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Several Indo-European Words for ‘Dense’ and Their Etymologies

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The article offers an etymological analysis of some of the Indo-European nominal formations with a meaning ‘dense’ and similar or derived meanings such as ‘thick’, ‘tight’ or ‘frequent’. The Proto-Indo-European roots that are discussed include **temk-* ‘to join, coagulate, solidify’, **tum-* ‘to swell, become thick’, **(s)tegʷ-* ‘firm, impenetrable’ and the compound **dbʰ-(h₂)mǵʰ-* ‘dense, frequent’. The majority of words discussed are Baltic, Slavic and Germanic, but the discussion necessarily involves the etymologies of words in the other branches of Indo-European as well.

Proto-Indo-European **dbʰ-(h₂)mǵʰ-u-*

A Proto-Indo-European word for ‘dense, thick’ is reflected in Skt. *bahú-* ‘many, much, frequent’,¹ Hitt. *pankuš* ‘entire, complete’, Gr. *παχὺς* ‘thick, dense’, Latv. *biezs* ‘dense, thick’, *bieži* ‘frequently’, OAv. *bəzuuant-*² ‘dense’, NP *dabz* ‘thick, coarse’, Arm. *bazum* ‘much’.³

¹Abbreviations used in the article are the following: Arm. Armenian, Av. Avestan, Bret. Breton, Cr. Croatian, CS Church Slavic, Cz. Czech, E English, G German, Goth. Gothic, Gr. Greek, Hitt. Hittite, Icel. Icelandic, Ir. Irish, Lat. Latin, Latv. Latvian, Lith. Lithuanian, MHG Middle High German, MIr. Middle Irish, MW Middle Welsh, Norw. Norwegian, NP New Persian, OAv. Old Avestan, OCS Old Church Slavic, OE Old English, OFri. Frisian, OHG Old High German, OIr. Old Irish, OPr. Old Prussian, ORu. Old Russian, OS Old Saxon, OSwe. Old Swedish, OW Old Welsh, PCl. Proto-Celtic, PGm. Proto-Germanic, PIE Proto-Indo-European, Pol. Polish, PSl. Proto-Slavic, Ru. Russian, S Serbian, Skt. Sanskrit, Sln. Slovene, ToA Tocharian A, ToB Tocharian B, W Welsh, YAv. Young Avestan.

²On OAv. *ə* < **a* before *-u-* see de Vaan 2003: 458.

³A similar but unrelated word is found in Gr. *δανλός* ‘thick, shaggy’, *δασύς* ‘hairy’, Lat. *dēnsus* ‘dense, thick’ < **dns-u-*, perhaps also here Hitt. *daššuš* ‘strong, powerful, heavy’ (Kloekhorst 2008: 853). The

Derivatives from the adjective are OAv. *dabāzah-*, YAv. *bašnu-* ‘thickness’, OAv. *dabāzaiti* ‘to support, consolidate’, perhaps also ON *bingr* ‘part of a room’ < *‘storage’ < *‘heap’? The more archaic meaning would be preserved in OSwe. *binge* ‘bin for storing corn’, Norw. *bunga* ‘small heap’, Icel. *bingur* ‘stock, heap’ (Pokorny 1959: 128, De Vries 1977: 37). We can reconstruct Proto-Indo-European **d^(h)b^h(e)Ng^h-u-*, with the initial cluster on the basis of the Iranian cognates (Beekes 1988: 78). Iranian appears to be conservative when it comes to certain consonant clusters (e.g., Av. *fštāna-* ‘breast’ < PIE **pst-en-*). Some initial clusters, however, must have arisen secondarily within Iranian, e.g., Av. *ṭkaēša-* ‘religious teachings, religious teacher’ with secondary *ṭ-*, probably through reinterpretation of the compound *aniia.ṭkaēša-* < **anīiat.kaēša* ‘having something else as religious teaching’ (Narten 1995: 217) and YAv. *xšuuas* ‘six’ with regular *š-* > *xš-* (Hoffmann & Forssman 2004: 103). There is, however, no evidence that the initial cluster of the words concerning us here is secondary, so it must be old and have been simplified in the other branches. A parallel preserved initial **db-* is found in the verbal root *dab-* ‘to deceive’, e.g., OAv. 2pl.pres.act. *dabənaotā*, and its derivative *dabaoman-* ‘spell’. In Vedic, zero-grade forms of the same root are only attested in non-initial position: *ádabdhā-* ‘undeceivable’, *ádbhuta-* ‘infallible’, *ádbhuti-* ‘undeceitfulness’, cf. the secondary full grade of the present tense *dabhnóti* (cf. Narten 1995: 384, fn. 12).

