

Life Everlasting: Latin *iūgis* “everflowing”, Greek ὑγιής “healthy”, Gothic *ajukdūps* “eternity” and Avestan *yaunaējī-* “living forever”

Summary: It is argued that Latin *iūgis* “everflowing”, Greek ὑγιής “healthy”, Cypriote υ̣ραις ζαν “forever and ever”, Gothic *ajukdūps* “eternity” and Avestan *yaunaējī-* “living forever” are all reflexes of a PIE collocation of the acrostatic neuter *-u-* stem **h₂oim* “life, eternity” and the root **g^hih₃-* “life, to live”. The delabialization of a labio-velar after *u* is shown to have been a Proto-Indo-European change¹.

1. Latin *iūgis* “everflowing”

The Latin *-i-*stem adjective *iūgis* “everflowing” is said to be a derivative of *iugum* “yoke” according to W-H and E-M². W-H compare it formally to ON *eykr* “beast of burden, horse” which they derive from **iougis*³. This

¹ After I had written the majority of this text, I was happy to discover that Ferdinand DE SAUSSURE had anticipated many of the ideas sketched out herein. In a brief and brilliant note on the etymology of ὑγιής (MSL 7, 1892, pp. 89–90) where he proposed the widely accepted etymology < **h₂su-g^hih₃ēs*, DE SAUSSURE also suggested an alternative etymology comparing ὑγιής to Aves. *yaunaējī-* “living forever”. He then went on to hint at the possibility of comparing αἰ-ζήος “vigorous”, *iūgis* “everflowing”, and Cypriot υ̣ραις ζαν “forever and ever”. Yet the details of his comparison, when they are provided at all, are rather different, and have clearly failed to convince. I hope that the arguments presented here will further the wider acceptance of DE SAUSSURE’s basic insight. Many thanks for much valuable advice and criticism are due to Wayles BROWNE, Jay JASANOFF, H. Craig MELCHERT, Alan NUSSBAUM, Guðrún ÞÓRHALLSDÓTTIR and Calvert WATKINS. Naturally, I alone am responsible for any errors of fact or opinion that remain.

² W-H 1, p. 727. E-M, p. 327.

³ The reconstruction of the pre-form of ON *eykr* seems to be unambiguous. DE VRIES, however, ANEW, p. 107, posits a preform **jaukijaz* < **iougijos*. If DE VRIES’ reconstruction **jaukijaz* were, in fact, possible, one could assume that Germanic inherited a τόμος type noun **jaukaz* “yoking” < **iōugos*, cf. Ved. Skt. *yóga-* “yoking”. From this noun a

traditional comparison is, however, seriously flawed. First, it is an interesting fact that *iūgis* is used in Classical Latin, with one exception, only of water⁴. The examples are: Cic. Nat. Deorum 2,25 *ex puteis iugibus* "from everlasting wells"; Div. 1,112 *puteo iugi* "an everlasting well"; Div. 2,31 *aquae iugis* "everlasting water"; Sallust Jug. 89,6 opposed to *pluvia* "collected rain-water"; Horace Sat. 2.6.2 *iugis aquae fons* "a fountain of everflowing water"; Epist. 1,15,16 *puteosne perennes iugis* "everlasting enduring wells". Cf. also Festus' *aquam iugem*, and the Gloss *iugis aqua* ἄέναν ὕδωρ "everflowing water". On the theory that *iūgis* is related to *iugum*, this apparent specialization of meaning is inexplicable.

There is not one example of *iūgis* that in any way supports its supposed original adjectival meaning "yoked". Even granting that this is an argument from silence, and that the specialization of *iūgis* in the meaning "everflowing" could have been pre-literary, one would still have to overcome a considerable semantic distance starting from an original adjective **iougis* "of the yoke", via a more generalized meaning "continuous", to arrive finally at a respecialized meaning "everflowing". To argue from the other side, one may also note that the verb *iungo* does not seem to show up in the meaning "to make continuous" before Pliny The Younger (Ep. 4.9.10). Nor do any of the

genitival adjective **iaukijaz* "of yoking" could have been derived from which, in turn, a de-adjectival abstract **iaukiþō* > ON *eykt* f. "the time between one yoking and the next" could have been formed. But this reconstruction is apparently excluded. *eykr* nom. pl. *eykir*, gen. pl. *eykja* is declined in the same fashion as *bekkr* "stream", and words of this type can reflect both *-i*-stems and *-ja*-stems. For example, ON *belgr* "sack" corresponds to Gothic *balgs* "sack", a clear *-i*-stem, but ON *beþr* m. "bed" corresponds to the Gothic neuter *-ja*-stem *badi* "bed". See NOREEN, p. 270. But there are no examples of original *-ija*-stems ending up in this paradigm. A pre-form **jaukijaz* would have become **eykir*. Only a reconstruction **iougis* will accurately account for *eykr*. Since there seems to be no convincing evidence for a *vřddhi* formation with *o*-grade either within Germanic or elsewhere (see DARMS, p. 422), it is not possible to explain **iougis* or *iougiōs* as *vřddhi* derivatives of **iugōm* "yoke". One could compare it formally with Greek τρῶφις "swollen, well-nourished" < τρέφω "to nourish". While Germ. **iaukiz* < **iougis* was still an adjective meaning "yoked" a de-adjectival abstract in *-iþō* **iaukiþō* could have been derived from it, the source of ON *eykt*. Cf. Goth. *hauhs* "high" > *hauhiþa* "height". On the other hand, **iaukiz* might be a possessive *-i*-stem derived from an inherited τῶμος type noun **iaukaz* "yoking" < **iōugos*. I see no easy way to decide between these two alternatives.

⁴ The earliest occurrence of *iūgis* (Plautus Pseud. 84: *thensaurus iugis*) happens to be used metaphorically of a treasury.

indubitable members of the family of *iungo* show any trace of semantic specialization in this direction.

A step in the right direction was taken by DANIELSSON, who is reported to have thought that *iūgis* should be connected with *aevum* "span of life"⁵. W-H presumably rejected this etymology for two reasons. First, because they did not see or believe that *aevum* "lifetime", Goth. *aiw-* "time, eternity", Skt. *āyu-* "life", etc., and *iuvenis* "young man", Gothic *juggs* "young", Aves. gen. sing. *yaoš* "vitality", etc. can all be related as exemplars or derivatives of a PIE neuter *-u*-stem **h₂oiu* "vitality, eternity"⁶. Second, they may have been leery of this suggestion because there is no evidence at all for the PIE or Latin suffix *-gi-* which is apparently required for DANIELS-

⁵ Grammatische und Etymologische Studien p. 49¹, according to W-H, I, p. 727, but I have read this footnote very carefully and found no mention of *iūgis*, although various words of the **h₂oiu*-family are discussed.

⁶ **h₂oiu-* must be reconstructed as a *-u*-stem of the **doru, gónu* type, i.e. as an originally acrostatic *o/e* ablauting paradigm. The *o*-grade is guaranteed by Greek *οὐ* (Warren COWGILL, Lg 36, 1960, pp. 347-50). The *e*-grade is suggested by Grk. *αἰεῖ* "forever" < **h₂eieu-* most probably interpreted as the dative of this *-u*-stem. In Indo-Iranian the original weak stem **h₂eiu-* was replaced by **h₂ieu-*, the source of the Aves. gen. sg. *yaoš*. Cf. Ved. Skt. nom./acc. sg. *dāru* gen. s. *dróh* < P.In.-Ir. **dāru, dráuš*.

It seems necessary to assume that both "vital force" and "eternity" were possible meanings of **h₂oiu* already in the proto-language. The former proto-meaning seems secure, since **h₂iu-h₂on-* "young man" (Ved. Skt. *yúvā*, Lith. *jaunas* "young", OCS. *junъ* "young", Latin *juvenis*, OIr. *oac* "young" < **h₂ieuh_xñko*, Goth. *juggs* "young" < **h₂ieuh_xñko* etc.) can only be explained as a derivative formed with the possessive suffix **h_xon-* (K. HOFFMANN, MSS 6, 1955, pp. 35-40) from a base noun meaning "vital force". But the meaning "eternity" must also have been 'ursprachlich' to judge from the semantic agreement of *αἰεῖ* "forever", and the Aves. dative or directive (?) *yaunaē* "forever". Furthermore, COWGILL's etymology of Grk. *οὐ* "not" and Arm. *ոչ* "not" as extracted from **ne...h₂oiu* (*k'id*) "not...ever" requires an early meaning "eternity". This double meaning strikes one as rather odd. It is not, however, unparalleled. Lithuanian *viėkas* means "vital force", but OCS *věkas* means "human life, eternity" and traces of the meaning "vital force" are also found, according to B. UNBEGAUN, in the Old Russian *bez věka* "invalid" literally "without force" and in the verb *uvěčit* "mutilate" literally "deprive of vital force". See B. UNBEGAUN, Une parallèle sémantique greco-slave, in FS KRAHE, p. 173-176. But the interpretation of the OR juncture *bez věka* is not certain. AVANESOV, II, p. 294, translates *věka*, in this context by Russian *uvěčije* "damage". The semantic development of **h₂oiu* can perhaps be understood if one assumes that the original meaning was "life". In certain case forms, e.g. the dative, the meaning "for life" may then have acquired the meaning "for ever, for eternity". From here the meaning 'eternity' was generalized to the entire paradigm.

