eh₁*.²³

If one treats the forms *ara* and *arawa* as nt. nom.-acc. plural of adjectives 'proper' and 'free' respectively, then the examples *arā* and *arawā* become problematic, since they would appear to represent nt. nom.-acc. singulars with a voca-

²² The *a*-stem inflection in the old *u*-stem **h₂e/onsu*- and in **g^oow*- 'cow' must of course be analogical, since in PIE the acc. singular of an animate *u*-stem was **-[um]* and that of 'cow' was **[g^oom]*.

²³ I now withdraw my doubts about the lenition of these forms expressed in *Phon.* 159ff. Since the compensatory lengthening caused by the loss of tautosyllabic **h₁* must precede lenition, which is itself Common Anatolian, my former account of the contrast between Luvian and Lycian *a* and Hittite *ē* < **eh₁* is impossible. One still has two alternatives. First, one may assume that all cases of long **ē* give *a* in Luvian and Lycian versus *ē* in Hittite. Despite the alleged examples of **ē* to *i* in the Luvian languages I still find this a tenable position. Should the change of inherited long **ē* to Luvian *i* prove to be correct, we will then have to assume that the long **ē* resulting from loss of tautosyllabic **h₁* was a lower, more open vowel (*ē*) than inherited long **ē* (*ē*). This lower vowel *ē* then developed further to *a* in Luvian and Lycian, in contrast to the higher inherited long **ē* which eventually merged with *i*. In Hittite the two kinds of long **ē* merged, at least as far as we can tell. Note that if *Lyd. cat* 'dedicates' continues **dhe_hh₁ti*, Lycian would also show **eh₁* to *a*.

lism, contrary to the evidence for $\tilde{e} < *om$ given above: see Laroche, *Fouilles de Xanthos* 6.87. However, *arawa-* and *ara-* could also be interpreted not as adjectives, but as derived abstract nouns in $*-eh_2-$: 'freedom' and 'proper action'. In the Trilingual N 320, 12 the accusative *arawā* is in fact translated as Grk. *atēleian*, while *arawa hāi* in N 320, 21 may be interpreted as 'release into freedom': see the discussion of this passage by a series of scholars in *IncLang* 4/1 (1978) 89 ff. The examples of *arawā* in TL 128, 2 and TL 135, 2 could also mean 'freedom'. The hapax *ara* occurs in an unclear context in TL 44a, 34, while *arā* in N 320, 27 as the object of *kumezidi* 'sacrifices' may be understood as 'rite'. For *ara kumezidi* (*kume-* *hedī*) 'sacrifices a rite with a sacrifice' = 'perform a rite' compare Hitt. SISKUR x *šipand-* 'sacrifice ritual x' = 'perform ritual x'. Therefore *ara* and *arawā* may be accusative singulars to feminine abstract nouns with regular *a* vocalism, and need not be taken as irregular nt. nom.-acc. singulars.

The largest class of unexplained cases of Lycian *a* consists of the names of professions or social classes in *-aza-*: *kumaza-* 'priest' (= HLuv. *kumaza-*), *maraza-* 'judge', *wasaza-* '?' (= CLuv. *wasšazza-*?), *χdāza-* 'slave' (see Eichner, *Or* 52.54 ff), *špñtāza-* 'libation-priest' (?), and the unanalyzable examples *mahimaza-*, *mahi-dāza-*, *zānaza-* and *zīmaza-*. The equation with *-azza-* in Luvian narrows down the possible sources of this class considerably. In general we are facing the problem of Anatolian *z* before back vowel where it cannot be due to assimilation from $*t$ I have recently argued in *Studies in Memory of Warren Cowgill* (1987) 182 – 194 that PIE palatal $*k$ appears as Luvian *z*, but the result in Lycian is instead *a*, so this falls as the source of a Luvian-Lycian suffix *-aza-*. While the origin of the suffix remains obscure to me, so long as no compelling derivation is offered showing Lyc. *a* from PIE $*o$, this class does not constitute an obstacle to the analysis presented here. In particular, the existence of names of professions and classes in *-a-* with masculine reference does not weaken the argument for most animate *a*-stems in Lycian being feminines. Compare Latin *agricola*, *navata*, *pirata* or Greek nouns in *-tēs*.

In sum, then, there are no solid counterexamples to the claim made above that Lycian *e* continues only PIE $*e$ and $*o$, while Lycian *a* reflects PIE $*a$ (excepting the effects of the umlaut rule). The merger of $*o$ with $*e$ as *e* is unusual, but not unparalleled: cf. the development of PIE $*ō$ to *e* in Albanian. R. Gusmani also kindly reminds me that the Lycian 'e' is often transcribed with Greek alpha: note the names *Erbbine* = *Arbinas* or *Trijēzi* = *Triendasas*. I emphasize again that in the Lycian synchronic system the 'e' is a low front vowel. It is thus quite possible that the real phonetic value is that of an [æ] or even [a] as in French *la*.

I cannot pursue here all the consequences of the demonstration that Lycian distinguishes PIE $*o$ from $*a$. The two most important have already been cited. The Lycian evidence for animate (!) stems with *a* vocalism distinct both from the reflexes of *o*-stems and from neuter collectives answers in the affirmative the long debated question as to the existence of the feminine gender in Anatolian. Evidence for Indo-Hittite or for an early separation of the Anatolian branch will have to be sought elsewhere. It is also now clear that the synchronically active preterite endings of Luvian and Lycian continue old medial $*-to$ and $*-onto$. I leave to others

the task of integrating this fact into an account of the history of the Anatolian verb system.

By using together the results of a Hittite relative chronology and evidence from another Anatolian language, we have attained a much clearer picture of the vocalism and other aspects of Common Anatolian. I am confident that continued exploitation of the other Anatolian languages in conjunction with Hittite can lead to further dramatic progress in our understanding of the history of this family and of its relationship to the rest of the Indo-European languages.