Lat. *pinguis* ‘fat, greasy’ is also often connected to Skt. *bahú-* etc., but its initial *p-* is problematic. It has been

etymological connection of the Latin and Greek words depends on whether one believes Gr. -s- can reflect PIE *s after *n (Beekes 2010: 305). Another adjective with roughly the same meaning is later Latin (4th c.) *bassus* ‘thick’, which is sometimes thought to be an Oscan loanword (Walde & Hofmann 1938: 98). A connection with Latin *dēnsus* from an earlier **db̥yss-* is very uncertain because the exact development of Oscan internal *-nss- is unclear (Buck 1904: 73), one might expect it to yield -f instead of -ss- (cf. Rix 1986). The geminate sibilant is reminiscent of that in synonymous Lat. *grossus* ‘unripe, thick’ and OIr. *bras* ‘great, boastful, defiant’, MW *bras* ‘fat, thick’. It is disputed whether the Italic and Celtic forms go back to a single source (cf. Matasović 2009: 74).

suggested that the Latin word contains the root of Indo-European **piH-ur/n-* 'fat' (Skt. *pīvan-* 'fat, swollen', Gr. *πίαρ* 'fat, tallow'), **piH-(m)n-* 'milk' (Av. *paēman-* 'mother's milk', Lith. *pienas* 'milk') (Walde & Hofmann 1938: 306). One may think of an older **pimos* or **pivō* 'fat' that was contaminated with **finguis* 'dense, thick' (ibidem). Although this analysis is dismissed by de Vaan (2008: 466), it seems convincing to me. It also inspires another look at the curious looking **d^(h)b^h(e)nǵ^h-u-*.

Most attested forms reflect the zero-grade of the root, with the exception of Skt. comparative *bāmhiyas-*, superlative *bāmhiṣṭha-*, *bamhayate* 'to strengthen, densify', Av. *bazah-*, *bašnu-* 'thickness' and, if related, ON *bingr* 'part of a room'. These forms are all secondary derivatives and therefore provide no conclusive evidence for the original ablaut-slot of the root (cf., e.g., Skt. *gāriyas-*, *gariṣṭha-* to *gurū-* 'heavy, hard' from PIE **g^wreh₂-*, cf. Lat. *gravis*). The only ablaut variant that can be reconstructed with certainty on the basis of the material presented thus far is zero-grade **d^(h)b^hnǵ^h-u-*. The for PIE unusually large number of occlusives in the root suggests that it was originally composed of more than one morpheme, i.e. that the final consonant of the root is a suffix, or, as will be proposed here, that the adjective was originally a compound. The adjective can be analyzed as a compound consisting of two otherwise known PIE elements: the root **d^(h)eb^h-*, on which see below, and the adjective **h₂mǵ^h-u-* 'narrow' (Skr. *amhú-*, OCS *ozbkb*, Goth. *aggwus* 'narrow', Gr. *αὔχην* 'neck'⁴). The latter contained an **m* in view of the nasal present Hitt. *hamank-*, *hamink-* 'to tie, betroth' < **h₂m-(o)n-ǵ^h-* (cf. Gr. *ἄγχω*, Lat. *angō*, Lith. *éngti* 'to strangle' < **h₂mǵ^h-*⁵).

