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LUBOTSKY'S AND BEEKES' LAWS, PIE **(H)r-*, **(H)i(V)-*, **a* AND SOME OTHER LARYNGEAL MATTERS

Abstract. A recent bimoraic analysis of the properties of (late) PIE laryngeals supports Rix's theory of PIE *CRHC* (with implications for *CRHV*) in Greek and Beekes' law of laryngeal vocalization following initial resonant. Beekes' difficulties involving PIE **r* are eliminated by demonstrating that Latin and Vedic, unlike Hittite, Greek and Armenian, always distinguish between PIE **rHC-* and PIE **HrHC-*. Lubotsky's partly related law of laryngeal loss in Indo-Iranian is found to be supported by twelve (partly amended) etymologies out of Lubotsky's original fourteen plus one new one. Alternatives are essayed for etymologies containing PIE **a* proposed in refutation of these laws. Accentually conditioned voicing by **h₃* is further promoted.

1. Introduction

Lubotsky's law, so named by Kortlandt (1985a: 193), is a rule of laryngeal loss in Indo-Iranian before contiguous reflex of a PIE media (i.e. a preglottalized voiced stop) when this is followed immediately by one or more consonants (Lubotsky 1981: 136).

Although supported by Beekes (e.g. 1988b: 27) and Schrijver (e.g. 1991: 97) and used by Kortlandt (1985a: 192f.) in supporting his eminently respectable proposition that the traditional PIE mediae became voiced preglottalized stops in a considerable section of the protolanguage, Lubotsky's law does not appear to have been particularly successful. It is completely ignored, e.g., by the editors of LIV₂ (cf., e.g., s.vv. **peh₂g₁⁻¹ n. 2a*, **sueh₂d-* n. 2a, **Red-*). Mayrhofer (1983: 149 n. 109),

¹ As far as possible, all reconstructions, including those from tritectoral sources, will be given in my notation for bitectoral PIE, with *g₁*, *k₁* etc. representing prevelars which develop into palatovelars and pure velars in satem languages and plain velars in centum languages, while *g₂*, *k₂* etc. are backvelars developing into labiovelars and plain velars in centum PIE and plain velars in satem PIE. Labialization of backvelars was positionally determined in PIE and so not phonemic; it became phonemic only in centum languages

while conceding that a part of Lubotsky's material remains worthy of consideration, expressed reservations on the grounds that the material was probably not all to be explained in the same way and that Lubotsky had posited $*h_2$ in cases where other scholars were happy to assume PIE $*a$. Lubotsky (1989) responded to the latter criticism with a spirited attack on PIE $*a$ based partly on an unashamed assumption of the correctness of what Cavoto (2001: 39 n. 38) has called approvingly Beekes' law. This law states that in word initial sequences of resonant + laryngeal + consonant (i.e. *RHC-*) the laryngeal was "vocalized rather than the resonant" (Beekes 1988b: 22).

Despite an excellent defence of Beekes' law, with a thorough review of the Latin material, by Schrijver (1991: 161-172), this law likewise is scarcely acknowledged by the editors of LIV₂ (cf., e.g., s.vv. $*leh_2d-$, $*sleg_{(1)}$ -, $*sleh_2g_2-$, $*mad-$) even when it is actually appealed to (s.v. leh_2 -/3).

Evidently these two laws combine to offer an alternative reconstruction for several sets of data pointing otherwise to PIE $*a$, which suggests that this alternative and other options should be explored with persistence so that PIE $*a$ is only accepted where its existence is undeniable. The aim of the present contribution is therefore to provide additional supporting argument for these two laws, including a little cleansing, and filling in the more salient gaps in Lubotsky's (1989) attack on PIE $*a$.

2. Beekes' law, *CHRV* in Greek, *HHC-* in Italic etc. and PIE $*(H)r-$

2.1. A particularly insightful feature of Schrijver's defence of Beekes' law is the suggestion that the development is to be explained by the supposition that PIE words did not begin with syllabic sounds (1991: 172). A more general strength of Schrijver's approach is his adoption (1991: 3) of Beekes' (1988a: 59f.) position that there is no hard and fast rule regarding the relative sonority of laryngeals and resonants, by which is meant that there is no automatic preference for resonants to be vocalized over laryngeals when these segments are in contact.²

These bold positions have more recently been given sound theoretical underpinning in the excellent paper of Reynolds/West/Coleman (2000) who show on the basis of current bimoraic syllable theory that the various reflexes of the PIE

(Woodhouse 1998; 2005); absence of subscripts indicates 'precise nature uncertain'. For tritectoral sources g , k etc. will simply indicate palatovelars, g_2 , k_2 etc. labiovelars; $g_{(1)}$ etc. indicates uncertainty in the source (pointing in fact to bitectoral g etc.).

² In conformity with this principle I shall endeavour henceforth to notate resonants in PIE reconstructions, including those cited from other sources, as i , u , r , l , m , n distinguishing vocalic from consonantal realizations only occasionally by means of different symbols or diacritics beneath the letter.

laryngeals in various contexts in various languages require the reconstruction of these segments as metrically weak vowels. In the process these authors expose the fallacies in Cuny's sonority and some other arguments supporting solely consonantal laryngeals (pp. 371, 373, 377f.).

Reynolds/West/Coleman's (2000) answers to some possible objections to their vocalic treatment such as PIE root structure (pp. 376f.) and certain phenomena of Hittite, Armenian, Albanian (pp. 378f.) and Indo-Iranian (pp. 375f.) may not please everybody. In particular, the authors' doubt about the "consistency" of hiatus development – a doubt that arises from their perception of a significant difference between Ved. *tanúas*, with no glide, beside *priyá-*, with glide (pp. 357f.) – seems to be based on a lack of awareness that *tanúas* is simply a conventional, metrically correct transcription of a form the exact transliteration of which in our written texts is *tanvâs*, i.e. a form revealing a contraction normal in the later Sanskrit of those who edited the orally transmitted text. The choice of *tanúas* instead of the equally (or more) correct and certainly more consistent *tanúvas* is no doubt motivated by a perhaps foolish desire to maintain the same number of symbols in the transcription as in the transliteration; *priyá-* on the other hand was never contracted in Sanskrit and so naturally remains uncontracted in the Vedic text and hence presents no problems of transcription associated with metrical correctness. More seriously, the question of Balto-Slavic acuting by laryngeal seems not to be canvassed by Reynolds/West/Coleman at all. In all this it seems to me that there is room for some diachronic perspective within PIE, i.e. it seems useful to suppose that the laryngeals were at some earlier stage generally more consonantal and that reminiscences of these more consonantal characteristics are still evident in some languages and/or environments.

What these more consonantal laryngeals might have been at this earlier stage is still anybody's guess. There is no need to be swayed by Reynolds/West/Coleman's (2000) typological arguments against several proposals for (erstwhile) spirant laryngeals since typology, by and large, argues for what is common whereas individual languages show what is possible. The [+ back] reflexes seemingly indicated in some languages need not point to originally [+ back] phonemes since [+ back] *x* (> *h*) is known to derive from PIE **s* in Slavic, Iranian, Greek etc.; and the pharyngeal phoneme transcribed /ʕ/ is thought to have originated (1) in Egyptian from the voiced apical and interdental phonemes **d*, **z*, **D* reconstructed for Proto-Afro-Asiatic (Loprieno 1995: 31) and (2) in later Aramaic (e.g. Syriac) partly from the Proto-Semitic (PSem.) voiced emphatic interdental /ḏ/ or lateral spirant /ḥ/ (> Arabic, Ethiopic *ḏ*) (Moscati 1969: 27f.).

Reynolds/West/Coleman (2000: 357, 380) find the aspirating and voicing properties fairly commonly ascribed to *h*₂ and *h*₃, respectively, to be consistent with their analysis, though they equate the aspiration with devoicing, which they then find puzzling. Nevertheless these views are compatible with what are probably

the majority views of, e.g., Meier-Brügger (2003: 85, 107), Mayrhofer (1986: 121 n. 101), Melchert (1994: 54f.) and myself, as opposed to those of Beekes (1989: 28; 1995: 148), Schrijver (1991: 3) and Kortlandt (2007b) for whom h_2 is voiced. All the above scholars agree that h_1 was voiceless, h_3 voiced.

It is sometimes said that the voicing ascribed to h_3 is impossible because there were no voicing contrasts in PIE. This seems to beg the question: “What is PIE?”: Hittite preserves something akin to a voicing distinction in its intervocalic stops (Melchert 1994: 53f.), Tocharian preserves traces of the threefold stop system of PIE (Adams 1988: 38) which in other daughter languages overwhelmingly contains and probably preserves distinctions of voice. Presumably the factors that led to these voicing contrasts can also have introduced voicing in (the vicinity of) h_3 .

The Reynolds/West/Coleman (2000: 364-367, 371-372) analysis employs precise experimental data on the realization of syllabic resonants to clear up the question of the double reflexes of PIE *CRHC* sequences in Greek and Armenian, i.e. the Gk. *θνητός* : *θάνατος* problem, essentially supporting the analysis of Rix (1976: 72f.) over that ultimately preferred by Beekes (e.g. 1976; 1988a: 74; 1995: 145f.). I find Beekes’ reservations over the secondary stressing of the zero grade puzzling: not only do the endstressed forms cited by Beekes (1969: 208) in rejection of the same proposal (p. 207) point to the erstwhile existence of mobilia, but Rix is actually able to cite, among other things, the variant members of the originally mobile paradigm of ‘head’ (with implied reconstructions in brackets) Hom. nom. pl. *κάρηνα* < **kárāsna* (< **k₁r_h₂sneh₂*) : gen. sg. *κράατος* < **krāsatos* (< **k₁r_h₂sn(t)ós*) (cf. Ved. *sīrṣā* : *sīrṣnás*).³

2.1.1. The question just aired is related to that of *CRHV* in Greek. Although Reynolds/West/Coleman (2000: 356f and n. 4) warn of the folly of taking a firm position on this, their analysis clearly supports Beekes’ earlier (1969: 216f., 221f.) though later rejected (1988a: 75) solution, viz. *vRv'*, in which the timbre of *v* is controlled by *H* while *v'* may be altered by h_2 and h_3 , depending on what it is (and also further altered by other factors). I think there is room for a better solution than the one somewhat reluctantly adopted by Beekes (1988a: 75). No doubt *CaR(e)* is the best solution for *CRh₁V* in view of the aorists *ἔβαλον* and *ἔταμον* (both with analogical desinence) and *CaR(a)* is clearly the expected solution for *CRh₂V*; but there is no need to extrapolate this result to the examples for *CRh₃V*, viz. aor. 3. pl. (**(h₁e)CRh₃ent* >) *ἔμολον*, *ἔπορον*, *ἔθορον* and aor. 3. sg. (with analogical desinence) *ἔτορε*.

³ In view of the concluding views expressed on this question by Rico (2000:197), it seems likely that the comprehensive review of the data pertaining to it foreshadowed by the latter (ibid.: 166) has been rendered obsolete by the roughly contemporaneous Reynolds/West/Coleman (2000) study.

Against this telling evidence Rix (1976: 74) pits the lone Gk. (Thess.) *Φαλισκῆται* 'be captured, defeated, slain', which is of uncertain affiliation. Kümmel (LIV₂: 679 s.v. **uelh₃-* n. 1) tentatively equates the Greek word with Hitt. *walahzi*, *walhanzi* 'strike'. But the Hittite word must have medial **h₂* (as urged by other scholars, see *ibid.* n. 3; Melchert 1994: 70-73). The Greek word clearly has **h₃* in full grade forms but may well have had **h₃* > **h₂* in the zero grade by dissimilation of the labiovelarity of *h₃* against the double labiovelarity of **ul-* in the cluster **ulh₃*. This **h₂* will have been generalized in Hittite if the two words are cognate⁴ (while, as is already generally proposed, *(-)F)αλ-* has been generalized in Greek). Alternatively we may separate the two words and derive the Greek forms from a root **uh₂leh₃-* with *h₂* consistently vocalized to a by Beekes' law. Either way Rix's item is poor evidence for *CRh₃V*.

To sum up: descriptively, the first vowel in the regular Greek outcome of *CRHV* is that of the usual dissolution of syllabic resonants in Greek except in the case of *h₃* where the laryngeal imposes its own characteristic timbre; *h₁* is, as usual, unable to impose any timbre on an existing vocalic segment while the effect of *h₂* on the first vowel is necessarily vacuous. This proposal is in keeping with the strength hierarchy of laryngeals put forward by Eichner (1988: 131; cf. also §2.2.5 below on *HHC-*). It is perhaps worth noting that the only vowels that are completely resistant to timbre influence by laryngeals seem thus to be *o*, *i*, *u*.