SON's etymology. But if the morphological details could be made to work, this etymology would be far more appealing on semantic grounds, for the family of $*h_2o_{i\bar{u}}$ is very apt for describing an everflowing fountain, cf. e. g. Greek κρήνης τ' ἀενάου "everflowing fountain" (Hes. Op. 595) and κρήνη ἀείροος "everflowing fountain" (Soph. OC. 469)⁷.

To my mind, the apparent suffix *-gi-* finds its closest match in the Germanic $*aiu\text{-}ki\text{-}$ "eternal" found in Gothic *ajukedups* "eternity" and OE *ēce*, *æce*⁸ "eternal" < $*aiu\text{-}ki\text{-}$ ⁹. Now it is surely not coincidence that both *iūgis*

⁷ Furthermore, words for "river" or "water" are sometimes derived from the semantically related root $*g^hih_3\text{-}$ "live", e.g. Ved. Skt. *jirī-* "flowing water", Paelignian and Umbr. *biam* "fountain", (VETTER 212, 234). Furthermore $*g^hih_3ueh_2$ $h_2op\text{-}s$ "living water" may have been a PIE idiom for "fresh, i.e. not stagnant water" in view of the semantic agreement of e.g. Ved. Skt. *jirādānu-* "pouring forth quick drops", Latin *aqua viva* "fresh water" (Varro, R. 1.11.2, etc.), the Serbo-Croatian idioms *živa voda* "spring" literally "living water", and the folkloric *živica voda* "the living one, the water" (Wayles BROWNE p.c.), Russian *voda živaja* "running water, spring water" (AVANESOV I, p. 451), and OE *cwic wæter* "fresh water". It therefore seems at least as plausible to derive the Indo-Iranian $*iauitā$ "stream, watercourse". (OP *yauviyā* "canal", Mod. Pers. *jōi* "watercourse, canal", Kati *yū*, "canal", Ved. Skt. *yavyā* "stream", e.g. RV. 8.98.8 *vār na... yavyābhis* "wie ein Gewässer durch Bäche" (GELDNER)) from $*h_2ieu\text{-}iēh_2$, an $*iēh_2$ derivative of $*h_2o_{i\bar{u}}$, as to derive it from the scantily attested root $*yu\text{-}$ "to go, move" (*yoni-* "way" > "womb" etc.). Formally, one could compare Ved. *vaśavya-* n. "wealth" derived from *vāsu-* "good".

⁸ CAMPBELL, p. 100, considers *æce* (Vespasian psalter, Rushworth Gospel, Kentish characters) to be the regular outcome of < $*æci\text{-}$ < $*æyci\text{-}$ < $*æyiki\text{-}$ < $*aiuki\text{-}$, but he regards *ēce* (Caedmon *ēci*) as unexplained.

⁹ The comparison of Latin *iūgis* and Gothic *ajukedups* was made already by BENVENISTE in his classic article BSL 37, 1938, pp. 103–112. The reconstruction of an *-i*-stem adjective seems to me the simplest hypothesis to account for the correspondence of Goth. *ajukedups* and OE *ēce* for the following reasons: Goth. *ajukedups* is formed with the feminine de-adjectival abstract suffix *-dūpi-* (= Latin *-tūs, -tūtis* etc.). The adjective at the base of this abstract could have been a thematic stem $*ajuka\text{-}$. For the syncope of a thematic vowel before the suffix *-dūpi-*, cf. *manag-dups* "abundance" from the thematic base *manags* "many" and *mikil-dups* "greatness" from the thematic base *mikils* "great". On the other hand, the base adjective could also have been an *-i*-stem $*ajuki\text{-}$ which would certainly have lost its *-i-* before the suffix *-dūpi-*, just as the *-i*-stem adjective *gamains* "common, unclean" lost its *-i-* to make the abstract *gamain-dups* "fellowship". The base adjective could not, however, have been $*ajukija\text{-}$ since this could only have formed the abstract $*ajuki\text{-}dups$. Cf. Gothic *andi-laūs* "endless" < $*andija\text{-}lausa\text{-}$; see KRAUSE, p. 91. As for OE *ēce*, it could reflect either an *-i*-stem or an *-ija*-stem but not, of course, an *-a*-stem. In view of these facts, one could imagine that Gothic and OE inherited from Proto-Germanic a thematic adjective $*ajuka\text{-}$ "eternal". In Gothic this adjective served as the base of the abstract *ajukedups* but

and *ajukdupš* apparently show an otherwise unparalleled suffix **-gi-* added to what in Germanic is certainly, in Latin possibly, a form of PIE **h₂oiu*. This comparison is very supportive of DANIELSSON's basic insight, but the question remains: what is this apparent suffix **-gi-*?¹⁰

I propose that the putative **-gi-* suffix is not a suffix at all, but rather a form of the root **g^heih₃-*/**g^hih₃-* "live". Since neuter *-u*-stems of the **doru* type show a zero-grade form as the first member of compounds, e.g. Ved. Skt. *jñubádḥ* "bending the knees", Greek *δρυτόμος* "wood-chopper", one would expect **h₂oiu* to appear as **h₂iu-* in this position. A root-noun of the root **g^hih₃-* is attested in Avestan *-ərəžə-jñ-* "living honestly". Therefore a bahuvrīhi combining **h₂iu-* and **g^hih₃-* meaning "having a life for life (= for ever)" or "having a life which is eternal" would in the first instance be expected to be **h₂iu-g^hih₃-s*. I believe it is this PIE compound that underlies

was itself lost. In the ancestor of OE **ajuka-* was substantivized, and from this unattested substantive **ajuka* or **ajukaz* "eternity" an adjective **ajukija-* "eternal" was derived, the direct ancestor of *ēce*. But it is far simpler to suppose that both Gothic and OE inherited an adjective **ajuki-* from Proto-Germanic which in Gothic was the base for the abstract *ajukdupš* and in OE became by sound change *ēce*.

Since the reconstruction of a thematic stem **ajuka-* is unlikely, the traditional comparanda, i.e. Germanic adjective in *-ka-*, e.g. Gothic *ibuks* "backwards" and the adverbs *anakes* "suddenly", *alakejo* "all" and PIE adjectives in *-go-* become rather less interesting. A particularly favored comparandum, the Rig Vedic 1,116,1 hapax **ārbhaga-* "young" seems to be nothing more than a 'volkssprachlich' variant of the much better attested *arbhaká-*. See MAYRHOFER, EWALD, p. 120 and HOFFMANN, Aufsätze p. 137, where other Skt. examples of variation between *-ka-* and *-ga-* are listed.

¹⁰ One might point to the Lithuanian *dveigys* "two years old", *treigys* "three-years-old" *ketvergis* "four years old" etc. which cannot be separated from OCS *trizb* "three years old", and Old Serbian *dviz* "two years old". But the Serbian form reflects a Proto-Slavic **dvizb*, or **dveizb* and must, in turn, go back to **dveig(h)o-* with a palatal **-g(h)-*. This form cannot be the result of Bdc palatalization. See LUNT, p. 19. One is tempted to compare the Hittite synonym *daiuga-* "two years old" which is presumably a compound of *da-* < **duoh₁*, "two" and *iuka-* < **iugom* "yoke" in the meaning "span of time" which is also found in Sanskrit *yugam*, but there seems to be no way to make this work phonologically. Next come to mind OHG *zwīg* "branch" OE *twīg* "twig" < **dweigho-*, (but **dweikó-* is also possible) Albanian *degë* "branch" < **dwoigheh₂*. Yet this apparent suffix *-gho-* seems to be closely related to the Greek numerical adverbs in *-χα*, e.g. *δίχα* "in two". See BRUGMANN II 1, p. 513–514. While a branch can easily be designated as "the thing that splits in two", it is not easy to see how the sense "X-years old" could somehow be derived from these fractional adverbs. I can see no easy solution to the problem of *dveigys* etc. Yet these forms can hardly be taken as evidence for a PIE suffix *-gi-*.

not only Latin *iūgis* and Germanic **ajuki-*, but also Greek ὑγίης “sound, healthy” and Avestan *γᾱuuāēñ-* “having eternal life”. But in order to arrive at a “suffix” **-gi-*, which is apparently required for Latin and Germanic, from a root noun **-g^hi_{h3}-*, one must explain both the replacement of the labiovelar by a velar and the apparent loss of the laryngeal.

2. The Missing Laryngeal

As for the apparent loss of the laryngeal, a number of possible scenarios could be sketched out. First, one might compare the cases where a laryngeal between sonorant and a consonant in the second member of a compound or after a syllable of reduplication seems to have been lost. Thus one finds in Sanskrit *súsuti* “easy birthing” from **h₁su-sub₂ti-* vs. the simplex *sūtí* *TS* “birth”. In Greek, one finds *πίμπλαμεν* “we fill” and *ἰλάσκομαι* “I am propitious” instead of phonologically expected **πίμπλημεν* < **pip^hl₁-mes* and **ἰλήσκομαι* < **sis^hl₂skē*¹¹. By application of this rule one would expect **h₂iū-g^hi_{h3}-s* to become **h₂iū-g^hi-*.