⁴Through assimilation of **mǵ^h-u-* > **mǵ^{wh}-* to **uk^{wh}-* > **uk^h-* (Pronk 2010).

⁵The acute of Lith. *éngti*, *éngia* (also *eñgti*, *eñgia*) and cognates like *ingas* 'lazy', Latv. *īgt*, *īgstu* 'to suffer, pine' arose regularly from word-initial **h₂m-* (Young 2006, Pronk 2011), in the paradigm with a *yod*-present (Pronk 2012: 229ff.) and in the Latvian *sta*-present (Derkzen 1996: 285ff.). The non-palatal reflex of **ǵ^h-* must be the result of phonetic depalatalization, although it is unclear in which formation. One possibility is that it occurred in the oblique cases of the adjective, e.g. gen. **h₂mǵ^h-u-os*, cf. the depalatalization in the Lith. *u*-stem *pėkus* 'cattle' <

The first part of the compound can in my view be identified with PIE $*d^{(h)}eb^h$ ‘large, big’ and be compared to the root of Hitt. *dapiš* ‘whole, many, all’, OPr. *debikan* ‘large’ and OCS *dobľb* ‘noble, valorous’, PSI. $*debēlb^6$ ‘thick, fat’ (Ru. *debělyj*, S. Cr. *děbeo*, Sln. *děbel*) (Sturtevant 1934: 266; Pokorny 1959: 239). It is uncertain whether or not these words are related to OCS *dobrb* ‘good’, Lith. *dabà* ‘nature, habit, character’, *dabař* ‘now’, Goth. *ga-daban* ‘to happen’, perf. *gadob* ‘it fits’ with further possible links to Lat. *faber* ‘craftsman’, Arm. *darbin* ‘smith’ through a semantic shift ‘great’ > ‘good’ > ‘appropriate, capable’.⁷ Perhaps also here ToA *tpär* ‘high’, ToB *tapre* ‘high, fat’ < $*d^{(h)}b^h-ro-$ – these forms must then have a secondary *schwa* in the root – and ToA *tsopats* ‘great, large’ < $*d^hebh-$, if these words do not derive from PIE $*d^heub^h-$ ‘deep’ (Pokorny l.c.; Adams 1999: 280).

In a recent lecture⁸, Alexander Lubotsky argued that the original comparative to this adjectival root was PIE $*db^h-el-ies-$, which became $*b-el-ies$ through simplification of its initial cluster within the proto-language and is reflected in Skt. *bāliyas-* ‘stronger’, Gr. *βέλτερος*, *βελτίων* ‘better’, OCS *boľii* (f. *boľbši*, n. *bolje*) ‘bigger, better’. Lubotsky reconstructs the initial dental as non-aspirated $*d$ in order to account for the fact that the result of the cluster was a non-aspirated $*b$.⁹ I find his analysis convincing. If our analysis of Skt. *bahú-* etc. as $*db^h-(h_2)mġ^h-u-$ ‘dense, thick, frequent’ is correct, the compound is either younger than

$*pek-u$, gen. $*pek-u-os$ (cf. Kortlandt 2009: 30).

⁶With the same suffix as Lith. *didelis*, Goth. *mikils*, Gr. *μεγάλος* ‘large’, *ὕψηλός*, OIr. *uasal* ‘high’, Goth. *leitils* etc., eventually going back to an ablauting *l*-stem (cf. Beekes 1994: 8).

⁷The alternative etymology for Lat. *faber*, which connects it to OIr. *gobae* ‘smith’, seems preferable, cf. the discussion in Blažek 2010: 22 and 37ff.

⁸18 June 2012, at the 9th Indo-European Leiden/Münster Colloquium in Münster.