2.1.2. Although Reynolds/West/Coleman (2000) do not specifically mention Beekes' law their analysis provides straightforward justification and/or explanation for it: if in general the laryngeals were more vocalic than the resonants in disintegrating PIE then *RHC-* is simply a special case of *CHC-*. Likewise in longer sequences involving laryngeals and resonants such as *CRHRC* and *CHRHRV* it is the laryngeals that can be expected to vocalize, not the resonants, much as is proposed, or at least seen as possible, by Beekes (1988a: 75) in *CMHMC* sequences, where *M* is a cover symbol for both nasals and liquids. For the parallel *CHMHC* sequences Beekes (*ibid.*: 75f.) proposes vocalization of both laryngeals.

Acceptance of these simple ideas will serve to eliminate some of the confusion still evident in laryngealist thinking. Thus Zehnder (LIV₂: 421), rejecting the idea of vocalization of a laryngeal adjacent to a resonant, allows **med-* or **meh₂d-* as alternatives to his **mad-* only if Gk. *μαδ-* is analogical for ***αδ-* < **ṃd-* or for ***μṃδ-* < **ṃh₂d-* and, preferring reconstruction with PIE **a*, accepts Klingenschmitt's (1982: 219 n. 75) argument that the assumption of a similar analogy in anlaut in three different languages in the case of **mag₁-* is not very

⁴ Conversely an assimilation of *h₂* to the labiality (and voicing?) of *m* in **damh₂-*, resulting in **h₃* in this root in pre-Hittite may be the explanation for the curious disappearance of the laryngeal in Hitt. *damass-/damess-* '(op)press' (see Melchert 1994: 70f.).

probable. This may be so but is nevertheless a little odd given: **(1)** Hock's (1986: 239) proposal of analogical generalization occurring independently at word boundary in the several languages to explain the widespread phenomenon of word final devoicing; and **(2)** that Schirmer (LIV₂: 484) proposes that **plang-* in Gk. *πλάγχθη* and Lat. *plango* has been arrived at independently in the two languages by similar series of fairly extraordinary analogical adjustments; while **(3)** not far away in the same LIV₂ (p. 485f.) Kümmel/Schirmer and Schirmer feel free to claim that *a* in Lith. *plakù, plákti* 'beat, whip' and Lat. *placeō* 'please' is due to vocalization of the laryngeal in **plh₂k-* and **plh₃k-*, respectively. While there may well be useful alternative explanations for these cases, it seems certain that Gk. and Lat. **plang-* are to be derived by simple vocalization of *h₂* in **plh₂ng*.

Further, it is now possible to account for one of Mayrhofer's (1986: 127 n. 118) examples of PIE **a*, viz. **d^halh₁ró-* 'blooming', by using the alternative suggestion for the root reported by Zehnder (LIV₂: 132), viz. **d^heh₂lh₁-*, of which the commonly adjectival, *ró*-suffixed zero grade (Brugmann 1906: 348-352) **d^hh₂lh₁ró-* yields precisely Gk. *θαλερός*, Armenian *dalar* and is not in conflict with Orel's (2000: 181) claim that Alb. pres. 1. sg. *dal*, 3. sg. *del* 'go out' also reflect zero grade.

2.1.3. I think the above proposals also make it possible to clear up some problems with the voicing and desinences of the Greek ordinals *ἑβδομος* '7th', *ὄγδοος* '8th' (beside *ἑπτά* '7', *ὀκτώ* '8'). First, it seems unlikely that an abstract phonological phenomenon such as voicing would be transferred from one ordinal numeral to another in the manner proposed, in varying directions, by, e.g., Rix (1976: 172), G. Schmidt (1992: 210) and Beekes (1995: 216). Moreover, there is an evident difficulty, as G. Schmidt (1992: 211f.) seemed aware, in Rix's proposal that the common vowel of the second syllable of the attested forms *ἑβδομος* and *ὄγδοος* replaced those of **héptamos* and **ógduuos* by analogy, viz. that there is no model for the change. Forms like *τέταρτος* '4th', *ἔνατος* '9th', *δέκατος* '10th' would suggest levelling **a* not **o* in the syllable preceding the thematic desinence, while *πέμπτos* '5th' and *ἕκτος* '6th' might suggest **e* in the critical syllable – possibly this is in fact the explanation for the quality of the vowel in the second syllable of West Greek *ἑβδεμος* that puzzled Waanders (1992: 380) though it seems unlikely that the disyllabic '5th' and '6th' could have had anything to do with the actual rise of a trisyllabic '7th'.

Beekes (1995: 213, 216) derives '8' from the protoform of Av. *ašti-* 'four fingers', which he apparently reconstructs as **h₃ek₁th₃-*; Blažek (1998: 216) notes the importance of the Avestan word as a "bridge" to the correct etymology of '8' which he sees as the dual **h₂ok₁toh₁(u)* of an *o*-stem having the same root as Gk. *ὄκρις* 'jagged point, prominence', *ὄκρις* 'hill-top, mountain' etc.⁵ Why Beekes reconstructs

⁵ This etymology seems as good as any other if not better, but it is unfortunate that Blažek chooses to support it with sloppy typology when he writes: "in languages

a second h_3 in his protoform is unclear since he denies it any role in the voicing found in the ordinal, but I think it is an important factor. The difference in the voicing between cardinal and ordinal I hold to be a matter of accent position (Woodhouse 2008: 22), in other words the attested ancient accentuation of the Greek numerals was essentially established before the laryngeal effect of voicing came into being, '7' and '8' being **septm̄* and **h₂okth₃óh₁(u)*,⁶ respectively, the oxytone of both cardinals being due in some way to a rhythm used in counting and being subsequently generalized in the ordinals in many languages; '7th' and '8th', partly following Rix, being at an early stage **séptmh₂o-* and **h₂ókth₃uh₂o-*, respectively, perhaps retaining original barytonicity. In the ordinal suffix, h_2 before o was already unstable although the laryngeals had not yet completely merged in this environment: in '8th' this $*h_2$ was first assimilated to the preceding h_3 and subsequently lost; in '7th' it was converted to h_3 in sympathy with the temporary $*h_3o$ desinence of '8th' while pt in the sequence $ptmh_3$ became voiced, as did, e.g., k in kmh_1 in **dékmh₁nos* > aor. part. *δέγμενος*. Finally **sébdmh₃os* > *ἑβδομος* with the natural reflex of CRh_3V discussed above (§2.1.1) and **h₂ókth₃uos* > **ὄγδοφος* > *ὄγδοος*.

where the laryngeals & pharyngeals are familiar (e.g. Semitic) the rules of incompatibility exclude the presence of two $*\text{ʕ}$'s in one stem" (1998: 212). This seems a rash statement even for reconstructed Proto-Semitic which appears to contain a number of trilateral roots with $*\text{ʕ}$ as second radical which would have been subject to gemination in the D-stem, such as **bʕd* 'be distant', *bʕr* 'void dung', **gʕr* 'roar', **zʕq* 'cry out', **zʕr* 'be thin', **wʕl* 'climb', **lʕb* 'play, take delight' etc. (items gleaned from Koehler 1958 s.v.v. except for **wʕl* see **yʕl*). Perhaps Blažek has in mind that the gemination was later eliminated in certain languages, such as Biblical Hebrew, which, incidentally, in Isaiah 19.14 preserves the D-stem passive (pu'al) participle of the root **ʕʕn* 'pierce' (ibid. s.v.), a root also found in Arabic (though not, apparently, in the D-stem). In a real Semitic language like Arabic there are upwards of twenty roots containing two ʕ . Most of these, to be sure, are quadrilaterals formed by reduplication, such as *raʕraʕa* 'come into the prime of life', *šaʕšaʕa* 'mix with water', *naʕnaʕ* 'peppermint', *ʕasʕasa* 'grow dark', *ʕanʕanāt* 'traditions'; some are clearly onomatopoeic, such as *ǧaʕǧaʕa* 'clamour', *ʕaǧʕaǧa* 'roar', *ʕaqʕaq = qaʕqaʕ* 'magpie'. A few are so-called doubled (or double 'ayin) roots (i.e. having identical second and third radicals): *raʕāʕ* 'rabble, mob', *daʕʕa* 'rebuff', *šaʕʕa* 'disperse'; the first of these may be connected with Hebrew *raʕ* 'of poor quality, inferior' < **raʕʕ* (ibid., s.v.) and so go back to PSem.; the last of them has Dt-stem forms such as *tašaʕʕuʕ* 'radiation' with three ʕ in the same stem (Arabic items taken from Wehr 1971 s.v.v.). If Blažek is in fact referring to Semitic root constraints, rather than stem constraints, then it may be noted that there was a general PSem. constraint against identity of the first and second radicals of trilateral roots while identity of first and third radicals was rare (Moscati 1969: 74), these limitations not being specific to 'ayin, which as we have seen, seems to be found doubled in at least one PSem. root, viz. **rʕʕ* 'be inferior'.

⁶ The question of whether the root of '8' is **h₂ok₁t-* or **h₃ek₁th₃-* seems no longer to be decidable on the basis of Lycian as Blažek (1998: 211) intends, see Kloekhorst (2006: 105).

2.2. The only real weakness in Schrijver's approach as it affects Beekes' law is his acceptance (1991: 13f., 15f.) of Lehmann's theory that in PIE anlaut **r-* was impossible.⁷ This should mean that there are really no examples of Beekes' law for the case where *R-* = **r-*. Yet Beekes (1988b: 39, 41) in developing his law spilt a certain amount of ink on the subject of putative **HrHC-* and suggested "that in Italo-Celtic and Germanic the development *RHC-* [read, surely, *HRHC-* – RW] > *RaC-* may have occurred *after* the loss of the initial laryngeal" [emphasis as in original – RW] (p. 41), while examples of Lat. *rāC-*, if they were not counterexamples, "might have full grade" (p. 41). Schrijver (1991: 314) adopts these ideas with more gusto, relegating the examples with the long vowel to the "unreliable" category.

I think there is no need for this complexity. A decade and a half ago Melchert (1994: 67) proposed the following development: PIE **h₁r-* > Proto-Anatolian **r-* > Hitt. *ar-* – in other words, according to Melchert the putative PIE **h₁-* was no longer required to explain the Hittite prothetic vowel, or, to put it another way, Hittite did not inherit an intolerance of anlaut **r-* from PIE but developed this intolerance independently. Perhaps not surprisingly, Kloekhorst (2006: 78-81) agrees with this but still claims (p. 78 n. 9) that PIE nevertheless did suffer from the same intolerance.

Something like Melchert's view of Hittite *ar-* emerges in relation to Greek *ēp-* in LIV₂ (p. 502 s.v. **(h₁)reid-* n. 1 and pp. 496-509 passim), viz. that in the absence of other evidence Gk. *ēp-* before vowel may arise indifferently from either **r-* with prothesis or from **h₁r-*. In other words, pre-Greek experienced a phase of intolerance to anlaut **r-* during which, no doubt, an anaptyctic **h₁* arose before every **r-* inherited from PIE. Doubtless something similar happened in pre-Armenian, so that a constellation like Arm. *erek* 'evening', Gk. *ἔρεβος* 'a place of nether darkness' (e.g., Beekes 1988a: 76) is no proof of PIE **h₁-* (cf. a similar suspicion in EWA 2: 426 s.v. *rajas-/2*). Thus in both these languages, as in Hittite, intolerance of anlaut **r-* is an independent development – perhaps contingent on a shift of **r* from retroflex approximant to flap or trill – and not inherited from PIE. This disposes of the theory that PIE anlaut **r-* was impossible.

A straightforward solution to the problem of Beekes' apparent twin reflexes in Latin then beckons, viz. PIE **rHC-* > Lat. *raC-* in accordance with Beekes' law, while the change PIE **HrHC-* > Lat. *rāC-* is a special case of **CrHC-*.

A comparison of the more certain of Beekes' (1988b: 39) Latin data for **(H)rH-* with the corresponding reconstructions in LIV₂ and Pokorny (1959) seems to bear out this conclusion (the more controversial material will be attended to in

⁷ Schrijver (1991: 16) seems to foreshadow a refusal to enter into the question of PIE **(H)i-* and Greek initial ζ vs. spiritus asper but ultimately (pp. 318f.) achieves a brilliant resolution of the associated but more important question of **HiHC-* in Latin in a way that can, on the face of it, be extrapolated to include Greek (see §3 below).

due course). Thus for the root of Lat. *ratus* 'reckoned, calculated etc.', Kümmel (LIV₂: 449) reconstructs **reh₁-* and Pokorny (1959: 59) **rē-/rə-*, and for Lat. *ratis* 'raft, float' (beside *rētae* 'trees growing on a riverbank') Pokorny (1959: 866) reconstructs the root **rēt-/rōt-/rət-*; i.e. both these items are uniformly reconstructed with initial **r-*. On the other hand if Lith. *yrù, irti* 'disintegrate, fall to pieces, come undone' is related to Lat. *rārus* 'of loose texture, scattered, thin, scanty, rare', then we can happily accept that the latter reflects **h₂rH-*, the zero grade of Kümmel's (LIV₂: 271f.) root **h₂erH-*, Pokorny's (1959: 332f.) **erā*.