Second, one might consider invoking a related rule of laryngeal loss: the so-called *νεογνός* rule whereby a laryngeal between a sonorant and a vowel was lost in the second member of a compound or after a syllable of reduplication, e.g. *νεογνός* “new-born” < **neuo-ḡnh₁o-*, Goth. *niuklahs* “childish” from **neuo-ḡnh₁o-keo* — by dissimilation, Skt. *jajñe* “I am born” < **ḡeḡnh₁-h₂ai*, Grk. *ἔγκρος* “within the head” or “brain” < **en-ēḡh₂os*¹². By the *νεογνός* rule, all prevocalic forms (i.e. the singular gen., dat., inst., loc.) of **h₂iū-g^hi_{h3}-* would become **h₂iū-g^hi-*¹³.

¹¹ The example of *ἰλάσκομαι* was pointed out by M. PETERS (Armenian Lecture, University of Vienna, Fall 1991). True, one could explain *πίμπλαμεν* and *ἰλάσκομαι* as super-zero-grades, but one expects rather **πίμπλημεν* since this is a root ending in the first laryngeal, cf. *plēnus* “full” < **pleh₁no-*. The Vedic examples of this phenomenon are discussed by F.B.J. KUIPER, *Sprache* 7, 1961, pp. 24ff. See also MAYRHOFER *IG* 1/2, p. 150.

¹² See MAYRHOFER *IG* 1/2 p. 129, who, however, would limit this rule to the *h₁*. In view of *ἔγκρος*, this seems to be incorrect.

¹³ In addition, one might note that the vocative and the neuter nom. acc. s. **h₂iū-g^hi_{h3}* would have been susceptible to the so-called ‘in pausa’ laryngeal loss. Cf. the Ved. vocative *Yami* “O Yami” RV 10,10,14; and OCS *ženo* “o woman” < **g^hena* < **g^henah₂*, Umbrian *Prestot-a* “O Praestota” < **a* < **ah₂*.

Finally, one ought to consider whether either Latin *iūgis* and Gothic *ajukduþs*, OE *ēce* really require the laryngeal of **gʷih₃-* to be lost phonologically. Neither Latin nor Germanic maintained a category of long *-ī-*stems, and it is hard to see what else Latin and Germanic could have done to long *-i-*stem adjectives besides absorbing them in the regular *-i-*stem category. Compare the fate of **neptih₃s* "granddaughter" (Skt. *napitḥ* "granddaughter" etc.) in Latin and Germanic. In the former **neptih₃s* simply was incorporated into the *-i-*stem paradigm as *neptis* "granddaughter". In Germanic, **neptih₃s* was either treated as a feminine *-i-*stem, for example, ON *nipt* "a female relative, sister", OHG *nift* "granddaughter, step-daughter", or transferred to the *-iō-*paradigm in order to mark more clearly its feminine gender, for example, ON acc. s. (hapax, Helgakviða 2.28) *nipti*, OHG *nifta*¹⁴. An adjective inherited from PIE and ending in *-ī-* could hardly have escaped a similar morphological transfer. Thus the *-i-*stem adjective **ajuki-* could simply be another example of the same morphological phenomenon.

There are, then, a number of possible scenarios which could explain the apparent loss of laryngeal. Similar possibilities exist to give a convincing explanation for the change from labiovelar to velar.

3. The Loss of the Labial Element of a Labiovelar after *U* in PIE

The simplest hypothesis is to suppose that, already in PIE, a labiovelar lost its labiality by dissimilation after **u*. Thus according to this rule **h₂iu-gʷih₃s* would have become **h₂iu-gih₃s*. This idea was first proposed by DE SAUSSURE for PIE¹⁵, yet it has never been taken seriously as an Indo-European, as opposed to a specifically Greek, phenomenon. Nevertheless, I believe it is quite probably correct. To demonstrate this will require a review of the possible examples and counter-examples.

PIE **gʷou-kolo-* < **gʷou-kʷolo-*

¹⁴ For ON see CLEASBY-VIGFUSSEN, p. 455, and NOREEN, p. 270. For OHG see WELLS, p. 440. In OE feminine *-i-*stems and *-iō-*stems are indistinguishable. See CAMPBELL, p. 242.

¹⁵ MSL 6, 1889, pp. 161-162.

The best example of this rule is the word **g^hou-kolos* < **g^hou-k^holos* "neatherd" attested by Greek βουκόλος "neatherd", Myc. *go-u-ko-ro*, and the Celtic forms, OIr. *bóchail*, *buachail* "bubulcus", MWelsh *bugeil* "shepherd, boy", Cornish *bugel*, MBret. *buguel*, *bugel*, Vann. *bugul* "boy" which apparently reflect a Proto-Celtic **g^houkoli*.¹⁶ The second member of this compound, a derivative of the root **k^hel(h_s)* "to go round" (Greek πέλομαι "I am", Skt. *carati* "he wanders", Latin *colo* "I inhabit" etc.) originally began with a labiovelar as is established by Greek ἵππο-πόλος "horse-herd" (Hom.+) etc. The simplest hypothesis to account for these data would assume that the dissimilation of the labiovelar after *u* was a PIE phenomenon rather than that the same dissimilation occurred twice independently.¹⁷

There are, to my knowledge, no other clear cases of this rule¹⁸. This is not really surprising, since the original labiovelar would have been irretrievably merged with a velar in the cases where *u* invariably preceded¹⁹. One would therefore predict that velars would be particularly common in non-Schwebeablauting roots of the shape **Ce_uK-*. On the other hand, if *u* did not invariably precede, then the labiovelar could have been restored analogically. One would then predict that only roots of the shape **ueK^h-* / *uK^h-* or roots of the shape **Ce_uK-* with 'Schwebeablaut' would have evidence for a labiovelar

¹⁶ PEDERSEN VGKS, p. 127. VENDRYES LEIA, p. B-107. Thanks to Jay JASANOFF for calling the Celtic forms to my attention. The *-i*-stem is curious, and quite possibly more archaic than the Greek thematic stem. Perhaps the compound was originally **g^hou-k^holi* with the well-known substitution of *-i*-stem inflection for thematic inflection in the second part of a bahuvrihi. Cf. Latin *anima* (Naevius +) "breath of life" but *semianimis* (Enn. +) "half-alive", as well as *semianimus* (Sallust +) "id". Of course, one would then have to suppose that **g^hou-k^holi* was originally a bahuvrihi, "whose circuit is cows".

¹⁷ A third conceivable alternative, that the Brittonic forms are borrowed from Irish, seems rather unlikely. Avatars of **g^houkoli* are attested in every Brittonic language, and what would have been the cultural motivation for the borrowing?

¹⁸ One is tempted to try to explain the strange case of Gothic *auhns* "oven" < **úkenos* ONorw. *ogn*, OSw. *oghn*, *ughn* ODan. *ogn* "oven" < **úkenós* vs. OHG *ovan* OE. *ofen* "oven" MLG *oven* and Greek ἰνός "oven" by this rule. On the other hand, Mycenaean has *i-po-no* determinative POT (Uc 160, Kn 233 Docum.², p. 548) which is thought with some degree of probability to be the equivalent of 1st millenium Greek ἰνός. If this is correct, then ἰνός would seem not to have a labiovelar at all, and the whole family remains difficult to account for under any theory. In any case, SZEMERÉNYI's multiple dissimilation and borrowing account (Scripta Minora IV p. 2236-2237) fails to convince me.

¹⁹ Furthermore, it is only the 'centum' languages which can provide examples.

following *u*. These predictions are, in fact, confirmed. Consider the apparent counter-examples:

A. False Reconstructions

i. **bhleug*⁹. "flow"

The reconstruction of **bhleug*⁹ to explain the alternation of *fluo* and *fluxi*²⁰ is supported by no comparative evidence. An analogical explanation for *fluxi* is not difficult to find. For example, one may start from *confluges* "confluences" which could have been created on any one of several analogies, e.g. *contāmen*²¹ "contamination" < **kom-tag-s-men* : *contāgēs* "contact" or *exāmen* "a swarm" < **eks-ag-s-men* : *ambāgēs* "circumlocution" :: *flūmen* : X, X = *flūgēs*²². The creation of a form with a non etymological -g- is precisely paralleled by the case of *strāgēs* a "confused mass", *strāgulus* "clothes used as blankets". The root meaning of these word is "strewage" and they must therefore be connected with the root of *sterno*, *sternere*, *strāvi*, *strātus* "I strew" **sterh*₃- (Grk. aor. ἐστόρεσα by metathesis < **e-sterh*₃s- etc.). But since there is no evidence for -g- extended **sterh*₃g-, one would prefer to offer an inner-Latin explanation for *strāgēs* and *strāgulus*²³. In light of what has been said just above, it is clear that these forms were created on the analogy *ex-ā-men* : *amb-āg-ēs* vel sim. :: *strā-men* "straw" : X, X = *strāgēs*. Once a -g- had been introduced into *con-flūgēs*, it was quite simple for this to spread to other parts of this family on the basis of analogies of various sorts, e.g., *fruges*

²⁰ W-H, I, p. 519.

²¹ *Contāmen* is not actually attested until Tertullian, but its prior existence must be supposed on the basis of the verb *contāminare* (Ter. and Acc. +). See PERROT, p. 48-49.