⁹In his terms these consonants are preglottalized, so the simplification of the initial cluster can be rewritten as $*'db > *'b$. I agree, but this is irrelevant for the present discussion. Note that a reconstruction $*deb^h-$ rules out the possibility that Goth. *ga-daban* ‘to happen’, perf. *gadob* ‘it fits’, Lat. *faber* ‘craftsman’, Arm. *darbin* ‘smith’, ToA *tpär* and ToB *tapre* ‘high’ derive from the same root.

the change $*db^h > *b-$, or the initial cluster $*db^h-$ was restored after this change.

The compound $*db^h-(h_2)m\hat{g}^h-u-$ can be assumed to have originally meant 'much-squeezed' *vel sim.* It is attractive to assume that Latin *pinguis* 'dense' < $*piH-$ 'fat' + $*h_2m\hat{g}^h-u-$ 'narrow' was formed when the original compound was still recognizable. In that case it is not a later contamination of $*finguis$ 'dense, thick' with a word for 'fat' as is traditionally assumed. We will proceed to discuss a number of potential derivatives from $*d^{(h)}b^h-(h_2)m\hat{g}^h-u-$ 'dense, thick, frequent', most of which are found in Baltic.

The new analysis of the Indo-European adjective meaning 'dense, thick, frequent' allows us to connect it to OPr. *kodesnimma*, *kudesnammi* 'as frequently as',¹⁰ Lith. *dāžnas* 'frequent', Latv. *dažs* 'some, several'. The Lithuanian and Old Prussian forms may reflect $*donžno-$, $*denžno-$ with regular dissimilatory loss of the first nasal as in Lith. *ugnis* 'fire' < $*ungnis$ < $*ng^w nis$ (Kortlandt 2009: 37). The Latvian formation must then be analogical to the *io*-stem *bieži* 'frequent', dial. *biēžs* 'dense' (which eventually derives from the same root). If correct, the Baltic forms go back to the allomorphs $*danž-$ and $*bimž-$ < $*dbom\hat{g}^h-$ and $*dbm\hat{g}^h-$. The reflex of the cluster apparently depended on the following sound: *b-* before labial *m*, *d-* before a vowel. In this context it is relevant that $*m$ assimilated to a following occlusive in Baltic unless it was vocalic, cf. *šimtas* 'a hundred' vs. *tūkstantis* 'a thousand' < $*d\hat{k}(o)mt-$ (on the latter word see Kortlandt 2009: 40).

Another possibly derived Baltic form is Lith. *bāžmas* 'multitude', which has no acceptable alternative etymology (it is in any case unrelated to Latv. *bāzt* 'to shove' because of the short root-vowel, *pace* Fraenkel 1962, Smoczyński 2007 s.v. *bažmas*). It too could reflect the Indo-European word for 'dense, thick' with nasal dissimilation. Lith. *bāžmas* would have to be an *o*-stem derivative from the adjective reflected in Latv. *biēzs*.

The reconstructed initial cluster may further allow us to connect OIr. *dai(n)gen* 'firm, fast, solid' (for alternative

¹⁰Initial *ko-*, *ku-* can be compared to the same element in *kuilgimai* 'as long as' and is the n.ins.sg. of *kas* 'who, what' (Trautmann 1910: 364), cf. *stu ilgimi* 'until' with *stu*, n.ins.sg. to the demonstrative pronoun *stas*.

etymologies see the discussion in Matasović 2009: 99). The vocalism of the Irish word is, however, problematic, because it remains unclear why the root vowel was not raised before **-ng-*, cf. OIr. *ing* ‘strait, difficulty’ < **h₂(e)mġ^h-*. Before **-nd-* and **-mb-* we find a few examples without raising (OIr. *land* ‘open space’, *camb* ‘crooked’, *and* ‘therein’ (but *ind-*)), which may be due to a following back-vowel (McCone 1996: 78). For the proposed analysis of OIr. *dai(n)gen* to be accepted it must be regarded as a similar exception in which no raising took place.