Thus PIE **rH-* and **HrH-* are distinguished in Latin, which means that Beekes' hypothesis of early loss of *H-* in *HRHC-* appears to be as unnecessary in that language for *R = r* as for *R = N*. (For the case of *R = I* in Latin see §3 below; for some information on the situation in Celtic and Germanic see §§2.2.3 and 2.2.4 below, respectively.)

A distinction between **rH-* and **HrH-* is also observable in Vedic. Thus of Beekes' (1988b: 43) protoforms **HrH-éi-* and **Hrh₁-etno-* for Ved. *ilāyati* 'be still, come to rest' and *rātna-* 'treasure', respectively, the latter can now be emended to **rh₁-etno-* and the connection of *rātna-* with Lat. *rēs* etc. maintained. Other examples of certain **HrHC-* in Vedic discussed by Beekes (1988b: 39, 41), showing, as in Latin, the same development as **CrHC-*, are (i) *īrmá-* 'arm, fore-quarter' < **h₂rH-mó-* beside full grade **h₂erH-mo-* in Lat. *armus* 'top part of upper arm' etc. (EWA 1 s.v. 205f.) and (ii) *īrmá* 'at rest, stationary', the initial *H-* of which is vouched for by the initial vowel of LAv. *armaē-* (in compounds) 'still, stationary', (cf. Pokorny 1959: 338 s.v. **erā-/rē-/rē-ua-/rō-ua-*; EWA 1: 206 s.v.)⁸

Some other gains from this seemingly newish doctrine bearing on Beekes' law now follow.

2.2.1. We can remove the initial laryngeal from Schrijver's (1991: 257f., 306) protoforms for Lat. *ravus* 'hoarse' (etc. and Gk. *ἐρῶγοντα* 'den brüllenden' if this is cognate), *rabere* 'be enraged' (etc. and Gk. *ἐραμαι* 'desire, love'), *rapere* 'snatch, grab, rob' (and Gk. *ἐρέπτομαι* 'feed on'). We can also be sure Lat. *radius* (possibly **rHd-*) is not connected with Lat. *rādīx* 'root', Gk. *ρᾶδίξ* 'branch' (**urh₂d-*).

2.2.2. An inconsistency in Schrijver's (1991: 298f., 311) derivation of Lat. *rāvus* 'grey, greyish yellow' can now be rectified. Schrijver, believing **HrHC-* > ***raC-*,

⁸ Less certain is the case of Ved. *ūrj-* 'power' which may be connected as **u(eo)rh₁g₁-* with GA. *varəz-/varz-* 'invigoration', Gk. *ὄργᾶω* 'swell' (EWA s.v.; cf. Beekes 1988c: 113) or, generally following Sihler (1977) supported by Scharfe (1985), as **h₂r(é)h₁g₁-* with Rivedic (RV) *rāj-* (only nom. sg. *rāj*) 'power; sovereign', Gk. *ἀρήγω* 'protect', *ἀρηγών* 'protector', *ἀρωγή* 'protection', Latin *rēg-* 'king' etc., Strunk's (1987: 386f.) objection to the latter etymology being based chiefly on ignoring the anlaut *h₂* that both Sihler and Scharfe also neglected to specify.

prefers a derivation of *rāvus* from **g^hrh₁uo-* (> OHG *grāo* ‘grey’ etc.) rather than from **Hrh₁uo-* (cf. **Hreh₁-* in Skt. *rāmá-* ‘dark in colour, black’, OHG *rāmac* ‘dirty, sooty’), contending that **g^hr-* > Lat. ***r-* because *gradior* provides “no evidence for initial **gh-*”. Yet if *gradior* is a “possible” example of Schrijver’s rule for the non-laryngeal origin of *a* in Latin, viz. **RDC* > *RaDC*, where *D* = PIE (preglottalized) media (Schrijver: 1991: 479, 482-485) then the root final stop of *gradior* must be PIE **d*, which, in the light of PIE root structure constraints, means that the initial stop can only be PIE **g^h*. If *gradior* must have initial **g^h* after all, *rāvus*⁹ must not, i.e. cannot (darf nicht, and not muß nicht = need not). Hence, if the long root vowel of the latter is to be ascribed to initial consonant our best course is to adopt Schrijver’s alternative protoform **Hrh₁uo-*, though our reason for setting up the anlaut laryngeal in this root is clearly not the same as Schrijver’s.

2.2.3. We also have the opportunity of disposing of the curiously isolated Italo-Celtic root **HrHsd-* devised by Schrijver (1991: 310; essentially followed by Kümmel LIV₂: 496)¹⁰ to explain Lat. *rādō* ‘scrape, shave, smooth’, Welsh *rhathu* ‘scrape, smooth, file, rub’, Breton. *raza* ‘shave’, and of reuniting these words with Lat. *rōdō* ‘gnaw’ (<**Hreh₃d-*) while simultaneously applauding Schrijver’s useful removal of OHG *rāzi* ‘raging, wild’ (< **(H)reh₁d-*) from the group.

This reunification of Lat. *rōdō* and *rādō* makes semantic sense since, whatever the chronological distribution of the meanings ‘gnaw’ and ‘scrape’ of Skt. *rad-* may be, the fact that both occur in what seems to be the same root suggests that there is a natural connection between them; moreover the meaning of RV 5.10.1 *rātsi* ‘cut (a road)’ seems to form a point of contact or bridge between the two. For what it’s worth, Mayrhofer (EWA 2 s.v. *rad-*) seems prepared to admit a connection between both Latin words and Ved. *rad-*.

While Lat. *rādō* can now be unproblematically derived from the zero grade **Hrh₃d-*, the root final consonant of the British words requires an explanation. The most straightforward solution, I believe, – bearing in mind (1) that Kümmel (LIV₂ s.v. **Red-*) posits Proto-Indo-Iranian (PII) nasalization of the root, apparently on the basis of some Dardic and Middle and New Iranian forms (for which see Mayrhofer EWA 2 s.v. *RAD*) and (2) the Thurneysen/Kortlandt theory of nasal invasion (see Kortlandt 1988: 390f.; 2005/2006: 1; 2007a: 2) – is to derive the British words from the original nasal-suffix present **Hrh₃d-né*¹¹ much as Pedersen (1909: 114) suggested for Welsh *brathu* ‘stab, goad, sting’ < **b^hrHd^h-né-*,

⁹ Of Leumann’s (1977: 166) examples for the problem this then leaves only *rūdus*, *lūridus* and *lūtum*, seemingly tipping the balance in favour of Agrell’s idea (reported *ibid.*) that *g^hr-*, *g^hl-* > Lat. *r-*, *l-* only before *u*.

¹⁰ Stokes/Bezzenberger’s (1894: 227) **razd* is presumably intended as PCelt., not PIE, in the light of their tentative comparison with OHG *fratōn*.

¹¹ The more commonly attested nasal-infix type is a product of this older type.

making use of the rule given by Pedersen (1909: 158-161) and Lewis/Pedersen (1937: 53), viz. $-T/D^{(h)}n\acute{z} > TT (> T?) > \text{Brit. } P$, where T , $D^{(h)}$, P are the usual cover symbols for voiceless stop, voiced (aspirated) stop and voiceless spirant, respectively (for doubts about the reduction of the geminate before spirantization see Sims-Williams 2003: 134).¹²

This is fine for *rhathu*, *raza*, but some repair is required in the case of *brathu*,¹³ since Pedersen compared this word with Skt. *bardh-* 'cut off', Gk. *πέρωθω* 'destroy' in which there is no trace of a laryngeal. Pokorny's (1959: 110) unappetizing reduced grade $*b^hr_2zd^h-$ $>$ *brathu* and MIr. *brataim* 'rob, plunder' suffer from the same problem. I believe a solution can be found in a Celtic blend of either Pedersen's or Pokorny's suggestion with $*b^herH-$ in Lat. *feriō* 'strike, cut, thrust etc.', nasal present in Skt. *bhṛṇāti* 'threaten, scold' (LIV₂: 80), yielding $*b^hrHd^h-né-$ or $*b^hrHzd^h-$ or at a pinch, if all three are involved, $*b^hrHzd^h-né$.

Pedersen's (1909: 114) tentatively suggested alternative of a d^h -present for *brathu* would still require a blended root so that the doubling up of the $*d^h$ seems a little improbable, even though in other respects the idea gibes well with Pokorny's (1959: 854) suggestion of a d^h -present for *rhathu*. Against both is also the solitary example of PIE $*dd^{(h)}$ $>$ Welsh *d* cited by Lewis/Pedersen (1937: 37) and Jackson (1953: 427), viz. Welsh *credu* etc. 'believe'. Pedersen (1909: 24, 113f.) was undecided about this derivation and suggested that Welsh *credu* may be a loan from Irish. Pokorny (1959: 1095), incidentally, has another example of Welsh *th* $<$ PIE $*dd^{(h)}$ in *trythill*, *drythill* 'wanton' (spelt *trythyll* on p. 1027 with slightly less clarity about the origin). Jackson (1953: 427) is on firmer ground with his derivations of Welsh *adyn*, *edrych* with the preverb $*ad-$ + $d-$ but since in all these cases – *credu*, *adyn* and *edrych* – there was until quite late something akin to word boundary between the two voiced stops that came to form the geminate, a doubt may remain. Even without this doubt I think we still have enough ammunition to shoot down Schrijver's PIE root $**HrHsd-$. Consequently, Kümmel's (LIV₂ s.vv.) separation of

¹² Jackson (1953: 396, 399, 403, 565) mentions the later phase of this rule but ignores the first part, treating only the clusters *dn*, *gn* in other environments that later yielded *jn* or *n* (1953: 431f., 460-462; cf. Pedersen 1909: 102-104, 109, 112-114; Lewis/Pedersen 1937: 32f., 35, 37). In view of this confusing discrepancy in treatments it is perhaps worth pausing to note that Jackson accepts Pedersen's explanation that the different outcomes of *dn* are determined by the place of the British accent but rejects a similar explanation for the variation *aen/an* from *agn*, even though he has no alternative explanation for the latter. Yet upon examining Pedersen's and Jackson's examples it becomes clear that, discounting the preverbs in preverb+verb combinations, *aen* appears in initial syllables, *an* in non-initial syllables. A parallel to this kind of conditioning is found in Hebrew where the effect of geminates on the lowering of an immediately preceding accented vowel depends on whether or not the vowel is in an initial syllable (Woodhouse 2004: 242, §8).

¹³ Schrijver 1995 has nothing new to say about either of these Welsh words.

the material into three roots **rasd-* (Lat. *rādō*), **Red* (Ved. *rādātī*) and unspecified (Lat. *rōdō*) must be regarded as inadequately motivated.

The forms *rhathu*, *raza*, *brathu* and *brataim* discussed above all point to a short root vowel, which agrees with Schrijver's (1995: 168-191) analysis of *CRHT* in Celtic (really *CMHT*, $M = r, l, m, n$) where $T =$ oral stop or s . Consequently, **HrHT-* and **rHT-* are not distinguished in Celtic, so that for $R = r$ at least Beekes' hypothesis about early loss of $H-$ (§2.2 above) is not required.

Finally, the presence of internal h_3 in the root **Hrh₃d-* makes attractive Puhvel's (1984: 175) connection of Ved. *rad-* with Hittite *ard-* 'saw (off)' and consequently the narrowing of the choice of the initial H of the root to $h_{1/3}$ (see Melchert 1994: 73; Kloekhorst 2006: 93-95, n. 54).

2.2.4. Beekes' suggestion of early loss of $H-$ in *HRHC-* (§2.2 above) is borne out for Germanic when $R = *n$ by Goth. *namo* etc. < h_3nh_3mn- (possibly with assimilation of the initial < $*g_nh_3mn-$). In the case of $R = *r$, Germanic items for which no extra-Germanic $H-$ is demonstrable, such as Goth. *raþjo* 'number, account, partnership' (cf. Lat. *ratus* §2.2) and OIc. *raptr* 'log, rafter' (beside *ráfr* 'roof') cannot confirm or deny the truth of Beekes' suggestion.

One secure example provided by Beekes (1988b: 39) that does confirm the truth of his suggestion for Germanic when $R = *r$ is OHG *rasta* 'rest, leg of journey etc.' < **HrH-s-*, as shown by Ved. *īrmá* 'at rest, stationary' etc. (§2.2 above).

Another possible Germanic example confirming the suggestion emerges from the argument for initial $H-$ in Lat. *rōdō*, Ved. *rad-* 'gnaw' given in the previous section, viz. OS *ratta* (< **Hrh₃d-n-* '*gnawer'), assuming the word is originally Germanic.¹⁴

2.2.5. Looking through Schrijver's (1991: 312f.) discussion of Lat. *arduus* 'high' etc. one gets the distinct impression that the solution is **Hh₃rd^huo-* (and not the ***h₃rd^huo-* proposed *ibid.* 69) with simplification of the laryngeal cluster in some languages, vocalization of the second laryngeal in others, such as Latin and Greek, and alteration of the relative timing of the second laryngeal and the resonant in pre-Indo-Aryan (pre-IA) resulting effectively in metathesis (see Reynolds/West/Coleman 2000: 364-367), hence Ved. *ūrdhvá-*.