²² *Contāgēs* is, of course, singular with both fifth declension (e.g. *contāgē* (Lucr. 3.734) and third declension forms (e.g. *contāgē* (Lucr. 4.336, etc)). *Ambāgēs* is a plurale tantum in archaic texts. Singular forms apparently do not appear before Ovid, e.g. Met 8.161 *ambāgē*. Perhaps the precisest formal model would have been *frūmen* "sacrificial mush" < **frūg-s-men* : *frūgēs* :: *flūmen* : *flūgēs*. The only problem is that *frūmen* is not attested before Arnobius. But it may, in fact, be a much older form which Arnobius took from some work on religious antiquities.

²³ W-H, II, p. 600 compare Lith. *strōga sāulės* "sunbeam" but this can only be from **streh*₂*geh*₂ with a different laryngeal.

fructus :: *flūgēs* : X, X = *flūctus*²⁴ and then *ductus* "leadership" : *duxi* "I led" or *luctus* "mourning" : *luxi* "I mourned" :: *flūctus* : X, X = *flūxi*²⁵.

ii. **bhouk*^{os} "flying insect"

POKORNY's lemma **bhouk*^{os}, p. 163, reconstructed to account for the comparison of Latin *fūcus* "drone" and Old English *bēaw* "gadfly", Low German *bau* "gadfly" is far from certain²⁶. The name of a flying insect could easily be at least partly onomatopoeic, and E-M's derivation of *fūcus* from **bhoikos*, a derivative of the root **bhei-* "bee" (OCS *bičela* < **bhikeleh*₂, Lith. *bitis*, OHG *bini*) is much more satisfactory semantically²⁷.

iii. **luk*^{os} "wolf" > Sabellic *lupo-* > Latin *lupus*

It is often assumed that Latin *lupus* "wolf" is a lone word from some Sabellic language where **k*^{os} became *p*. This Sabellic word, in turn, would seem to be derived from the same metathesized form of the PIE wolf word that lead to Greek λύκος, i.e. **lūk*^{os}. If this account were true, then it would seem that Sabellic **lupo-* would argue in favor of the retention of the labial element of a labiovelar after *u* in PIE. But this account is far from compelling. First of all, it is known that the Samnite and presumably Sabellic word for wolf was the tabuistic *hirpo-*, i.e. "the hairy one". Second, why should the early Latins have required a loan-word for "wolf", an animal which was presumably no more common in rural Samnium than in rural Latium? Pace Horace's *lupus in Sabina*, the wolf seems to have been not merely familiar to the early Latins, but even to have served almost as a totem for at least the Romans. One only need think of the famous 5th century B.C.E. statue of the Lupa Capitolina, or the denarii minted by the Italic allies during the Social

²⁴ Long *ū* because of Ital. *flutto*. See SOLMSEN, p. 129, n. 1.

²⁵ The pf. pass. ptc. *fluctus* (attested by the grammarian Priscian) was replaced by *fluxus* on the analogy *clau-si* "I closed" < **kland-sai*: *clau-sus* "closed" < **kland-to-* (vel sim. cf. also *pressi*, *pressus*; *cessi*, *cessus* etc.): *fluk-si* : *fluk-sus*.

²⁶ OE *bēaw* and Low German *bau* (if this form is real: I have yet to find it in any Low German lexicon) would seem to reflect a Proto-Germanic **baumaz*. If one must have an etymology for such a word, one might compare the onomatopoeic root **b(h)eu-* (POKORNY, p. 97) said to be the source of Persian *būm* "owl" and MHG *buc* "blow". One might also compare English *buzz*, *bumblebee* etc.

²⁷ See MEILLET, MSL 14, 1906–1908, pp. 476ff.

War showing the Italic bull goring the Roman wolf. See plates 3 and 8 in A. Alföldi, *Die Struktur des voretruskischen Römerstaates*, Heidelberg, 1974. Instead it is perhaps more likely that *lupus* is the genuine Latin reflex of PIE **lupo-* "dog-like animal". Cf. Aves. *urupi-* "dog" < **lupi-*, etc.²⁸. In any case, whatever may be the correct account of Latin *lupus*, no serious and compelling phonological argument can be drawn from a word whose meaning made it particularly liable to tabu deformations and replacements.

B. Roots of the shape **uekʷ-* / **ukʷ-*

i. **uekʷ-* / **ukʷ-* "speak"

The Greek reduplicated aorist εἶπον "I said" < **e-uekʷom* = Skt. *āvocam* "I said" could have had its labiovelar restored at any time on the basis of the *-s*-stem noun (ῥ)ῆπος "word" since the etymological connection between εἶπον and ῆπος was never obscured. The Greeks, no doubt, felt the *figura etymologica* of the idiom ὥς ῆπος εἶπεῖν "to exaggerate a little", e.g., (Aesch. Pers. 714 etc.).

ii. **uegʷ-* / **ugʷ-* "wet"

The most difficult apparent counter-example is the case of Latin *ūvidus* "wet" and its derivatives. But this too is only an apparent counter-example. According to W-H, *ūvidus* and its family are to be derived from a root **uegʷ-* "wet"²⁹. The labiovelar is established by ON *vokva* < **uogʷeh₂* "wetness". But this form also shows that the real full-grade of this root was **uegʷ-*. This is confirmed by OIr. *fíal* "urine" < **uogʷlo-*. Thus the labiovelar could easily have been restored in the zero-grade **ugʷ-*. A pre-form **ugʷ-ido-* with a restored labiovelar, would become in Latin **uuido-* and then by syncope *ūidus*³⁰. From *ūidus* a hyperarchaic *ūvidus* could have been created.

²⁸ See POKORNY, p. 1179.

²⁹ W-H, II, p. 849.

³⁰ I have reconstructed the pre-form of Latin *-idus* as **-ido-* on the basis of *gelidus* "cold". As Alan NUSSBAUM has pointed out to me, a pre-form **gel-edo-* would have given Latin **gelidus* since *l* was velar before *e*, cf. *Herculēs* < **Herclēś* with the anaptyctic vowel *u*. The *e* of Umbrian *kaleṛuś*, *kaleṛsu* "cal(l)idos", "with a white spot on the forehead" = Latin *calidus* (Plt. +) "id." is hardly decisive, since *e* is sometimes written for *i* in Umbrian. See MEISER, p. 43. As for Latin *solidus* "solid" CIL I.1529.12, this too is ambiguous

It is also possible that *ūdus* and the hyperarchaism *ūvidus* could be the regular outcome of **ue/og^h-ido-* with full-grade in the correct position. For the proposed syncope and its result, cf. *brūma* "the shortest day of the year" < **mreghuimo-* or **mreghuismo*.³¹

It is, indeed, difficult to decide whether a full- or zero-grade should be expected in any given **-ido-* formation. On the one hand, one finds clear full-grades in synchronically motivated forms like *rūbidus* "red". On the other hand, since **-ido-* seems in some instances to be the Latin replacement of a PIE CALAND suffix **-mo-* e.g. *crūdus* "raw" < **kruuīdo-* < **krub₂-ido-* "raw" vs. Aves. *xrūma-* "raw", *nūdus* "naked" < **ne/og^h-ido-* vs. Hitt. *nekuma(nt)-* "naked", Aves. *magna-* "naked" by metathesis from **nagma*.³², one would not be surprised to find the zero-grade characteristic of adjectives in **-mo-* in at least some archaic **-ido-* formations.

in the light of such archaic spellings as *tempestatebus*. Perhaps the strongest evidence for original *-edo-* is Grk. μακεδνός (Hom. +) "tall". This adjective seems to be a thematization of the *-n*-stem Μακεδον- "Macedonian" which may be analyzed, following PETERS, as an individualizing *-n*-stem derivative of an adjective **-ēdo-*. The suffix of this inferrable adjective **mak-edo-* from the Calandish root **mak-/māk-* (cf. μήχος (Hom. +) "length", μακρός (Hom. +) "long, big", μῆκιστος (Hom. +) "tallest" would be exactly comparable to the Latin CALAND suffix *-ido-* if from **-edo-*. See PETERS' discussion, p. 178 n. 131. Nevertheless I have opted for the reconstruction **-ido-*.

³¹ Secondary sequences of *-euC-* seem to have become *-ūC-* in both initial and non-initial syllables. Other examples are *nūdus* < **neg^h-ido-* (or **nog^h-odo-*, cf. Gothic *naqaps* "naked") and *exclūdō* "I deny access to" < **eks-kleudō* < **eks-klaudō*.

The pre-form underlying *brūma* is unclear. On the one hand, one might reconstruct **mreghui-mo-* not a superlative, but simply a positive "the short one". On the other hand, one might reconstruct a superlative **mreghuismo-* provided that the syncope of **euiC* < **eghuiC* was before the loss of *s* with compensatory lengthening in the sequence **VsDV-*, and thus that the development was **mreghuismo-* > **breuismo-* > **breusmo-* > **brūmo-* and with substantivization **brūma*. This chronology is supported by the examples of *iūglans* (Cic. +) "walnut" < **diūzglans* < **diousglans* < **dionesglans* originally "Jupiter's nut" presumably a calque on Grk. Διὸς Βάλλανος (Thpr. +) "sweet chestnut" and *audio* "I hear", if from **auz-diū* < **auiz-diū* cf. Grk. αἰσθάνομαι < **āfisthānomai* "I perceive", Ved. Skt. *āvih* "apparent". In these two cases, however, the **u* is not from a labio-velar.