The Irish word is sometimes connected to Latv. *deņkst* ‘strong, healthy, important’, Ru. dial. *djáglyj* ‘healthy, strong’, OCS *nedogb* ‘disease’ (Derksen 2008: 106, 348). We may add Latv. *diņgt*, *diņgstu* ‘to be calm’, *sadiņgt* ‘to become stiff, rigid’ to this group of cognates.¹¹ The suffix of Latvian *deņkst* is comparable to that of *aūgst* ‘high’, *mīkst* ‘soft’ etc. (which will be discussed below), while Ru. dial. *djáglyj* has the suffix of OCS *doblb* ‘noble, valorous’, Ru. *debélyj* ‘thick, fat’ (cf. fn. 6 above). The main objection against the connection of the Balto-Slavic words with Skt. *bahú-*, Gr. *παχύς*, Latv. *bīezs* etc. is their apparent acute root. The Latvian adjective *deņkst* can only be connected if its acute arose as a result of metatony, e.g. in the *sta*-present *diņgstu* ‘to be calm’ < **‘to be stiff’* with subsequent spread to the adjective, which also has a suffix *-st-*. The accentuation of the Slavic forms is inconclusive because of the lack of forms in languages that provide information about the Proto-Slavic intonation of the root. The initial stress of Ru. *djáglyj* and its derivative dial. *djága* ‘strength’ may point to an acute, but without confirmation from other Slavic languages the accent of these words can easily be explained as secondary. A second potential objection

¹¹Not here Lith. *dėngti*, *dėngia* (also *dėngti*, *dėngia*), Latv. *diēgt*, *diēdzu* ‘to run’, which is related to Gr. *παχύς* ‘quick’ < **d^heng^h-u-*, and can in my view further be derived from the nasal present of PIE **d^heg^{mh}-* ‘to come close to, almost reach, pass’ (cf. Skt. 3sg.opt.act. *daghnuyāt*, Gr. *φθάνω*, see LIV s.v. **d^heg^{mh}h₂-*). The older connection of the Baltic words with OE *getingan* ‘to urge, press’, *tengan* ‘to hurry, urge’, *getenge* ‘near’, OS *bitengi* ‘pressing’, MHG *antengen* ‘to begin’, ON *tengja* ‘to connect’ < **deng^h-* ‘to press together’ (see Fraenkel 1962: 88f.) seems less attractive to me as the meaning ‘to hurry’ is limited to Old English. The Baltic acute is probably due to the *yod*-present, see Pronk 2012: 229ff.

against deriving the Balto-Slavic words in question from $*d^{(h)}b^h-(h_2)m\acute{g}^h-u-$ is their non-palatal $*-g-$, but this is hardly prohibitive in view of the equally unexpected non-palatal $*-g-$ in, e.g., Lith. *éngti* 'to strangle', Latv. *îgt* 'to suffer, pine' < $*h_2(e)m\acute{g}^h-u-$ (see fn. 3 above for a possible explanation). I conclude that OIr. *dai(n)gen* and PBSl. $*deng-$ 'firm' are likely to be derived from PIE $*d^{(h)}b^h-(h_2)m\acute{g}^h-u-$ 'dense, thick, frequent', even though there are some formal difficulties.

Proto-Balto-Slavic $*kimšta-$ and $*gumšta-$

Slavic has two adjectives meaning 'dense' that have cognates in Baltic but lack a clear further etymology: 1) OCS *čestb* 'frequent, dense', Ru. *částyj*, S, Cr. *čest*, Pol. *częsty* etc. (cf. Trubačev 4: 106), which must be related to Lith. *kimšti*, *keṃša* 'to stuff, cram', *kimštas* 'stuffed', Latv. *ķimst*, *ķemsu* 'to stuff, eat' and 2) CS *gostb* 'dense', Ru. *gustój*, S, Cr. *gŭst*, Pol. *gęsty* (more cognates in Trubačev 7: 87), Latv. *guosts* 'mass' (if not a borrowing from Slavic).