Although this proposal harmonizes with Schrijver's (1991: 77-79) conclusions regarding *HHC-* > Lat. *aC-* and **HHL-(n-)* > Italic, Celtic and Germanic *al-*, these somewhat undifferentiated conclusions lead Schrijver into more complex analyses of the etymology of Lat. *ulna* 'elbow' and cognates than are perhaps warranted.

¹⁴ Thus, not too tentatively, Franck/van Wijk (1912: 536); quite confidently van Haeringen (1936: 135); contra Kluge/Seebold (1995: 669).

It is therefore worth asking whether these can be fruitfully modified by more precise attention to the quality of the laryngeals.

The sequence **HHL-n-* is proposed for *ulna* etc. on the basis of Hitt. *hahhal* 'palm of the hand?', for which Schrijver gives as possible analyses **h₂eh₃l-* or **h₃eh₂l-*. In view of Melchert (1994: 68-74) and Kloekhorst (2006: 85-95), the second of these, **h₃eh₂l-*, is by far the more probable. Now since Schrijver (1991: 65) finds that the Latin product of a vocalized nasal **eN* preceded by an anlaut laryngeal turns up as *e/a/oN* depending on the laryngeal, it seems thinkable that in the zero grade sequence **h₃h₂l-n-* > Lat. *ulna* 'elbow' etc. the vocalized **a* < **h₂* could be changed to **o* by the preceding **h₃-* in accordance with Eichner's laryngeal hierarchy and, indeed, much as *h₃* in *CRh₃V* in Greek converts "regular" **ar* to *op* (§2.1.1 above). Of Schrijver's (1991: 77) five examples for *HHC-* > Lat. *aC-* only Lat. *amārus* 'bitter' appears to be against this by allegedly requiring initial *h₃-* on the basis of Arm. *hum* 'raw' – but, quite apart from Schrijver's own doubts about the connection of these two words, the initial can also be *h₂* (Beekes 1998a: 76) – indeed Kortlandt (1980: 128) reconstructs **h₂h₃m-* here. Nothing prevents us then from concluding that, at a time when laryngeals that were liable to vocalization had generally coalesced in **h₂ > a* in European languages other than Greek, laryngeals not liable to vocalization still retained their distinctive features. If this is accepted, the ablauting root in Schrijver's *n*-stem paradigm for *ulna* etc. can be specified as **h₃eh₂l-/h₃h₂l-* > non-Anatolian, non-Indo-Iranian **ōl-/ol-*.

Further, Lat. *acu-* 'quick-' is then to be derived from **h_{1,2}h₃k₁-*.

Thus, returning to Lat. *arduus* etc., the *H-* in the proposed protoform **Hh₃rd^huo-* would have to be *h₁-* or *h₂-*.

These proposals eliminate Schrijver's (1995: 186) contention of twin "regular" reflexes of **HrH-* in Celtic and supply one Latin example for an initial sequence of four vocalizable sounds beginning with *HH-*, viz. **h₃h₂l-n-*, against the nil claimed by Schrijver (1991: 320). They also entail adding to Schrijver's formulation for *HHC-* > Lat. *aC-* the phrase "except that **h₃HC-* > Lat. *oC-*."

2.2.6. Somewhat different is Beekes' proposal, with varying degrees of confidence in different sections of his 1988 paper (cf. pp. 26f., 33f., 40), that anlaut **sRHC-* sequences may develop in the same way as anlaut *RHC-* sequences. This proposal seems eminently reasonable given the well known uncertainty regarding the status of **s* at word boundary in PIE as evidenced by the phenomenon of *s* mobile. In fact, worrying about whether a particular **s-* is mobile or not (cf. Beekes 1988b: 40) strikes me as misplaced. Instead it seems probable that in principle every PIE **s-* must have been potentially mobile: in some items the *s-* appears in all the relevant data we have; in other items it was lost in all our data; in a third group, with *s* mobile "proper", retention is patchy in the preserved data. On the other hand "non-Beekes' law" Ved. *sūdāyati* 'make tasty, prepare', Lith. *sūdyti*

‘salt’ beside “Beekes’ law” Gk. *ἀδεῖν* ‘please’ show that both developments are possible. Perhaps not all languages behave alike in this respect: according to Beekes’ data only Greek, Italo-Celtic and Germanic seem to attest vocalization of the laryngeal in **sRHC-* sequences. As to the problems of **suēd^h-*, Beekes (1988b: 33f.) in essence shows that they are of no consequence since the data represented supply no credible evidence relating to the proposal in question.

2.3. In summary, I find Lubotsky’s use of Beekes’ law to bolster his own law via an attack on PIE **a* in principle satisfactory. There is, however, some devil in the detail. After a special section on PIE **(H)i(V)-*, which is of some relevance to both Beekes’ law and Lubotsky’s law, I shall examine which, if any, of Lubotsky’s data for his law are doubtful or should be excluded and then deal with unexplained examples of PIE **a* put forward both by Lubotsky’s principal critic Mayrhofer (1986: 170, 172f.) and by Lubotsky (1989: 65 n. 4) himself.

3. PIE **HiHC-*

The question of PIE **HiHC-* is of relevance to one item used by Lubotsky in establishing his law and reconstructed by him as **ieh₂g₁-* (§4.1 below, no. 13) since this is now usually reconstructed with initial laryngeal in order to take care of the spiritus asper in Gk. *ἄζομαι* etc., a decision stemming from Peters’ (1976) paper on the long first vowel of Attic *ἴημι* ‘send, throw’ < **Hi-Hiéh₁-* and implying, by a seemingly somewhat abrupt logic, that plain **i(V)-* yields Gk. ζ.

Suggestions that only voiceless laryngeals might be responsible for aspirating **i(V)-* and attempted proofs that **h₃i(V)-* might yield ζ have been canvassed by Beekes (1969: 95-98) and the matter of the alleged “best case” for the latter – *Ζέφυρος* ‘(fertilizing?) west wind’ beside *οἰφέω* ‘copulate with’ – appears to be still unresolved (see EWA 2 s.v. *YABH*; Kümmel LIV₂ s.v. **ieb^h-*, n. 0). It is probable that this question is actually vacuous since it appears that voicing by *h₃* in Greek is either unknown or only occurs in postaccentual environments (§2.1.3 above),¹⁵

¹⁵ Thus any attempt to include other unaccented syllables on the basis of a perceived voicing alternation *κτύπος* ‘loud noise’: **γδουπέω* ‘make a loud noise’ (only aor. *εγδούπησαν* Il.11.45, with secondary accent position) (i.e. **kth₃úpos* : **kth₃oupéiō* or **ékth₃eup-?*) would be highly uncertain and artificial in view of the associated *ερίγδουπος* (reinforcing the possibility of postaccentual origin of the voicing) and *κτυπέω* (without voicing), as well as the probable onomatopoeic origin of the words and the difference of meaning between the two groups (sharper vs. duller, heavier sound) even though there appear to be points of semantic contact between the two (e.g. beating of breasts, Id.Ch.23. beside S.Aj.634, E.Alc.104, roar of the sea, Il. 4.455, Pl.R.396b, see Liddell/Scott/Jones 1968 s.vv.).

i.e. it would normally be excluded in root initial position unless forms with augment and reduplication are brought into play.

Mayrhofer (EWA 2: 406 s.v. *yas*, cognate with Gk. ζέω 'seethe, boil'), basing himself on an unpublished lecture by Jochem Schindler, contrasts the reduplicated Ved. present stem *yeṣ-* (hapax *yeṣantī* RV 3.53.22) = Av. *yaēš-* < PII **ya-yš-*, allegedly pointing to PIE **ie-is-/ies-* without laryngeal, with the zero grade perfect stem of *yaj-* (< Lubotsky's **ieh₂g₁-*) in the formulation PII **Hi-Hij-* > Ved. *īj-*.

One might wish to challenge this on the basis of the parallel stem *yej-* from the latter root (hapax *yeje* RV 6.36.2), with seemingly the same reduplication as in *yeṣ-*, and the facts that the perfect of *yudh-* 'fight' (*Hieud^h-*) *yuyódha* also reduplicates with *yu-* and not **Hi-* and that there is some uncertainty in the matter of assigning initial laryngeal to *ya-* roots (cf., e.g., LIV₂: s.vv. **ieh₂*, n. 0; **ieu-/2*, n. 1). One might also invoke the clearly disruptive effects of analogical restructuring, in both directions, among the Vedic perfects of **Hu-* and **u-* initial roots, e.g.,

with **Hu-*: *vavárdha*, *vāvrđhúr* 'grow large/strong' (**HueRd^h-*), *vavau* 'blow' (**h₂ueh₁-*), pf. *vavákṣa* 'grow, increase' (**h₂ueks-*), pf. ptcl. *vāvṛṣāṃs-* 'rain' (**h₂uers-*) beside *ūdima* 'speak, sound' (**h₂uedH-*), *uvāsa* 'shine' (**h₂ues-/1*), *ūṣatur* 'spend the night' (**h₂ues-/2*);

and with **u-*: *vavṛmáhe* 'choose' (**uelh₁-*), *vavanmá* 'win' (**uen-*), *vavanda* 'praise' (**uend-*), *vavāca* beside *uvāca*, *úcimá* 'speak' (**uek₂-*), *uvāma* 'vomit' (**uemh₁-*), *uvāpa*, *ūpé* 'strew' (**uep-*), *uvāha*, *ūhur* 'drive' (**ueg^h₁-*).

One might also note there is no metrically discernible hiatus in *īj-*;¹⁶ though hiatus is not always found where a laryngeal is to be reconstructed so this need not prevent us from reconstructing *yas* with initial *H-* as well. As to Mayrhofer's Avestan cognate *yaēš-*, Beekes (1988c: 90f.) cites a number of cases in which specifically the expected PII sequence **aHi* yields /ai/ without hiatus – in fact *aʔi* seems only to occur where there is strong paradigmatic pressure, as in loc. sg. *ʔādaʔi* of *ʔādaʔ-*, i.e. as a result of analogical restoration.

There is however one striking difference between the Vedic **(H)u-* and *(H)i-* roots. If we examine the four Vedic roots noted by Macdonell (1916: 147) as containing *ya* and having *i* in the reduplicating syllable viz. *tyaj* 'forsake', *yaj* 'sacrifice', *vyac* 'extend', *syand* 'move on', to which we can add *myaks* 'be situated', *vyath* 'waver', *vyadh* 'pierce' and *vyā* 'envelope', only *yaj-* is synchronically without a root initial consonant before *ya*. It seems that there can therefore be no objection to supplying the missing consonant by reconstructing a laryngeal.¹⁷

¹⁶ I have checked the four finite forms (*ījá* x2, *īje*, *ījiré*) and the nine forms of the participle *ījāná-* found in the RV.

¹⁷ By contrast, of the five roots containing *va* and having *u* in the reduplicating syllable noted by Macdonell (ibid.), to which we can add *vam* 'vomit', *vas* 'shine' and *vas* 'spend the night', only one has a synchronic consonant before *va* (viz. *svap* 'sleep'),

On this basis I think it is best to go with the now accepted view but also with the tentative proviso that instances may yet be found where Gk. *z* ascends to $*h_3i(V)$ instead of plain $*i(V)$.

This will of course entail rewriting Lubotsky's $*ieh_2g_1-$ as $*Hieh_2g_1-$, which in turn raises the question of whether Gk. *ἄζομαι* etc. can be derived from $*Hih_2g_1-$, a form that seems no longer amenable to Beekes' law because of the initial laryngeal.

An answer to this question is partly suggested by Schrijver's (1991: 318f.) discovery of at least one probable example of $*HuHR-$ > Lat. *vaR-*, viz. $*h_2uh_1ntno-$ > Lat. *vannus* '(winnowing) fan', i.e. the initial laryngeal disappears before, or at least has no effect on, the operation of Beekes' law in Latin, a development that certainly contrasts with the behaviour of $*HrH-$ in Latin (§2.2 above) and enables Schrijver (loc. cit.) further to derive Lat. *vacuus*, *vacāre* 'empty' from $*(h_1)uh_2-k-$ and, more importantly for our present purpose, Lat. *iacio* 'throw' from $*(H)ih_1-k-$, from which the parentheses can be removed if the conclusions of Peters' 1976 paper are accepted.

Naturally these findings of Schrijver's cannot be simply applied to Greek without further ado. In particular, the fact that instances of Greek "prothetic" vowels of laryngeal origin followed by consonantal $*u$ are found probably rules out the assumption that $*HuH-$ will obey Beekes' law in that language. But this limitation does not apply to $*HiH-$ in Greek, where in addition the peculiar development of $*Hi-$ > Gk. spiritus asper before a vocalic segment, which would include a laryngeal liable to vocalization, authorizes us to regard $*Hi-$ in such environments as a single (even if originally geminate) consonantal segment, which we may denote here *h-*.