³² SCHINDLER has suggested in lectures at the University of Vienna 1991 that the surprising full-grade in **neg^h-mo-* may be ascribed to the NARTEN characteristics of this root. Cf. Lith. *nuōgas* "naked" < **nōg^h-os*.

The verb *ūvesco* "be wet", only attested a few times³³, and the noun *ūvor* "wetness" (hapax)³⁴ must have been formed secondarily to *ūvidus* on the model of *rūbidus* "red" : *rubesco* "be red" : *rubor* "redness".

It is also worth mentioning a third conceivable possibility: *ūvidus* etc. are derived not from **uegʰ-* at all, but from the root **ueh₁-/uh₁-* also meaning "wet". This root is found in Vedic *vár* n. (disyllabic) "water", Aves. *vār* "rain", ON *ūr* n. "water", and Latin *ūrīna* "urine" and *ūrīnor* "to dive" (*est mergi in aquam* "it means to be plunged into water" Varr. L.L. 5, 126) and, according to WATKINS, in Luvian *wa-ar* "water", and Old Irish *fír* "milk"³⁵. **uh₁-ido-* would regularly become **uīdo-* > *ūdus*. Cf. *crūdus* < **kruu₂-ido-* < **kruh₂-ido*³⁶. The explanation of *ūvidus* etc. would be as before.

But, against this hypothesis one may argue that the root **ueh₁-/uh₁-* has no evidence for a CALAND system, whereas **uegʰ-/ugʰ-* clearly does. And since the suffix **-ido-* is the productive CALAND suffix in Latin, it is more plausible to suppose it was suffixed to the well established CALAND root **uegʰ-/ugʰ-*.

On the other hand, it does not seem impossible to derive *ūmor* "moisture" (Enn. +), *ūmidus* "moist" and *ūlīgō* "waterlogged ground" (Cato +) from the root **ueh₁-/uh₁-*. The family of *ūmor* is supposed by W-H to be derived from a lost adjective **ūmos* "moist"³⁷. Although W-H cite no par-

³³ Lucr. 1.306; Hor. S. 2.6.70.

³⁴ The existence of *ūvor* is particularly suspected since it is clearly invented in the service of Varro's etymology of *uua*: *uuae ab uvoire* L.L. 5.104.

³⁵ Calvert WATKINS, Two Anatolian Forms, in FS HOENIGSWALD, p. 399-404.

³⁶ F. MEZGER, KZ 62, 1935, p. 22.

³⁷ W-H, II, p. 815. Perhaps this adjective is not quite lost in Italic. R. SCHMITT-BRANDT, Zwei verkannte Reklametexte aus Latium, in FS MEID, p. 327, following PISANI has seen this word in the well-known Faliscan text (VETTER 242) inscribed on a drinking vessel which he reads: *pro pramod pramed umom pramod pramed umod* etc. He interprets this to mean "before lunch (*pro pramod* cf. Latin *prandium* "lunch") first of all (*pramed*) juice (*umom*), after lunch (*pramod*) first of all (*pramed*) juice (*umom*)!" In other words "Drink all the time". This seems to me plausible and quite in tune with the Faliscan Weltanschauung expressed in another well-known Faliscan inscription (VETTER 244) *foied vino pipafō cra carefo* "Today I'll drink wine, tomorrow I'll have none." Incidentally VETTER 242 is quite probably meant to be poetry. The meter + -, + -, + - (where + stands for a stressed syllable and - for an unstressed syllable) and the alliterative pattern, i.e. C₁, C₁,

allel for the derivation of an -s-stem substantive from a thematic adjective, one might note the parallel of Latin *squālus* "unkempt" (Enn. scen. 311), *squālor* (Plautus +) "dirtiness", *squālidus* (Enn. +) "filthy"³⁸. If W-H are correct in this, one must ask what are the possible sources of **ūmos*?

W-H suppose that **ūmos* is from either **ūg^ssmos*, **ūg^semos*, or **oug^ss-mos*. The last reconstruction can certainly be eliminated since it requires an unparalleled neo-full-grade. But one might rewrite the first two reconstructions **ug^ssmos* and **ug^si/emos*, both of which would adequately account for **ūmos*. For the -s-extended root, one could compare Skt. *uksati* "sprinkles".

Yet there are some facts which, to my mind, favor the derivation of **ūmos* from **uh₁mo-*. First, it should be noted that *ūmidus* etc. is not an exact synonym of *ūvidus*³⁹. That which is *ūmidus* has some moisture to it, but that which is *ūvidus* / *ūdus* is permeated with moisture. Thus in Old Latin, at least, *ūmor* can refer to the soggy ground of a swamp, e.g. Pacuv. trag. 203 *stagnorum umorem*. *ūmectus* is applied by Cato Agr. 40.1 to damp places suitable for growing elms, and *ūmidus* can mean "sappy" e.g. Cic. Verr. 1.45 *ex lignis viridibus atque umidis* "from green and sappy wood". This distinction was still felt by Seneca nat. 2.25 *cum sint (nubes) umidae, immo udae* "when clouds are moist, nay rather soaked". On semantic grounds one would therefore prefer to explain *ūligō* as a derivative of the family of **ūmos* rather than as a 'Sabine' derivative from a pre-form **ug^sid(o)*⁴⁰. This is further supported by the parallelism **ūmos*: *ūmidus*: *ūligō* and *fūmus* "smoke": *fūmidus* "smoky": *fūligō* "soot". Since the formation *fūligō* has external parallels (Skt. *dhūli-* f. "dust", Mlr. *dūil* "desire" (for the meaning cf. Θυμός "desire,

C₁ is certainly related to the meter and alliterative pattern found in some South Picene inscription e.g. *Tetis tokam alies* "the tomb of Titius Allius".

³⁸ Alan NUSSBAUM compares Greek πηρός (Hom. +) "disabled" vs. πῆρος -εος "loss of strength" (πᾶρος Alc.). Another example may be δολι-χός (Hom. +) "long" < **dolh₁i-gho-* vs. ἐνδελεχής (Pl. +) "perpetual" < **en-delh₁ghes-*. Cf. Aves. *drājah-* "length" < **dleh₁ghos-*. Of course the great variety of allomorphs occurring before **gho-* makes this example somewhat more uncertain. Examples of this process are also found in Slavic, e.g. OCS *ljuto -ese* "terrible thing" < OCS *ljutz* "terrible", OCS *divo -ese* "miracle" < *divo* "wild". See ARUMAA III, p. 44.

³⁹ Despite Varro L.L. 5.109, *uvidum enim quod humidum "uvidum"* is the same as "*humidum*".

⁴⁰ As W-H, II, p. 811 do, following CONWAY, IF 2, 1892-1893, p. 166.

will"), Lith. *dūlis* "mist" < **dhub₂li-*) whereas *ūlīgō* has none, one may suppose that *ūlīgō* was created on the analogy *fūmus*: *fūlīgō* :: **ūmos*: X, X = *ūlīgō*⁴¹. Much less likely, to my mind, is an inherited **uh₁li-*. The reconstructable **ūmos* can, following PISANI, be compared to Lithuanian *ūmas* "quick", but in East Auks. and Žemait. dialects still with the meaning "fresh, not dried out"⁴². Since no derivative of the root **ueg^h-/ug^h-* could possibly yield Lith. *ūmas*, one is led perforce to reconstruct **uh₁mo-* as the ancestor of both the Latin and Lithuanian forms. Finally, if one accepts that *ūmidus* is a derivative of **uh₁mo-* one can easily explain the unetymological *ū* of *ūvidus*, without recourse to the theory of hyper-archaism, as a simple contamination with the *bedeutungsverwandt* *ūmidus*.

To sum up, there are numerous possible scenarios to account for the apparent counter-example of *ūvidus*.

C. 'Schwebeablauting' Roots

i. **h₁ueg^hh-* / *h₁ueg^hh-* "speak solemnly"

The root **h₁ueg^hh-*, as is well known, happens to be attested only in the Schwebeablauting form **h₁uog^hh-* in the languages which establish the final labiovelar: Latin *voveo* "I vow", Umbr. *vufru* "votive", *vufores* "consecrated"⁴³

⁴¹ This analogy may have worked when there still existed an adjective *fūmus* "smoky" beside *fūmus* "smoke". This adjective may be inferred from Lith. *dūmai* "smoke" with actual paradigm 1 which points to a Proto-Balto-Slavic barytone accent. This may suggest that the accent of Lith. *dūmai* is the result of a nominalizing accent shift. Cf. Grk. λευκός 'bright' vs. λευκος 'name of a fish', ie. "whitefish". Skt. *dhūmá-* "smoke", on the other hand, would then show nominalization without accent shift.

⁴² V. PISANI, *Rund im Lith. ūmas*, in FS KNOBLOCH, p. 307, and FRAENKEL LEW, p. 162. Cf. also *ūmiena* "fresh raw meat".