The correctness of this view is born out by several forms and derivatives of Hom. *ῥημι* 'throw' having expected zero grade represented by anlaut $\acute{\epsilon}-$ such as $(\acute{\epsilon}v-)ετή, \acute{\epsilon}σμός$ etc. (see Beekes 1988b: 32) which derive directly from $*Hih_1C-$ just as Gk. *ἄζομαι* etc. derive directly from $*Hih_2g_1-$. The explanation given by Kümmel (LIV₂: 225) that speakers replaced the traditionally "expected" long unaspirated vowel \bar{i} in these forms of *ῥημι* with the short aspirated vowel *he-* on the basis of the long aspirated vowel *hē-* of other forms in the paradigm is a little hard to swallow; the tempting reference to similarities with the paradigm of *τίθημι* can hardly be made until after these short-vowel forms have been established.

Evidently in Greek the sequence $*HiH'C-$ > $hV_{H'}C-$ behaves differently from the related reduplicated sequences with full grade $*Hi-HieH'C-$ and zero grade $*Hi-HiH'C-$. In order to explain the aspiration in these forms with $*Hi-Hi-$ – other than by Kümmel's (LIV₂ p. 225, nn. 4, 6) unappealing appeal to an analogy that is

and of the remainder some are reconstructed, as we have seen, with initial laryngeal (*vad, vas* 'shine' and 'spend the night') and some without (*vac, vam, vap, vah*).

conspicuously lacking in the case of the various forms with and without aspiration of the somewhat comparable verb ἵστημι 'place, stand' – it is useful to invoke the metathesis of *-Hi-* foreshadowed in another context by Kortlandt (1975: 3) yielding **Hi-iH-* in **Hi-iHeH'C-* and **Hi-iHH'C-* which, with $H' = h_1$, develop naturally to **h-iHēC-* and **h-iHeC-* and thence, with the lapse of the intervocalic laryngeals, to **h-iēC-* and **h-ieC-*, both naturally with the typically short reduplication syllable of the Homeric present of ἵημι (Goodwin 1894: 181). If the long reduplication vowel also found in the Epic dialect and in Attic is not a product of contamination with **uei-* and **seh₁-* (LfgRE s.v.) then it probably arose in the active participle, the strong stem of which dominates the participial paradigm, viz., after metathesis, **Hi-iHh₁ént-* > **h-īh₁ént-* > *h-īént-*.¹⁸

Thus we can replace several improbable analogies of the purely consonantal laryngealist school with a series of natural derivations, at the same time retaining Lubotsky's example for his law in the amended reconstruction *Hieh₂g₁-*.

4. The data for Lubotsky's law

4.1. The material adduced by Lubotsky in support of his law is summarized below in a form consistent with that of other reconstructions employed in this paper. In view of §2.2.3 and §3 above, the opportunity is here taken of immediately emending Lubotsky's **reh₂d-* to **Hreh₃d-* (no. 8), in which the initial *H-* is possibly **h_{1β}*, and his **ieh₂g₁-* to **Hieh₂g₁-*. At the end of each group of cognates there is an indication of the section(s) of the paper where the etymon is further dealt with. It will be observed that in eight (marked †) of the fourteen groups no Vedic forms with long vowels are actually found; this is of course not a substantive objection to Lubotsky's law.

- (1) **peh₂g₁-*: RV *pajrá-* 'firm'; *pājas-* 'frame'; Gk. *πήγνυμι* 'make fast', Lat. *pango* 'fix' (§4.3);
- (2) † **sleh₂g-*: AV *ślakṣṇá-* 'slippery, smooth, soft, tender, gentle'; Gk. *λάγαρος* 'weak, slack, loose, sunken, thin, narrow' (§4.5.1);
- (3) † **pleh₂g-*: RV (*upala-*)*prakṣín-* 'operating the millstone', Br. *plakṣṇoti* 'strike'; Gk. *πληγή* 'a blow' (§4.5.2);
- (4) **sueh₂d-*: RV *svādati* 'be sweet'; *svādú-* 'sweet'; ?GAv. *hudāma* 'sweetness'; Gk. *ἡδύς* 'sweet' (§4.3);
- (5) **g^hleHd-*: Pāṇ. *hlanna-* 'refreshed'; RV *hlādikā* 'refreshing' (§4.5.3);

¹⁸ A possible alternative is contamination of metathesized **Hi-iHeh₁C-* with the original form **Hi-Hieh₁C-* giving **Hi-iHieh₁C-* > **Hi-iHyeh₁C-* > *hīēC-*; a more direct development **Hi-Hieh₁C-* > **Hi-Hiyeh₁C-* yielding, after metathesis, **Hi-iHyeh₁C-* would infringe the Sievers/Edgerton principle.

- (6) † **ueh₂g₂-*¹⁹ RV *vagnú-* ‘cry, call, roar, sound’; Lat. *vāgīre* ‘cry (of children)’, Lith. *vógrauti* ‘babble’ (§4.5.4);
- (7) **b^héh₂g₂-*: RV 2. sg. *bhakṣi*,²⁰ 3. sg. *bhájati* ‘share, distribute’, Av. *baga-* ‘god’; RV *bhāgá-* ‘share’, Av. *bāga-* ‘id.’; Gk. *φαγεῖν* ‘eat’ (§4.2, §4.4);
- (8) † **Hréh₃d-* (possibly **h_{1β}réh₃d-*): RV 2. sg. *rátsi*, ‘cut, open (a road or path)’, 3. sg. *rádati* ‘scratch, scrape, gnaw, bite, rend, dig, break, split, divide’; Lat. *rādō* ‘scratch, scrape’, *rōdō* ‘gnaw’ (§2.2.3, §4.2);
- (9) **k₁eh₂d-/1-*: AV *śatsyati* ‘fall’, perhaps RV *sāda-* ‘grass’; Lat. *cado* ‘fall’ (§4.4);
- (10) † **k₁eh₂d-/2-*: RV pf. 3. pl. *śāsadré* ‘excel’; Gk. *κεκαδμνος* ‘excel’ (§4.4.1);
- (11) † **b^heHd-*: RV *bhadrá-* ‘good, gracious, kind’ and/or ‘blessed, fortunate, prosperous, happy’, Av. *hubādra-* ‘fortunate’; Goth. *batiza* ‘better’, *bota* ‘advantage’ (§4.5.5);
- (12) † **uéh₂g₁-*: RV *vájra-* ‘Indra’s weapon’, Av. *vazra-* ‘Miθra’s club’; Gk. *ἄγνυμι* ‘break, crush’ (§4.5.6);
- (13) † **Hieh₂g₁-*: RV 2. sg. *yákṣi*, 3. sg. *yájati* ‘sacrifice’, *yajñá-* ‘sacrifice’; Av. *yazata-* ‘god’; Gk. *ἄζομαι* ‘honour’, *ἄγνός* ‘holy, pure’ (§4.2, §4.4; §3);
- (14) **meh₂d-*: RV 2. sg. *mátsi*, 3. sg. *mádati* ‘be glad, drunk’, Av. 3. sg. *maḍaite* ‘id.’; RV *mādana-* ‘delighting’; Gk. *μαδάω* ‘stream away’ (§4.2, §4.4).

4.2. Before proceeding further it will be convenient to deal with the disputed status of the RV 2. sg. athematic forms *bhakṣi* (7), *rátsi* (8), *yákṣi* (13) and *mátsi* (14), which are generally regarded as functioning as imperatives, if not actually originating as such. Complete lists of the 24 items of this kind found perhaps exclusively in the RV are given by Whitney (1889: 237) and Macdonell (1910: 336),²¹ Whitney’s being classified into those without and those with supporting root-present and/or root-aorist members in the paradigm. The latter of Whitney’s lists is missing some members, such as *jóṣi* ‘enjoy’, which has beside it root aor. *ájusran* (Macdonell 1916: 384), as well as *párṣi* ‘pass’ and *sátsi* ‘sit’ both of which are found as straight presents (Macdonell 1910: 336). Others with pure athematic

¹⁹ Tectal determined by the Vedic item (Kortlandt 1978: 241); in Lat. *vāgīre* labialization of the tectal may have been inhibited by the initial labial; also Cavoto’s (2001) thesis points to **g₂* following **h₂* but Lith. *svagėti* ‘sound’, with no acuting of the root vowel, points to **g^h₂* and no *H* and so can hardly be related (thus Fraenkel 1962-1965 s.v.v.; pace Cavoto 2001: 39 n. 39).

²⁰ The accented form *bhákṣi* cited by Lubotsky (1981: 136) does not occur in the RV according to both Joachim (1978: 114) and the (1933-1951) Poona edition, though it may occur elsewhere as it is also listed by Macdonell (1916: 401); see §4.2 below for a discussion of the status of this and three other similar items in the table.

²¹ There are some discrepancies of accent, thus *rátsi* in Whitney’s list and *prāsi* and *mátsi* in Macdonell’s should each have an accent on the initial syllable, judging by the (1933-1951) Poona edition of the RV.

presents beside them – surely the most interesting category – are *kṣéṣi* ‘possess’, *dárṣi* ‘pierce’, *néṣi* ‘lead’, *yāsi* ‘go’ (the undisputed present includes accented forms *yáṣi*, *yáti* etc.), *rāsi* ‘give’, *véṣi* ‘enjoy’ (Macdonell 1910: 336; 1916: 377-419 s.vv. *kṣi/1*, *nī*, *yā*, *rā*, *vī*). Nearly all have *s*-aorist forms beside them, which is of interest given the prevalent view that the forms in question are to be regarded simply as imperatives of this kind of aorist (see e.g. Joachim 1978: 114f., 137, 142 with lit.); exceptions are *jóṣi*, *yótsi* and *rátsi*, which leaves these just as isolated qua aorist imperatives as they would be qua present indicatives. These facts, together with the further one that an imperative suffix *-i* is otherwise unheard of, lend irresistible weight to the view, equal or similar to those of, e.g., Whitney (1889: 237) and Beekes (1988c: 155), that these forms originated as present indicative; which is all that is needed to justify Lubotsky’s use of them both to support his law and to explain some of the exceptions to it.

4.3. Lubotsky’s roots (1) **peh₂g₁-* ‘firm’ and (4) **sueh₂d-* ‘sweet’ are essentially the same as Mayrhofer’s (EWA 2 s.v. *pájas-*, *svādú-*). Lindeman’s (2000) solution of paired roots with alternating medial consonant *h₂/m* is just possible but inferior to the Thurneysen/Kortlandt idea of nasal invasion (see §2.2.3 above) since the nasal and the laryngeal seem to be present together in both the Greek and the Latin congeners. Lipp’s device of a “Neowurzel” to explain the short root vowel in RV intens. *pápage* (LIV₂: 461 n. 2a) is costly and unconvincing. The argument presented by Kümmel/Lipp (LIV₂: 606 n. 2a) for metrically correct RV *suvád-* < **suh₂ṅd-* seems more promising but, first, the accent is then analogical anyway, secondly, there is no sign of the expected ***sūnád-*, and finally the reconstruction is not actually required to explain the occurrence of metrical RV *suvád-* beside *svád-*, cf. the cooccurrence of metrical *duvá*, *duvā* etc. beside *dvá*, *dvā* etc. ‘2’ explained by Mayrhofer (EWA 1 s.v. *dva-*) as based on *PIE **d(u)uó*; i.e. the place of the glide does not need to be filled by a reconstructed laryngeal. Lubotsky’s explanation is undoubtedly simpler.

4.4. The following have been additionally defended by Lubotsky (1989: 54f.): (7) **b^heh₂g₂-* ‘share’, (8) **Hreh₃d* (Lubotsky’s “**reh₂d-*”) ‘bite, scratch’²² (9) **k₁eh₂d-/1* ‘fall’, (10) **k₁eh₂d-/2* ‘excel’, (13) **Hieh₂g₁-* ‘worship’, (14) **meh₂d-* ‘be wet, drunk’. Mayrhofer (EWA 1-2 s.vv. *bhaj*, *śad/1*, *śad/2*, *yaj*, *mad*) mostly has the same etymologies, merely reconstructing **a* for Lubotsky’s **eh₂*, but (i) signals doubt (“vielleicht”, s.v.) over the connection of Ved. *śad-/1* with Lat. *cado* ‘fall’, (ii) prefers root-internal nasal for *śad/2*, even offering an alternative etymology (s.v. *chand*) (and of course (iii) adds [with Kümmel LIV₂: 224f.] the initial laryngeal to Lubotsky’s **ieh₂g₁-*, concerning which see §3 above).

²² On this see §2.2.3 above.

Schirmer/Kümmel (LIV₂: 65) justify reconstruction of **b^hag-* ‘share’ with PIE **a* on the basis of Toch. A *pāk*, B *pāke* even though the Toch. words point just as readily to laryngeal (see Adams 1988: 33).