⁴³ I also find PETERSSON's suggestion (PBB 38, 1912, pp. 322-323) that OE *wōgian* "to whet" is from **uog^hheh₂ie-* rather plausible. The co-occurrence of a verb formed with a strengthened *ō* grade root and the suffix *-eh₂ie-* besides an *o* grade iterative with the suffix *-eie-* in Latin *voveo* is paralleled by Grk. πωτάομαι "I fly about" vs. ποτέομαι "I fly here and thither". Yet his proposal that **g^h* < PIE **g^hh* lost its labiality before a Germanic *ō*, seems rather unlikely. **h^h* < PIE **k^h* was clearly retained before *ō*. Cf. e.g. OE *hōsta*, OHG *hwnosta* "cough" < **k^heh₂s-*, skt. *kāśate* "he coughs" and with no convincing etymology Gothic *hrota* "threat". Instead, I would suggest that the labiovelar was regularly lost in, for example, the root aorist **h₁eugh-to* (G. Aves. *aog'dā*, Ep. Greek εὔκτο) and in Germanic the delabialized form was generalized to the entire verbal paradigm. As

D. The Common Occurrence of Velars after *u*-

Another piece of evidence pointing to the validity of this rule is the common occurrence of velars after *u*, e.g. **leuk-* "shine" (Skt. *rocáyati* "he kindles", Greek λευκός "bright"), **iugom* "yoke" (Skt *yugám*, Grk. ζυγόν), **h₂eug-* "shine" (Alb. *agim* "dawn", Grk. ἀνγή "light of the sun"), **dhugh₂-tēr* "daughter" (Skt. *dubhitā*, GAves. *dug^odā*, Grk. θυγάτηρ). Examples can be multiplied at will. It is quite possible that some of these velars were originally labiovelar, though this will probably always remain unprovable.

4. The Refashionings of **h₂iū-gi(h₃)-s*

There seems to be no serious objection to supposing that PIE **h₂iū-g^hi_{h₃}-s* would have regularly become Late PIE **h₂iū-gi(h₃)-s*. But **h₂iū-gi(h₃)-s* has not survived anywhere entirely intact. In each language where reflexes are attested they have been to some extent renewed.

A. Latin *iūgis*

In Latin, PIE **h₂iū-gi(h₃)-s* would have regularly become **iūgis* with a short first syllable. There are a number of conceivable explanations for the long vowel. For example, one could assume that **(h₂)iū-* has been replaced at some point in the pre-history of Latin by **(h₂)ieu-* on the basis of the comparative and superlative **(h₂)ieu-iōs* and **(h₂)ieu-isto-*. The onetime existence of such full-grade forms in Italic is supported by the Umbrian fifth declension

for the semantics, one might note the Latin idiom Ov. Met 14.35: *ut tua sim voveo* "I vow to be yours", Calvert WATKINS points out the semantic parallel of *spondeo* "to promise solemnly" and "to contract to give or take in marriage".

Another similar set of forms is the family of the root **h₂ueg^hh-* / **h₂ugh-* "to pierce". A labiovelar is clearly shown by Greek ὄρνις (Hesych.) "ploughshare" < **h₂uog^hh-nis* with failure of a laryngeal to vocalize adjacent vowel to -o-. On the other hand, Hittite 3s. *h₂uekzi*, 3pl. *h₂ukanzi* "slaughter" can only be explained as having generalized the delabialized stop which arose phonologically in the zero-grade plural, i.e., *h₂uk-* < **h₂ugh-*. This analysis was first proposed by B. COP, RHA 13, 1955, p. 69, who, however, thought that the dissimilation was an inner-Anatolian development. The other members of this family, OP *ava₂jam* "I poked out", OPruss. *wagnis* "ploughshare", Latin *vōmer* "id.", OHG *waganso* "id.", etc., are rather more.

iovie- "youth" which seems one way or another to have been formed after a primary comparative **iouiōs* and the probable superlative *Ioviste* (Fest. p. 105 M). = Skt. *yavistha* first identified by Watkins. It is also possible to imagine that already in PIE the first member of **h₂iū-gi(h₃)-s* was replaced by a directive **h₂iūh₂e*⁴⁴. **h₂iūh₂e-gi(h₃)-s* would have yielded **iūuagis* and then by syncope *iūgis* (cf. *crūdus* < **kruūido*). One might also think to compare the long *u* of Latin neuter *-u-* stems if this can be considered of any antiquity. Further scenarios could probably be imagined.

B. Germanic **ajuki-*

In Germanic **h₂iū-gi(h₃)-* would have regularly become **iuki-*. One cannot, however, simply say that Germanic has replaced the reduced compounding form **h₂iū-* with a simplex **aju-* < **h₂oju-*, since intervocalic *i* was

⁴⁴ As Jay JASANOFF has suggested to me, the directive case may be reconstructed as **h₂e(i)*. This is most directly reflected in Greek adverbs like *κατά* "downward" < **kat-h₂e* (with unaspirated stop presumably by analogy with *κασι-* < **kati-* preserved in *κασιγνήτος* "brother"), *ἀνά* "up(ward)", and with added particle *i* *χαμαί* "to the ground" < **dhǵhmp-h₂ei*. The directive morpheme, when added to the thematic vowel, would, in the first instance, have given **o-h₂e*. This sequence then became by a PIE apocope rule **-oh₂*. Cf. the first person singular primary thematic ending **-oh₂* < **o-h₂e*, and the thematic nominative-accusative dual ending **-oh₁* < **o-h₁e*. It is this thematic form of the directive morpheme **-oh₂* which gave the Hittite directive case ending *-ā*, e.g. *aruna* "to the sea" and which was apparently generalized to all paradigms thematic and athematic, as well as to the directional adverbs like *anda* and the infinitive-supines like *ad-anna*. In the case of the directional adverb, this was particularly easy in that they were paradigmatically related to 'locative' adverbs like *andan*. And these latter were synchronically indistinguishable from neuter thematic nouns, as STARKE, p. 133 has shown.

H. Craig MELCHERT has pointed out to me that the *o*-vocalism of the directive case is supported by the evidence of the Lycian infinitive in *-ne*, e.g., *tane* "to put", originally the directive case of a verbal noun, since Proto-Anatolian **o* > Lycian *e*, but Proto-Anatolian **a* > Lycian *a*. See H.C. MELCHERT, *Relative Chronology and Anatolian: the Vowel System*, in *Rekonstruktion und relative Chronologie*, ed. R. BEEKES, Innsbruck, 1992, pp. 43-44. It is interesting to note, however, that Lycian seems to have three infinitives ending in *-a*: *erijeina* 29,7 in MELCHERT's Lycian Lexicon, *tāna* 58,4 "to put", and *zxxāna* 44a, 54 "to fight". Could these have something to do with the original athematic ending **-h₂e*? The absence of a laryngeal reflex is obviously problematic for this account, but there may be ways of explaining this.

In Latin too, the thematized form of the directive has been generalized in forms like *quō* "whither" etc. Cf. the same innovation in Greek *κάτω* "downward" and *ἄνω* "upward".

lost in all positions in Proto-Germanic. Instead, as Guðrún ÞÓRHALLSDÓTTIR has suggested (p.c.), *aju-* may be from *aiwu-* with generalization of the pre-vocalic allomorph **aiw-V-* < **h₂aiu-V-* to all cases including the nominative-accusative. A similar generalization of the pre-vocalic stem form of an *-u-* stem is responsible for the geminate nasal of ON *þunnr*, OE *þynne* "thin". Cf. Skt, *tanú-* "thin". **aiwu-* then became **aju-* with loss of *w* before *u* (cf. Goth. *juggs* "young" < **juwungaz*), but this new intervocalic *j* arose too late for the Proto-Germanic *j*-deletion rule.

C. Avestan *yauuaējī-*

In the case of Avestan *yauuaējī-*⁴⁵ "having eternal life" one may say, descriptively, that the first member of an expected **yu-jī-* < **h₂iū-gih₃-s* has been replaced by the dative of the noun *āiū*, *yaoš*⁴⁶. One may venture to suppose that the second member of the compound **yu-jī-* would have been recognizable as identical with the root noun *-jī-*, still quite clearly preserved in e.g., *ərəžə-jī-* "living honestly". The first member, on the other hand, would have been difficult to relate to the paradigm of *āiū*, *yaoš*, especially since neither the nom. acc. nor the genitive occurs in the meaning "eternity", but only in the sense "life, lifetime". But the meaning of the compound clearly called for a first member "eternal". Therefore the compound was renewed by replacing the semi-obscure first member with dative form *yauuaē*. Since *yauuaē* occurred stereotypically in the phrase *vispāi yauuaē* "for all time", it had precisely the right flavor. The same replacement of the stem of the noun *āiū*, *yaoš* by the dative is seen in the abstract *yauuaētāt-* "eternity"⁴⁷.

⁴⁵ *yauuaējī-* occurs once in the Yasna Haptanḥaiti 39.3 *aməšəng yauuaējīiō yauuaēsuno* "immortal, having eternal life, having eternal advantage" and two more times (Y.4.4., Yt.19.11) in Y.Av. in passages derived from the YH locus. See NARTEN YH, p. 260.