Kümmel (LIV₂: 318) is quite happy with connecting Ved. *śad-/1* and Lat. *cado*, Kümmel deriving them from **k₁ad-* ‘fall’ and allowing for the replacement of **a* in **k₁ad-* by combinations with **h₂*, just as Zehnder (LIV₂ 421) does for **mad-* ‘be/get wet’; Schrijver (1991: 100, 167) has no objection to Lubotsky’s account of either Ved. *śad-/1* or *mad-* except, following Frisk, detaches Gk. *κεκádοντο* ‘give way’ from the former.

We will now spend a little more time on Lubotsky’s **k₁eh₂d-/2* ‘excel’.

4.4.1. Kümmel (2000: 512-514; LIV₂: 325, 351) rejects Lubotsky’s (traditional) connection of Ved. *śad-/2* with Gk. *κεκαδμένος* on semantic grounds, claiming the Vedic item means not ‘sich auszeichnen’ or ‘be eminent or superior, triumph, prevail’ (cf. Monier-Williams 1899: 1051) but only ‘sich stark fühlen’, while upholding Mayrhofer’s internal nasal for both words. Kümmel’s (2000: 512) semantic argument relies on the opinion that the intercession of a god can only make one feel strong but cannot assist one to distinguish oneself. Yet the relevant part of Kümmel’s first translation in support of this notion, viz. (of RV 2.20.4ab) “... den Indra, den will ich begrüßen, bei dem (d.h. in dessen Anwesenheit) sie [die Menschen] bisher stark geworden sind und **sich stark gefühlt haben**” [emphasis and parentheses as in original – RW], apart from being somewhat tautologous, indicates a belief that the presence of the god can actually impart real strength. Consequently I cannot see that “[people] have become strong and have triumphed/prevailed” is in any way inferior to Kümmel’s translation; similarly for the other contexts Kümmel (2000: 512f.) deals with. In:

Wie ein Mädchen **dich** durch deinen Körper **stark fühlend** gehst du,
Göttin, zum Gott, der dich erlangen will; zugleich lächelnd machst du als
Jungfrau im Osten sichtbar deine Brüste, indem du erstrahlst (Kümmel
2000: 513; RV 1.123.10),

in view of the similar phrase in RV 1.24.6 involving *arepāsā tanivā* ‘(her) spotless body’, it is clear that the words in bold above would be as well rendered ‘superior (through)’ or even ‘adorned (by)’, which is also a later meaning of the Greek cognate (Liddell/Scott 1968 s.v. *καίνωμι*). A late Rigvedic occurrence (1.33.13) of *śad-/2* surely refers to dominance in battle rather than just feeling strong²³ and is

²³ The stanza reads: *abhi sidhmó ajigād asya śátrūn ví tigména vṛṣábhena púro 'bhet| sám vájreṇa asṛjad vṛtrām indrah prá svām mātīm atirac chāśadānaḥ* (i.e. ... *atirat śāśadānah*) ‘Indra confronted his enemies directly, the equal of a raging bull, he tore (their) strongholds asunder, he smote Vṛtra with (his) bolt; he increased his devotion/

thus very close to the Homeric meaning of dominating the field in a particular (often battle) skill, e.g. Il. 2.530 ἐγγεῖη δ' ἐκέκαστο Πανέλληνας καὶ Ἀχαιοὺς 'but he surpassed all the Hellenes and the Achaeans at the spear'. The meanings of these verbs, far from being separated by an unbridgeable gulf, seem instead to be inextricably intertwined.

On the other hand the lengthened reduplicating syllable of the perfect stem *śāsād-* does seem to point, not to an internal laryngeal, but rather to a resonant in the root. A possible rationale for this bizarre relationship will emerge shortly. The fact is that of some 25 Vedic perfect stems with reduplicating syllable *Cā-* listed by Macdonell (1910: 351f.), in addition to our *śād*, only *sah* does not appear to have a resonant somewhere in the root (true, *vas*, *vas/1* 'be clothed' and *vās* have only their initial **u-*) and only *rabh* is possibly to be reconstructed with an internal laryngeal, although Mayrhofer (EWA s.v.) rejects this in favour of a connection with *rambh*. In EWA only three roots – *kanⁱ*, *raṇ⁽ⁱ²⁾*, *skambhⁱ* – have a (possible) final laryngeal following a consonant, which is clearly irrelevant to the question, while four – *jar*, *marj*, *varj*, *varṣ* – no doubt somewhat more significantly, are reconstructed with an initial laryngeal followed by a consonant; to this last group may also belong *vas/1* 'be clothed' and *vardh* 'grow'. Possibly this small group of between three and six roots has been responsible for the analogical extension of the long reduplicating syllable to other roots containing resonants, which comprise *kalp*, *gardh*, *tarj*, *tarṣ*, *dhar*, *nam*, *mañh*, *marś*, *randh*, *vañc*, *van*, *var*.

The obvious candidate for this resonant is /n/, as both Mayrhofer and Kümmel suggest. The restored connection with Gk. *κεκαδμένος* enables us to surmise that the creation of analogical Gk. present *καίνυμαι* 'excel' may have owed less to *δαίνυμαι* than is commonly supposed.

Consequently, with its internal nasal restored, this item (no. 10) is probably best eliminated from Lubotsky's material.

4.5. This leaves (2) **sleh₂g-*, (3) **pleh₂g-*, (5) **g^hleHd-*, (6) **ueh₂g₂-* 'cry, sound', (11) **b^heHd-* 'good, kind' and (12) **ueh₂g₁-* 'pulverize'.

4.5.1. As both Beekes (1988b: 27) and Schrijver (1991: 165) point out, the presence of *h₂* in (2) **sleh₂g-* is vouched for by the combination of Gk. *λαγρός* and Toch. A *slākkār*, B *slakkare*, but not by Gk. *λήγω* if the (solitary?) occurrence of *λήξαντος* in Pindar (P. 4.292) in a clearly Doricizing context (e.g. 290 γὰς, 294 κρᾶνα)²⁴ is

determination, having prevailed.' Replacing the last phrase with 'feeling strong' does not seem to me to cut the mustard.

²⁴ Other clearly Doric forms seem difficult to track down: *λήγει* and *λήγομεν* occur in choral passages at Aesch. Ag. 1534 and Arist. Pax 332, respectively, but the language of these choruses seems not to be Doric (cf. Ag. 1530 ἀμηχανῶ, 1535 δίκην, 1545 ψυχὴν; Pax 301 τῆς, 302 βοηθήσασων, 304 ἡμέρα, 305 ἡμῖν).

sufficient to force reconstruction of $\lambda\eta\gamma\omega$ with h_1 (so also Joseph 1982; Zehnder LIV₂: 565). Mayrhofer's (EWA s.v. *ślakṣṇá*) reconstruction **slegh₂snó-* seems to ignore the Tocharian evidence; Frisk takes the first α of $\lambda\alpha\gamma\alpha\rho\acute{\omicron}\varsigma$, $\lambda\acute{\alpha}\gamma\alpha\nu\omicron\nu$, $\lambda\alpha\gamma\acute{\alpha}\omega$, as PIE **a* and the second as secondary, though there is no particular reason why these Greek words should not reflect zero grade **slh₂gh₂-* by Beekes' law (§2.2.6 above) nor why the Vedic word should not remain as evidence for Lubotsky's law.

4.5.2. For (3) **pleh₂g-*: the precise meaning and etymology of *upala-prakṣin-* is disputed: derivation of the second component of the compound from **plnk₁-* 'dance' (Lith. *plėšti*, OCS *plęsati*, EWA 2 s.v. *práṣti-*) is as good as Lubotsky's **pleh₂g-* 'strike'; Br. *plakṣṇoti* is a restoration and therefore not certain. The items can therefore hardly count as sound evidence for Lubotsky's law.

4.5.3. For (5) **g^hleHd-*, despite there being no secure extra-Indo-Aryan correspondences (EWA 2 s.v. *hlād*), the six items adduced by Lubotsky from various departments of Old Indo-Aryan showing palpable alternations of quantity entirely in accordance with his law – and with three of them directly confirming the quality of the medial stop – in my opinion carry the day.

4.5.4. On (6) **ueh₂g₂-* 'cry, roar, sound': Lubotsky (1981: 135) correctly points out that derivation of *vagnú-* from *vac-* 'speak' would involve an irregular sandhi, but subsequently (1981: 138 n. 1), adding to Wackernagel's (1896: 117) list of three examples of the alleged irregularity, viz. (i) *vagnú-* itself, (ii) *vāgvín-* 'eloquent' and (iii) *śagmá-*, a fourth example, (iv) *vāgvant-* 'having speech, relating to speech', Lubotsky seems ultimately undecided about just how irregular the use of external rather than internal sandhi rules with suffixes is. Schrijver (1991: 146) is similarly undecided. In fact it will shortly become clear that Wackernagel's list comprises about a quarter of the Vedic material showing unexpected external sandhi that can now be gathered with little effort. In addition to the most of the above items, Macdonell (1910: 140-143) draws attention, sometimes in footnotes, to (v) *kakún-mant-* beside *kakúd-mant-*, (vi) *vidyún-mant-* for **vidyut-mant-*, (vii) *ṛg-mín-* for **ṛk-mín-* (there is also (viii) *ṛg-míya-/ṛg-míya-* beside *ṛk-vá-, ṛk-van-, ṛk-vant-*), (ix) *sáho-van-* beside *sahá-van-*, (x) *prṣad-vant-* for **prṣat-vant-*, (xi) *dhṛṣad-vín-* for **dhṛṣat-vín-*. Elsewhere in the same work, Macdonell (pp. 127-132) inserts further material without remark, viz. (xii) *vag-vaná-* 'talkative', (xiii) *vag-vanú-* 'noise' and, finally, possibly (xiv) *ág-ra-* n. 'point, extreme end, peak' (beside which are *ag-rimá-, ag-riyá-* 'at the top, first'; also LAv. *agra-* 'first, uppermost').

Mayrhofer (EWA s.vv.) thinks the best chance for *ágra-* etc. is connection with Latv. *agrs* 'early', which would then have escaped Winter's law. I would like to propose instead a connection with Gk *ἄκρον* 'highest point, peak; pl. the chiefs', which is semantically appropriate and formally exact but for the Vedic voicing,

which we now see as a not totally uncommon event; both can therefore be based on **h₂e/ok₁-* 'sharp, pointed' (cf. Pokorny 1959: 18-22) with assibilation of the prevelar prevented in *ágra-* by the following **r* (Kortlandt 1978: 238); note that there is neither voicing nor loss of the palatal feature in RV *cátur-aśri-* 'quadrangular'. Beside all the *vag-* words there are also RV *vákman-* 'utterance, speech, hymn of praise (?)' and *vákmya-* 'praiseworthy'.

There is of course some semantic cleavage between 'coherent speech' in Ved. *vac-*, *vákman-*, *vákmya-*, *vāgvín-*, *vāgvant-*, *vag-vaná-* (though this last – 'talkative' – is somewhat borderline) and 'incoherent sound' in Ved. *vagnú-*, *vag-vanú-*, Lith. *vógra* 'babblers', Lat. *vāgīre*. On this basis I think there is a case for Lubotsky's distinct root **ueh₂g₂-* focussing on 'incoherent sound'. Consequently the last two Vedic items mentioned should be removed from the above list of suffixed items with external instead of internal sandhi (where they are nos. (i) and (xiii)), leaving a total of twelve (still including *vag-vín-* etc.). Note that the Lith. congener is somewhat ambiguous: its long acute vowel can be due to Winter's law or laryngeal, its stop can therefore be either a media or an aspera, and Lith. initial *vo-* can reflect either **uā-*, as required here, or **uō-*.

This last fact can be verified by a check of the entries beginning *vuo-* in Kurschat's dictionary (1968-1973, 4: 2715f.): apart from one Žemaitian item (where Baltic *ā* and *ō* merged in *uo* anyway) and the trivial exceptions of *vúosinis* 'of ash (wood)' and *vúorškas* (dial.) = *viorškas* 'inch', in every case the *vuo-* item has beside it a variant with either *vo-* or *uo-*.²⁵ A similar picture emerges from examinations of Fraenkel (1962-1965: 1270-1275)²⁶ and Karulis (1992: 1179).²⁷ The circumflex in Latv. *vākšēt* 'laut weinen', *vākštēt* 'schreien, weinen (von Kindern)' (Fraenkel s.v. *vógrauti*) is no doubt due to the metatony fairly common in East Baltic verbs in *-ēti* (Derksen 1996: 173-178).

²⁵ The complete material is: *vúodas* = *úodas* 'Mücke', *vuodegà* = *uodegà* 'tail', *vuodeginis* 'id.', *vuodegita* 'comet', *vúoga* = *úoga* 'berry', *vuogýnas* 'place rich in berry-bearing plants', *Vúokie* (dial.) = *Vókè* 'Germany', *vúokietis*, *-ē* = *vókietis*, *-ē* 'German person', *vúokiškas* = *vókiškas* 'German', *vúoksas* = *úoksas* 'cavity, hole', *vúolaktis* = *úolektis* 'cubit', *vuorielkà* (Žem.) = *arielkà* 'brandy; whisky', *vúorškas* (dial.) = *viorškas* 'inch', *vúosinis* 'of ash (wood)', *vúosis* = *úosis* 'ash (tree)', *vuoslē* 'olfactory sense', *vúostyti* = *úostyti* 'smell (trans.); sniff up', *vúošvė* = *úošvė* 'mother-in-law', *vúošvis* = *úošvis* 'father-in-law'.