⁴⁶ It is clear that *yauuaē* is synchronically a dative since it occurs repeatedly modified by an unambiguous dative in the phrase Gathic *vispāi yauuē* "for all time" Y.28.8, 40.2, 41.2 etc. On the other hand, nothing rules out the possibility that *yauuaē* was originally a directive **h₂ieiū-h₂e(i)* "unto eternity".

⁴⁷ *yauuaētāt* survives in Pahl. *javēdān* "eternally", > Arm. LW *yavēt* "immer", *yavitean* "in Ewigkeit" (HÜBSCHMANN, I, p. 198) and Modern Persian *jāvēd* "eternal" (HORN, p. 93). It must therefore be considered sprachwirllich. I know of no other traces of the compound *yauuaējī-* in other or later branches of Iranian, although the family of **āiū* does survive, e.g. Oss. *ēmbaj* "person of the same age" < **hamāyu-*, Sogd. **yḥ* "age", Khoresm.

D. Greek ὑγιής

The etymological dictionaries, following DE SAUSSURE, agree in deriving Greek ὑγιής "healthy, sound" from **h₁su-g^hih₃és*, a compound of the adverb **h₁su-* "well" and an *-s-* stem built to the root **g^hih₃*.⁴⁸ The compound is supposed originally to have meant "having a life which is good". Yet this etymology is not unproblematical.

First, one may note that the Greek idiom εὖ ζῶειν which would have to be a descendent of the underlying syntagm from which ὑγιής was supposedly derived does not mean "to be healthy" but rather "to be well-off", "to live in high fashion". Consider e.g. Od.19.78-79 = 17.422-3:

ἦσαν δὲ δμῶες μάλα μυρίοι, ἄλλα τε πολλὰ /

οἷσιν τ' εὖ ζῶουσι καὶ ἀφνειοὶ καλέονται

"There were many thousands of slaves and a lot of other things /

among which they live in high fashion and are considered rich."

and Hom. H. Apoll. 529-30:

οὔτε τρυγηφόρος ἦδε γ' ἐπῆρατος οὔτ' εὐλείμων /

ὥς τ' ἀπὸ τ' εὖ ζῶειν

"Nor is this lovely (land) corn-bearing or well-meadowed / so that one could live well from it."

and Hom. H. Aphr. 105-106 where Anchises requests:

⁴⁸ "life, existence" etc. See ABAEV, p. 134. At first glance one is tempted to compare Khotanese Saka *oškāmjsī* (where <*js*> = /dz/) "eternal" a derivative of *osku* "always" <**āyuskam* (BAILEY, DKS, p. 49). But *oškāmjsī* can have nothing to do with the compound *yauuaēji-*. Proto-Iranian **j* before a front vowel regularly becomes KS <*j*> /dž/ e.g. *jwv-* "life" <**jīw-* <**jīw-* and final long and short *-i-* stems merge in the so-called *-i-* declension, the nom. sg. of which ends in <*ā*>. In fact, *oškāmjsī* cannot be separated from a series of temporal adjectives in *-āmjsī*, e.g. *padāmjsī* "first", *ustamāmjsī* "future", *batādarāmjsī* "past", *paśāmjsī* "autumnal", *thyaauttanāmjsī* "former", *vaysñāmjsī* "present". In view of these facts it becomes clear that *-āmjsī* must be compared to Skt. *-āñc*, Aves. *-aś*, cf. especially AV *adharāñc* "nach unten gewandt, nach Süden", Aves. *apaś* "nach hinten, rückwärts gewendet" (W-D II, 2, p. 135). For the voicing of PIr. **č* after a nasal, cf. *panjsa* "five" <**panča*. The final *i* probably comes from **ika-* (EMMERICK, SGS, p. 314) which perhaps was added too late to have a palatalizing effect.

⁴⁸ CHANTRAINE, DELG s.v., FRISK, GEW s.v. and DE SAUSSURE, MSL 7, 1892, pp. 89-90.

δηρὸν εὖ ζῶειν καὶ ὀρᾶν φάος ἡλίοιο /

ὀλβιον ἐν λαοῖς καὶ γήραος οὐδὸν ἰκέσθαι

"to live well for a long time and to see the light of the sun /

and to reach the threshold of old age."

Second, PIE $*h_1su-$ regularly gives Greek εὖ- e.g. εὖ-μενής "well-disposed" = Skt. *su-mánas* < PIE $*h_1su-menés$ "well-minded". Although the failure of the initial laryngeal to vocalize can be justified⁴⁹, one may wonder why ὑγιής alone escaped analogical restoration.

It seems worthwhile then, to explore the possibilities of DE SAUSSURE's second proposed explanation of ὑγιής. No one these days seems to read past the first paragraph of DE SAUSSURE's note. If anyone did (s)he would see that DE SAUSSURE also suggested that ὑγιής could be compared with Aves. *γᾱuuāēñ-*. It is not suprising that this suggestion has never been taken seriously, since DE SAUSSURE did not spell out the details. One might fill in the gaps as follows:

In Greek, PIE $*h_2iu-gi(h_3)-$ "having a life which is with, of vitality" would regularly have become $*\upsilon\gamma i-$ ⁵⁰. But it seems that Greek sometimes extended root nouns in the second member of compounds with a hysterokinetic -s-stem suffix -ής, and thus $*\upsilon\gamma i-$ became ὑγιής. For a parallel to the re-

⁴⁹ PETERS, *Die Sprache* 32,2, 1986, pp. 365–382, has proposed an ingenious and convincing way to eliminate the problematic initial laryngeal in end-accented compounds. One can hardly deny that such a phenomenon did exist. But one might quibble with the example ἀκαρός (EtM) < $*h_1\eta-k\epsilon\eta h_2\acute{o}s$, since the reconstruction with an initial laryngeal is not certain. First of all, even granting the validity of the BENVENISTEAN root structure hypothesis, it is by no means clear that it applies to particles. One might cite such apparent violations as $*pe/o$ "away" (Hittite *pē*, Slavic *po*), $*de$ "towards" (Grk. -δέ, Aves. -da) etc. It is therefore not necessary on theoretical grounds to reconstruct $*h_1(e)n$. In fact, as Alan NUSSBAUM has pointed out to me, an initial laryngeal would seem to be ruled out for this word by forms like Vedic *jman* "on earth" < $*dh_2ghm-en$. If $(e)n$ had begun with a laryngeal one would have expected $*k\acute{s}aman$ < $*dh_2ghm-h_1en$. See now Helmut RIX's discussion of ἀκαρός which reaches similar conclusions (Nochmals griech. νῆτα/νῆσσα/νᾶσσα, KZ 104, 1991, pp. 193–194.)

⁵⁰ Initial $*h_2i$ became /h/ in Greek, as is shown by the example of ἅγιος "holy" < $*h_2ag-i\acute{o}s$ ~ Skt. *yaj-* "worship", but 1 s. perf. mid. *ijé* where the long vowel is the result $*h_2i-h_2\acute{e}$, as SCHINDLER, Princeton East Coast Indo-European Conference 1986, has shown. Cf. also PETERS, *Sprache* 22,2, 1976, pp. 157–161 on Attic ἱμῖ. What has not been hitherto clear is which initial laryngeals plus *i* became /h/. If DE SAUSSURE's second etymology of ὑγιής is accepted, it becomes clear that at least $*h_2i-$ became /h/.

placement of a root-noun by a hysterokinetic *-s*-stem as the second member of a compound, one may compare the various compounds in *-φυής*, e.g. *εὐρυφυής* "broad-growing" (epithet of barley) (Od. 4.604); *ὑπερφυής* "monstrous", "extraordinary" (Hdt. +) ~ Lat. *superbus* "haughty"; *διφυής* "of a double nature" (Hdt. +) etc. Since there is no Greek simplex **φύος* "being" or any trace of such an *-s*-stem formation anywhere in PIE, these compounds can only be Greek replacements of PIE compounds with second member in **bhuh_s*, i.e. the root noun of the root **bhuh_s* "be, become". Cf. e.g. Skt. *prabhū* "excellent" < PIE **pro-bhuh_s* and also Latin *probus* "excellent in quality" < **pro-bhuo-* < **pro-bhuh_s-o-*. The analogies involved may have been as follows: 1. *-γεν-* : *-γεν-ής* :: *-φν-* : X, X = *-φυής*; 2. **φν-ς* : *-φυής* :: **-γι-ς* : X, X = *-γιής*.

As for the semantic development, "healthy" seems, to my mind, to be a natural development from an original sense "having a life which is with vitality (to it)". Note that in Greek, as opposed to Avestan and possibly also Latin, the first member of the compound has not been replaced by the dative or directive, which as we have hypothesized above was the original locus of the meaning "eternity". Therefore the absence of 'temporal' meaning in Greek is conveniently explained. Furthermore, if the original meaning of the compound was "having a life which is vital", one could understand how the meaning could easily develop to "vital, young". And, in fact, this meaning is attested by the Hesychian gloss *ὑγιᾶ·σῶν·νεαρόν Κρήτες* "safe; young in Cretan". The development of this meaning from **h₁su-g^hih₃és*, although conceivable, seems somewhat more difficult. For these reasons, then, DE SAUSSURE's second alternative seems to be preferable to the standardly accepted derivation of *ὑγιής* from **h₁su-g^hih₃és*.