²⁶ Here, of the five items beginning *vuo-*, four are dialectal variants for *uo-* while the fifth is a Belorussian loan.

²⁷ Here no Latvian words beginning *vo-* or *vuo-* are recorded; incidentally, Karulis (1992: 1097f.) admits this Baltic equivalence of **wā* and **wō* with his equation of Latv. *vācietis* 'German', Lith. *vókietis* 'id.' with Gk. *ἔπος* 'word, etc', Lat. *vōx* 'voice'; consequently Karulis' proposed alternation **wāk-* : **wēk-* based on Latv. *vāks* 'eyelid', Lith. *vóks* 'id.' : Slovak *véko*, Russ. *veko*, Ukr. *viko* etc. 'id.' should be amended to **wōk₂-* : **wēk₂-* (as in Vasmer/Trubačev 1986-1987 s.v.).

4.5.5. On (11) **b^heHd-* ‘good; fortunate’: in view of the second set of synonyms given above for *bhadrá-*, Mayrhofer (EWA 2 s.v.) is right to connect the word with **b^hend-* ‘sing, rejoice’, a connection seemingly reinforced by the Celtic material Mayrhofer alludes to s.v. *bhand*. On the other hand the first set of synonyms seems to vouch for the connection with **b^h(e)Hd-* ‘good’ > Goth. *batiza* ‘better’, *bota* ‘advantage’ adduced by Lubotsky (1981: 134). It seems therefore that Ved. *bhadr-* represents a conflation of two separate items, **bh₂dro-* and **bheHdro-*, a conflation only made possible by Lubotsky’s law.

4.5.6. On (12) **ueh₂g₁-* ‘pulverize’: Mayrhofer (EWA s.v. *vájra-*), qualifies the same etymology as Lubotsky’s with “Vielleicht”, appears to opt for a protoform with **a* and, encouragingly, is even less enthusiastic about an alternative connection with Lat. *vegēre* < PIE **h₂ueg₁-* which, according to Mayrhofer, Lubotsky himself formerly supported. Kümmel’s (LIV₂: 664) reconstruction agrees with Lubotsky’s; however, pace Kümmel, Gk. **wag-* is not “erneuert” but the normal expected zero grade of the root by Beekes’ law.

4.6. Thus of Lubotsky’s fourteen items, in only two cases, (3) **pleh₂g-* and (10) **k₁eh₂d-/2* is there sufficient uncertainty about the alleged medial laryngeal to warrant their elimination from the list. In two other cases it has been found necessary to amend Lubotsky’s reconstructions to (8) **h_{1,3}reh₃d-* and (13) **Hieh₂g₁-*. Lubotsky’s law thus stands firm on twelve etymologies.

Of minor importance, in my view, is the fact that for six of these twelve items, viz. (2) **sleh₂g-*, (6) **ueh₂g₁*, (8) **h_{1,3}reh₃d-*, (11) **b^heHd-*, (12) **ueh₂g₁-* and (13) **Hieh₂g₁-* only short-vowel root forms seem to be available in Vedic and for one, (9) **k₁eh₂d-/1*, the alleged long-vowel variant is of uncertain affiliation.

4.7. It is possible that further material confirming Lubotsky’s law may yet be found. A case in point is GAv., LAv. *varəz-* ‘wirken’ < PIE **uRHg₁-* “mit einigen unaufgeklärten Fällen von Laryngalschwund [av. *vəṛəz*°]” (EWA 1: 242 s.v. *úrj-*), e.g. GAv. *vəṛəzyah-* n. ‘Wirken etc.’, *vəṛəzyātā-* f. ‘landwirtschaftliche Tätigkeit etc.’, *vəṛəzeyidyāi* inf. ‘zu wirken etc.’, which may indicate that consonantal *y* was effective in Avestan as the third consonant in the cluster *HDC* posited as a requirement for *H*-deletion by Lubotsky’s law (cf. Lubotsky’s 1981: 137 uncertainty about the effect of *y* in Sanskrit).

4.8. It is worth noting that what have been, and still by many are, taken to be exact correspondences between Ved. *bhaj-* and Gk. *φαγ-*, Ved. *mad-* and Gk. *μαδ-*, Ved. *śad-* and Lat. *cad-*, Ved. *yaj-* and Gk. *ἀγ-* etc. are, under Beekes’ and Lubotsky’s laws, inexact correspondences between a shortened full grade in Vedic and a zero grade in the western languages, e.g. **Hieh₂g₁-* > pre-IA **yeg₁-* >

yag₁*- vs. western languages **Hih₂g₁*- > **yag₁*-/hag₁*-. It is no doubt the peculiarity of this situation that helps to account for the rarity of alleged PIE **a*.

Not all alleged instances of PIE **a* can be explained in this way, nor did Lubotsky (1989) by any means limit himself to examples of this kind. On the other hand the nonexistence (or at worst extreme rarity) of PIE **a* supplies an important theoretical underpinning to both Lubotsky's and Beekes' laws and there is still a residue of material not considered or not solved by either scholar. To some of this we now turn.

5. PIE **a*

5.1. As foreshadowed above, the treatment of PIE **a* given here is intended only to plug the gaps in Lubotsky's own (1989) attack on PIE **a*. These gaps comprise the one case Lubotsky (1989: 65, n.4) admitted to being unable to explain together with the items put forward by Lubotsky's chief critic Mayrhofer (1986: 170, 172f. and in the literature mentioned there) which either Lubotsky ignored or concerning which there is more to be said. (A further paper covering additional material from other sources is in preparation).

5.2. The one case Lubotsky was unable to explain in his 1989 paper is still regarded in the present century by Meier-Brügger (2003: 93) as evidence for PIE **a*, viz. Gk. *λαιός*, Lat. *laevus* 'left'. In view of the circumflex of SCr. *lǐjevī* 'id.' Lubotsky evidently felt precluded from reconstructing the item with an internal laryngeal. Schrijver's (1991: 203) solution is to place the laryngeal before the root vowel (i.e. **lh₂ei-uó-*), which is certainly the simplest possibility since **leh₂iuós* would yield **láHywos* following Hirt's law (cf. **k₂eh₂ulós* > PBalt. **káHwlos* 'stalk, core, staff', cf. Illich-Svitych 1979: 63) with fixed stress and acute on the first syllable and so seemingly no chance of eliminating the laryngeal by Meillet's law.²⁸

But there is, I think, an alternative. Another adjective with internal laryngeal is usually cited with acute root vowel in etymological works (Trautman 1923: 306; Kortlandt 1975: 57; Vasmer/Trubačev s.v. *sívyj*; Mayrhofer EWA s.v. *šyāvá-*), viz. SCr. *sǐv*, *sǐva*, Slovene *sív*, *síva* 'grey', yet several modern dictionaries of SerboCroat (Jurančič 1955 s.v.; Tolstoj 1957 s.v.; Benson 1977 s.v.), including Gluhak's (1993 s.v.) etymological work, give only circumflex forms *sǐv*, *síva*. Since beside these are forms such as *sǐv(k)ast*, *sǐv(k)asta* 'greyish' which can represent trisyllabic forms with shortened first syllable (Kortlandt 1994: 91 = 2002: 1), we must assume that

²⁸ Slovene *zvēr* 'animal' with loss of acute by Meillet's law beside Latin *ferus* <**g₁^hueh₁ro-* (in which "oxytonesis seems likely", Schrijver 1991: 337) does not authorize a reconstruction **leh₂i-uó-* because the Slovene word derives not from the *o*-stem but from the consonant stem **g₁^hueh₁r-* (ibid.).

the circumflex forms are at least as original as the acute forms, which in SerboCroat perhaps represent the dialect of Vuk Karadžić. Since the oxytone Vedic cognate *śyāvá-* < **k₁ieh₁uó-* (Mayrhofer EWA s.v.) points to Balto-Slavic mobility we may have to allow for the possibility of variation in originally mobile Slavic paradigms between disyllabic forms with acute root vowel due to Hirt's law and trisyllabic forms with circumflex root vowel by Meillet's law (or rather its precursor, see Kortlandt's Slavic chronology [KSC]²⁹ §5.2). Levelling may favour the circumflex root in adjectives because of the greater number of trisyllabic forms in the fem. sg. stem with levelled *-eh₂-*, viz. the gen., dat., loc. and ins., as opposed to only the abl. and dat. of the *o*-stems, both stems having the same number of trisyllabic forms in the plural (nom., acc., dat., loc., ins. versus nom., abl., dat., loc., ins., see Beekes 1995: 182, 192). Thus this kind of levelling could be responsible for the circumflex in SCr. *lījev-ī* < **leh₂iuós* as well.

Unfortunately it seems not possible to demonstrate an undoubted acute in a presumed Baltic cognate. Berneker (1924 s.v. *lėṽb/1*) mentions Lith. *iš-laivóti* 'Biegungen machen' and notes that in glosses Lat. *laevus* often means 'gekrümmt', information that is repeated by Vasmer/Trubačev (1986-1987, s.v. *lévyj*). I cannot find this word either as compound or simplex in Fraenkel (1962-1965) or Trautmann (1923) or Kurschat (1968-1973) or Derksen (1996); but the last-named source (pp. 295f.) lists four Lithuanian verbs in *-óti* all with acute root syllables, some but not all of which are originally so. Thus it would appear impossible to determine whether a putative acute in the root of *iš-laivóti* is original or secondary. What is clear is that there is no need to reconstruct PIE **a* in the etymon of these words.

5.3. Of the material presented directly by Mayrhofer (1986: 170, 172f.) Lubotsky (1989) deals successfully, in my view, with **mag₁-* 'knead', **mad-* 'be intoxicated' (p. 54), **k₁as-o-* 'grey; hare' (56f.), **sauso-* 'dry' (58f.), **kaiko-* 'blind' (62; cf. also Schrijver 1991: 266), and cites Kortlandt's useful reconstructions for **g₁^hans-* 'goose', **sal-* 'salt', **nas-* 'nose'³⁰ (59-61). Lubotsky's treatment of **iag₁-* 'venerate, holy' (p. 54f.), has not been damaged by the further discussion required by the new reconstruction of the root as **Hiag₁-* (§3 above). On **d^hal-h₁ró-* 'blooming' see §2.1.2 above. In view of Beekes' (1988b: 29) puzzled remark concerning **mag₁-* it should be noted **(i)** that Klingenschmitt (1982: 219 n. 76) reminds us of Leumann's (1959: 163f.) demonstration that the length in Attic *μᾶζα* is secondary and **(ii)** that the acute on the *a*-vocalism of the root of SCr. *māzati* can be explained by Winter's law, none of which, however, precludes explanation

²⁹ This appears in several of Kortlandt's publications, notably (complete, §§1-12.6 plus postscript) in 2002, essentially a cleaned up reissue of 1994, and in variously truncated or partly augmented or otherwise slightly modified forms in 2003, 2005, 2007c.

³⁰ For this last see also Beekes' (1988b: 43 n.2) similar alternative: the truth seems to lie in a combination of the two.

of the other cognates by Beekes' law, but merely deprives us of independent proof of the laryngeal.

5.3.1. To Schrijver's (1991: 96) fine treatments of **kap-* 'seize; hold' and **kápro-* 'buck' I wish to add a proposal to secure the presence of **h₂* in **kapro-* by treating it as a derivative of **kap-* 'seize; hold'. This is suggested by Meier-Brügger's (2003: 82f.), gloss on **kápro-*, viz. "used to designate various animals as 'snappers'", together with the obvious Slavic reflex of the alleged **kap-* – despite its being ignored by Pokorny (1959: 527f.) – viz. *xap-* in OCS (Supr., see Severjanov 1904: 135.22) *xapǫ|jǫšte* 'δάκνοντες', i.e. 'biting, snapping' (Sadnik/Aitzetmüller 1955: 243, no. 289; Vasmer/Trubačev 1986-1987: s.v. *xápat*'; KSC, postscript),³¹ which can represent a levelling of *xop-/kap-* < **k₁h₂e/op-* / **k₁e/oh₂p-* or, more probably, a morphological lengthening of *xop-* < **k₁h₂op-* both forms being represented in the aspectual pairs (pf./impf.) Ukr. *xopýty/xapáty* 'snatch', Cz. *chopit/chápat* 'id.', Slk. *chopit/chápat*', LSorb. *chopiš/chapjaš* 'begin' etc. In view of Gk. *καπή* 'grip' it is clear that we have here a case of schwebeablaut. Hence Lat. *caper*, Gk. *κάπρος* no doubt point to Schrijver's *r*-stem **k₁h₂épr-* / **k₁h₂pér-* as perhaps indicated by the accentual difference between Gk. *ὕδρος*, *ὑδρᾶ* 'watersnake' and Ved. *udrá-* m. 'aquatic animal' beside full grade in Gk. fem. *αἴθρη*, *αἴθρᾶ* 'clear sky, bright weather' (< **h₂éid^h-r-eh₂*) (Brugmann 1906: 347).

Ved. *káprth-*, *kaprthá-* 'penis' – though semantically not particularly apt if **kh₂epr-* no longer refers uniquely to male animals (pace Pokorny 1959: 529) – may yet belong if **kh-* > *k-* by Grassmann's law.

5.4. Mayrhofer (1986: 170) also noted with evident approval Bomhard's (1976: 210-212) list of **a*-etymologies. Of these the following require no further comment: **laiuó-* 'left' (§5.2 above); **mad-* 'be wet, be intoxicated', **k₁as-o-* 'grey; hare', **sauso-* 'dry', **g₁hans-* 'goose', **sal-* 'salt', **nas-* 'nose' and **kaiko-* 'blind' (§5.3 above); **kapro-* 'snapping animal' (§5.3.1 above). European (Greek, Germanic, Celtic, Armenian) **drak₁ru* beside Eastern (Ind.-Iran., Toch.) **ak₁(a)ru-* and Hitt. *išhahru-*, all meaning 'teardrop', were explained by Kortlandt (1985b), as reported by Schrijver (1991: 98). Lubotsky (1989) deals also with **daiuer-* 'husband's younger brother' (p. 59), **k₂ar(k₂aro)-* 'hard, firm, swift' (p. 62). Better than Lubotsky's (1989: 53) general warning against relying on Italo-Celtic *a* in reconstructing PIE **a*-vocalism, are Schrijver's (1991) treatments of **b^hard^h-* 'beard'

³¹ Presumably the Slavic item had fixed stress if the laryngeal was to survive Meillet's law at KSC §5.4 in order to cause spirantization at §5.7. Incidentally, Kortlandt finds the laryngeal involved in this development always to be *h₂* while Lubotsky (1989: 56) finds two reasons for reconstructing *h₁* in the case of Slavic **xoi-r/d-* 'grey/grey headed'. No doubt both these laryngeals can cause this aspiration: Beekes' (1995: 181) has aspiration by *h₁* in Ved. gen. sg. *pathás* 'path' (see also §5.5 below).

(p. 488), **b^har(e)s-* ‘grain, spelt’ (p. 113f.), **k₁an-* ‘sing’ (pp. 95, 113). Also better than Beekes (1988b: 27) is Schrijver (1991: 475f.) on **lak₂u-* ‘pond’, the latter also dealing with **g^hau-* ‘boast’ (pp. 226, 527).

5.4.1. It is tempting to add to Schrijver’s (1991: 100f.) inconclusive conclusion regarding **kaput-* ‘head’, viz. it may have **kHp-* or be non-IE, that Walde/Hofmann (1965, 1: 163f.) point out the prevalence of the suffix *-ut-* in the names of body parts and, although ultimately preferring a different etymology, do consider possible a connection with **kh₂(e)p-* ‘seize = fassen’ on the basis that the head is a container = Gefäß; I think the same connection is possible on the basis that the head is the snapping part of many creatures (cf. §5.3.1 above).

5.4.2. For **skaiuó-* > Gk. *σκαῖός*, Lat. *scaevus* ‘left, western’ Schrijver (1991: 270) reconstructs **skeh₂iuó-* (or **skh₂eiuó-*), neither Frisk nor Chantraine (s.v.) giving any etymology and Frisk explicitly rejecting comparisons recorded by Walde/Hofmann (s.v.). Since the left (and the west) is often connected with the dark side, it is tempting to connect these words with Gk. *σκαῖός* ‘shady’, *σκιά* ‘shade’, for which Mayrhofer (EWA s.v. *chāyā*) reconstructs internal **h₁*, apparently unaware that beside Gk. *σκηνή* is Doric *σκᾶνᾶ* and that the vocalism of OCS *sěnbь*, characterized as “ambiguous” by both Frisk and Chantraine (s.v. *σκιά*), can derive from **sk₁éh₂in-* > **sk₁ain-*, the short vowel in SCr. *sjěn* pointing to root stress as well as acute (Kortlandt 1975: 63); though if Kortlandt (1979: 58f.) is right about the fate of **sk₁*- then the Slavic word must have its initial from forms in **sk₁h₂i-* (so essentially Kortlandt *ibid.*) or from a form without **s-*. Likewise *σκιά* for ***σχιά* < **sk₁h₂iéh₂* must have its onset from *σκαῖός*. It seems therefore that both groups can be united as **sk₁eh₂(i)-* with various suffixes.³²

5.5. Gamkrelidze (1979), also cited by Mayrhofer (1986: 170), presents a small number of examples in support of his theory of accessive/extrovert consonantal sequences beginning with a tectal as the conditioning factor for PIE **a*. This theory is evidently worthless because its supports may all be dismissed as follows:³³

(i) **g^hab^h-* (e.g. Lat. *habēō* ‘have’) and **k₂ap-* (e.g. Gk. *κάπτω* ‘gulp down’) are reconstructed both in LIV₂ (pp. 195, 344) and by Schrijver (1991: 92f., 96,

³² Connection with *s*-less Ved. *śyāmá-* ‘black, dark-coloured’, *śyāvá-* ‘dark brown, dark’ seems impossible in view of Lith. *šėmas* (also *šēmas*) ‘dark blue’, these words therefore having **k₁ieh₁-* (Derksen 1996: 94; Gamkrelidze/Ivanov 1984: 230, 539, whence ultimately also Mayrhofer EWA s.v. *śyāvá-*); see also §5.2 above.

³³ Even Schindler (1972: 5), admittedly without any visible collection of data, considered that only something over half the cases had a tectal in the root and that only in contact with vowel, not necessarily preceding it, an observation Mayrhofer (1986: 169) also appears to find significant.

despite the curious gloss “to seize eagerly” assigned there to Gk. *κάπτω*) with internal laryngeal;

- (ii) **k₁at-* (e.g. OIr. *cath* ‘battle’): if Gk. *κότος* n. ‘strife’ is cognate then in view of the constant o-vocalism of related Greek forms we can derive everything from the developed proterodynamic paradigm nom. sg. **k₁h₃étos*, gen.sg. **k₁h₃tésos*; **k₁h₃otor-* in Russian *kotorá* explains lack of palatality in the initial consonant just as *h₂* and *h₁* inhibit satem assibilation in Slavic *xopiti* ‘snatch’ and PSI. **xoi-ro-* ‘grey’ (see fn. 31 above). With *h₃*, however, there is no aspiration, which is in keeping with the propensity of this laryngeal to cause voicing in some other languages. Absence of voicing in *κότος* is consistent with the principle that voicing by *h₃* in Greek only occurs, if at all, in postaccentual environments (§3 above), perhaps in Vedic too, cf. **k₁h₃ét-* > *śát-ru-* ‘enemy’ beside *píbatí* ‘drink’. Voicing/preglottalization by *h₃* in Slavic has so far only been detected in a medial consonant (Woodhouse 2008: 21). Voicing in Celtic requires nonsyllabic *h₃*.
- (iii) **kapro-* ‘snapping animal’ and **kap(ut)-* ‘head’ have been dealt with above (§5.3.1 and §5.4.1, respectively).

Other material cited by Gamkrelidze as “not completely clear instances” (*ne vpolne jasnye slučai*), viz. **sal-*, **nas-* and **g^hans-*, are also no longer mysterious (see §5.3 above).

5.6. Klingenschmitt’s (1982: 260 n. 1) non-**h₂ues-* derivation of Gk. *ἄστν*, Ved. *vástu* based on PIE **a* and approved by Mayrhofer (1986: 170), has been superseded by that of Beekes (1988b: 24) not employing PIE **a*.

5.7. Mayrhofer (1986: 170) is dismissive of Kuryłowicz’s 1976: 132f.) proposal that a number of words appearing to attest PIE **a* are intra-IE loans or loans into pre-IE. Most of these have been dealt with above. Of the remainder:

Schrijver (1991) deals with Lat. *haedus* ‘kid’ (p. 269), *faba* ‘bean’ (p. 488), *far*, *farris* ‘flour’ (pp. 113f., 487), and finds Lat. *cattus* not worth discussing.

5.7.1. This leaves the truly problematic **tauros* ‘steer’ – still cited by Meier-Brügger (2003: 95) as the example of PIE **au* – since Gk. *ταῦρος*, Lat. *taurus* and Oscan *taurom* definitely point to *a*-vocalism while Lith. *taūras*, SCr. *tūr* corresponding to a Greek barytone definitely rule out a medial laryngeal. Chantraine (1999 s.v.) and Ernout/Meillet (1951 s.v.) both regard the *a*-vocalism as a sign of popular, low-caste vocabulary, presumably ruling out an origin in regular PIE.³⁴ This may explain the absence of the word in the Mycenaean texts,

³⁴ Doubtless to be resisted is the temptation, given *o* for *u* in the Mycenaean doublet *te-u-po* [*te-o-po*] (Baumbach 1968: 238) and *o* for *ou* in *qo-qo-ta-o* beside *qo-u-qo-ta*

which would otherwise be curious given that society's passion for bulls, although the origin of this vocabulary remains obscure.

Rix (1976: 48), Frisk (1960-1972 s.v.) and Walde/Hofmann (1965 s.v.), on the other hand, are quite open to the idea of a loan from Semitic, the last two sources citing Aramaic *tōr* as the most likely reflex of P-Semitic **tawr-*. But this suggestion is somewhat problematic. Since the Greek word occurs in the Iliad it would be good if we could isolate a form at the appropriate period with initial stop and internal diphthong. The earliest record of the Aramaic realization of P-Sem. **t* as *t* appears to be somewhat patchy and mingled with mixed signals regarding diphthongal reduction. These are all found on the Ashur ostrakon, dated around 650 BCE (Gibson 1975: 98-110, esp. 99, 102, 106-108), which is rather late for our purpose. That stop and diphthong could coexist in Aramaic seems to be shown by Peshiṭta Syriac (e.g. Luke 15. 23) (determinate state) *tawrō* (Jennings 1962: s.v.) if we can believe Nöldeke (1904: 8) that a diphthong is what the writing *aw* represents. Obviously this is far too late to be the source of our word in IE, nor can it realistically encourage us to suppose that the Aramaic dialect that supplied the basis of post-Mycenaean Greek alphabetic writing (see Segert 1978: 113f.) also had *t* < **t* and diphthongs and was thus able to supply our word to the Greeks as well, whence it would then have spread to other Mediterranean peoples, eventually reaching also the Slavs and the Balts.

There is, however, an alternative Semitic explanation. Bomhard/Kerns (1994: 100f.) adopt Martinet's suggested **t^{y/hj}* as the Proto-Semitic and Proto-Afroasiatic (PAA) parent of Semitic **t*, which still represented a distinct phoneme in Old Akkadian (c. 2500-1950 BCE) where, according to Walter Sommerfeld (in von Soden 1995: 36), it was the only sound written with Š-signs (the designation is based on values assigned during the original decipherment of Late Assyrian). It is not easy to determine what kind of sound this writing denoted at this period. Traditional Semitic *s*, *z*, *š*, now accepted by Sommerfeld (ibid. p. 35), following Faber (1985 [not "Farber"!]), as representing affricates in the earliest texts, are written with Z-signs in Old Akkadian, while traditional *š* and *ś*, now accepted as originally representing plain [s] and a lateral sibilant, respectively, are written with S-signs. Consequently it is entirely possible that during the Old Akkadian period or at least in its earlier stages Semitic **t* was neither affricate nor sibilant but was indeed pronounced something very like the Bomhard/Kerns/Martinet **t^{y/hj}*. And if this was in fact an aspirated sound then it seems very likely that the PAA or P-Sem. segment **t^{y/hj}a-* would have been perceived by PIE speakers of appropriate date as **th₂e-* or **tha-*, with subsequently the usual general lapse of the nonsyl-

(ibid.: 225), to assume *i* for *e* and see in the Mycenaean place names *ti-o-ri-jo* (ibid.: 240) and *to-ro-wa-so* (ibid.: 243) derivatives of an original ablauting **teur-/*tour-*.

labic laryngeal, much as Schrijver (1991: 266) – though with an uncharacteristic deficiency of usable detail³⁵ – suggests.

Perhaps we can revisit our Aramaic-Greek story and thus retain our post-Mycenaean angle by supposing, not innovation, but late retention by the relevant Aramaeans of Martinet's PAA/PSem. **t^{y/hj}* since a late shift of **t^{y/hj}* to Aramaic *t̄* might also explain why Aramaic lacks the further change *t̄ >* shared by Phoenician, Hebrew, Akkadian and “mirror-written” Ugaritic (Gordon 1965: 16).

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³⁵ Schrijver's “Arab. *twr*” is either a misprint or a mistake; it can hardly be meant to represent a modern dialect form.

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