E. Cypriot <*u-wa-i-se /za ne*>

Another archaic piece of evidence for the collocation of **h₂oiu* and **g^hih₃* may be found in the famous Cypriot expression *νῦαις ζαν* <*u-wa-i-se /za ne*>⁵¹. The meaning of this expression is not really in doubt. It is to be translated approximately "forever and ever". The first member of this phrase

⁵¹ Also suggested already by DE SAUSSURE in the same MSL article mentioned in note 1.

was correctly taken by WATKINS from $*h_2iunai + *s^{52}$. Since WATKINS has not himself given a detailed account of his opinion, it is unclear what exact morphological analysis he is proposing. Presumably, he takes $*h_2iunai$, i.e. $*h_2iu-h_2ei$ as the directive of $*h_2oiu$. For the zero-grade root and suffix, one may compare Grk. χαμαί "to the ground, on the ground" < $*dhghm-h_2ei^{53}$. The -s could be explained as a so-called adverbial -s. More particularly, one might note the frequent occurrence of an added -s in directive adverbs, e.g. Syrac. πῦς "whither" (Sophron 75), υῖς "as far as" (SIG.1, Abu-Simbel). On the other hand, if one chooses to vocalize the final syllabogram <se> as /se/ with a real rather than a dummy vowel, one might compare the Attic-Ionic adverbial suffix -σε. This too has an appropriate directive meaning. Cf. e.g. πόσε "whither" (Hom.); ἄλλοσε "elsewhither" (Hom. +); (ἐ)κεῖσε "thither" (Hom. +).

Yet I cannot follow WATKINS in interpreting <za-ne> as γᾶν "earth" acc. sg. Formally, there is no objection. The spelling <za> for <ga> is well attested on the Idalion bronze. But syntactically and phraseologically, there seem to me to be serious difficulties⁵⁴. WATKINS offers the translation "forever on earth." Presumably this is based upon the modern English idiom *never on earth* as in e.g. *Never on earth have I seen such rudeness!* But the English idiom is not really comparable. *On earth* seems to me to be a so-called 'negative polarity' item. It cannot occur except under the scope of a negative or a WH-word⁵⁵. The sentence **Forever on earth I have seen such rudeness!* meaning "I have always seen such rudeness" sounds to my ear distinctly ungrammatical. Furthermore, even if one grants that such an idiom could exist, one would have to ask how would it be expressed in the case syntax of Ancient Greek? One could expect either a locative dative, or a prepositional

⁵² An opinion reported O. MASSON, BSL 78/1, 1983, p. 277, and PETERS, p. 63. This explanation is far more satisfying than all previous attempts to explain *u-wa-i-se* as a preverb *u* and some form of h_2oiu since the evidence for the preverb *u* in Greek was always shaky, and after STRUNK's article Kyp. (ε)ὐ für ἐπί eine vox nihili? in FS RISCH, it can hardly be considered to exist anymore.

⁵³ One might also compare the directive syntax of Attic εἰς αἰεί (Aesch. +) "forever".

⁵⁴ It seems clear that <za-ne> cannot be integrated into the surrounding syntax. STRUNK attempts to do this, and is forced to assume that <za-ne> is used 'katachrestically' in line 28.

⁵⁵ As in *What on earth do you mean by that statement?!*

phrase $\acute{\epsilon}\nu$ + dative⁵⁶. But I fail to see how an accusative $\langle za-ne \rangle$ could mean anything other than "throughout the earth" or "everywhere". A translation "forever and everywhere" is clearly not wanted in this context.

One is left then with the old connection of $\langle za-ne \rangle$ with βίος "life". But this connection is somewhat more difficult to justify formally now than it was in pre-laryngeal days⁵⁷. The problem lies in the set nature of the root $*g^hi_3-$. One may suppose that Greek inherited besides $*g^hi_3os > \beta\acute{\iota}os$, a feminine $*g^hi_3\acute{e}h_2$. Formally, these would be pair of the τόμος "a slice" ~ τομή "cutting" type, but since PIE had a tendency to avoid adding a thematic vowel to a sequence $-e/oH$, the zero-grade of the root was substituted for the expected o -grade⁵⁸. The existence of such a noun is supported by the Paelignian and Umbrian *bia* "fountain" < originally "the live one". Cf. Note 7⁵⁹. In most Greek dialects a pre-form $*g^hi_3\acute{e}h_2$ could only give $*\beta\acute{\iota}\acute{\alpha}$. Yet it is not clear that this would necessarily have been the outcome in Cypriot. First of all, Cypriot sometimes syncopated sequences of $CiiV$. For example, $*k\acute{e}rdi\acute{a}$ "heart" seems to become $/kordza/$ to judge from the Hesychian gloss κορζία (probably for κορζα): καρδία Πάφιοι, "heart, in Paphian dialect". Another example may be seen in the Cypriot equivalent of πέδιον "flat surface", πέσσον : χωρίον Κύπριοι "place, in the Cypriot dialect", if $\sigma\sigma$ is correctly interpreted as another attempt at spelling $/dz/$. This Cypriot syncope is highly reminiscent of the syncope of $CiiV$ seen in Mycenaean, e.g. *ka-zo* "bronzen" < $*k^balkiio-$. There seems to be no objection to assuming that these two syncopes are in fact one phenomenon dating back to a neighborhoodly relationship between Mycenaean and Arcado-Cypriot. If this is the case, then the syncope of $CiiV$ was before the development of labiovelars to

⁵⁶ Also conceivable is a locative genitive, cf. ἵνα γῆς "where in the world" (Eurip. Andr. 168).

⁵⁷ FRAENKEL IF 60, 1950, pp. 142-144, for example supposed that $\langle za-ne \rangle$ was from $*g^hi_3am$. Whereas acc. sg. βίον was from $*g^hi_3am$ with analogical replacement of $a < *a$. The problems with this are obvious to all who believe in three distinct vocalic reflexes (e, a, o) of the three laryngeals in Greek.

⁵⁸ A phenomenon pointed out to me by Alan NUSSBAUM. For example, from $*roteh_2$ "wheel" (Latin *rota*) is derived by means of the possessive suffix $-o-$ $*roth_2\acute{o}-$ "having a wheel" > $*róth_2o-$ "chariot" (Skt. *ráthah*), not $*roteh_2o-$.

⁵⁹ Possibly, also by Grk. βία "bodily strength", Skt. *jyā* "power". I don't see why these must be from a separate root.

labials, since in Mycenaean syncope is already attested, but the labiovelars are still unchanged. In fact, even if the Cypriot and Mycenaean syncope cannot be connected, one need only assume that the Cypriot syncope was before the development of labiovelars, and the development of labiovelars was a very late Cypriot specific change since Cypriot and the closely related Arcadian dialect do not agree in all details. Therefore one would expect that a labiovelar before $*i$ whether of PIE origin or from syncopated $*iiV$ should have the same outcome in Cypriot, i.e. the labial element should be lost and the remaining velar should be palatalized. One would therefore expect $*g^hi_3\acute{e}h_2$ to become $*g^hi_3\acute{a} > *g^hi_3\acute{a} > *g^i_3\acute{a} > *dz\acute{a} < za >$.

It seems then that $<za-ne>$ can be interpreted as the phonologically regular outcome of $*g^hi_3\acute{a}m$ in Cypriot. Syntactically, the whole phrase $\upsilon\phi\alpha\iota\sigma(\epsilon)\ \zeta\alpha\nu$ can be interpreted as an asyndetic combination⁶⁰. $\zeta\alpha\nu$ may be interpreted as an accusative of extent of time, "throughout life, for a lifetime". The whole phrase might be translated "forever and a lifetime". Compare the English idiom *forever and a day*. Or "for a lifetime" might have developed the sense "forever". The whole expression might then be translated "forever and ever". Cf. the biblical Hebrew idiom *le'olam va'ed* "forever and ever". In either case the PIE compound $*h_2iugih_3s$ lurks somewhere in the pre-history of the expression⁶¹.

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⁶⁰ As has been pointed out by FRAENKEL IF 60, 1950, pp. 142-144, asyndeton is not uncommon in the Cypriot inscriptions. e.g. $\zeta\tilde{\omega}\ \sigma\tilde{\omega}$ "I am alive and safe".

⁶¹ I have been tempted, as was DE SAUSSURE, to see a further trace of the collocation of $*h_2oiu$ and $*g^hi_3$ in the Epic adjective $\alpha\acute{\iota}\zeta\eta\acute{o}\varsigma$ "vigorous, in the prime of life". The meaning is quite appropriate. $-\zeta\eta\acute{o}\varsigma$ could be somehow or other from $*g^hi_3\acute{a}yos$, but I can think of no convincing way to derive $\alpha\acute{\iota}$ from any form of $*h_2oiu$. There is simply no easy way to eliminate the $*u$, and a root-noun $*h_2ai$ "life", though perhaps speciously attractive to Nostraticists, is unsupported by comparative evidence and would be typologically surprising, since none of the acrostatic neuter $-u$ -stems occur beside root-nouns. Nevertheless, I still believe that this etymology of $\alpha\acute{\iota}\zeta\eta\acute{o}\varsigma$ may ultimately prove correct. Or could this $*ai$ somehow be compared to OE *áfor* "sharp", OHG *aivar* < $*aibhro$?

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