The structure of the Slavic adjectives is reminiscent of Baltic adjectives in $*-st/\acute{s}t-$ such as Lith. *añkštas* 'narrow', *aukštas* 'high', *kārštas* 'hot', *minkštas* 'soft', *šykštas* 'parsimonious, tenacious', Latv. *aũgst*, *kaŗsts*, *mũksts*, *sĩksts* and *dēñkst* 'strong, healthy, important' discussed above. Lith. $-\acute{s}-$ reflects either an Indo-European palatovelar or $*s > \acute{s}$ as a result of the *ruki*-rule. The origin of the suffix $*-st/\acute{s}t-$ is not entirely clear. It may be identical to Germanic $*-st-$ in OE *priste*, OS *thrīsti* 'bold, pushy' < $*prist-ia-$ < $*prinh-st-$ (on which see Krahe 1949: 243), but because the Germanic suffix $*-st-$ usually derives nouns, PGm. $*prist-ia-$ may rather be a derivative from an earlier abstract noun $*prinh-st-$. Comparison with the suffix of Lith. *ligŭstas* 'sickly' to *ligà* 'illness' and *miegŭstas* 'sleepy' to *miēgas* 'sleep' (cf. Krahe 1949: 234) is also very uncertain. I think that the adjective Lith. *aukštas*, Latv. *aũgst* 'high' may have been the origin of the suffix instead. This adjective is likely to be the original *to*-participle to PIE $*h_2uegs-$ 'to grow' (Skt. *vakṣ-*, Av. *vaxṣ-*, ToA *oks-*, B *auks-*, Gr. *αὔξω* 'to increase, strengthen', ON *vaksa*, OHG *wahsan*, Lith. *vešėti*), which could be analyzed to contain a suffix $-\acute{s}ta-$ in Baltic on the basis of the

cognate verb L4ith. *áuhti*, Latv. *áuġt* ‘to grow’, which also influenced the vocalism of the adjective. The suffix *-s/šta-* subsequently spread from **augštas* to other adjectives.

In the case of Lith. *kimšti*, Latv. *ķimst* ‘to stuff’ the opposite development may have taken place. From a formal and semantic point of view, it is attractive to derive these verbs from PIE **kem-* ‘to press (down)’ (ON *hemja*, Arm. *k’amem*, perhaps also Skt. *cāmati* ‘to gulp’). The sibilant must then be an inner-Balto-Slavic innovation. A scenario that would account for the root-final sibilant is that **š* was first introduced in the *to*-participle (**kmto- >> *kmšto-*) in analogy to *áuķštas* and other adjectives in *-št-*.¹² The participle was subsequently analyzed as containing a root **kmš-*. The introduction of the sibilant in the participle must have been Balto-Slavic, because the sibilant is also present in the Slavic cognates (OCS *čestb* etc.).

CS *gostb* ‘dense’ etc. and Latv. *guosts* ‘mass’ can be analyzed as **gums/što-*, an adjective in **-st/št-* from PIE **g^{wh}en-* ‘solid, enough’ (Skt. *āhanās-* ‘thriving, full’, *ghana-* ‘solid, thick’, Lith. *ganà* ‘enough’, OCS *goněti* ‘to be enough’), the root with which these words are traditionally connected (cf. Fraenkel 1962: 132f.). Alternatively they may reflect an adjective in **-st/št-* from PIE **gem-* ‘to grasp’ (OCS *žeti* ‘to press’, ToB *kāmā-* ‘to carry, take’, Latv. *gūmt* ‘to grab’, Gr. *έγωτο* ‘took’, perhaps also *έγωω* ‘to be full (of)’ (Sławski 2001: 170f.)). The verbal root came to mean ‘to press’ in Slavic. The derivation of CS *gostb* from **gem-* forms an exact parallel to the derivation of OCS *čestb* from PIE **kem-* ‘to press’. The vocalism of CS *gostb* corresponds to that of Latv. *gūmt*.¹³

¹²The predecessor of Lith. *tirštas* ‘thick, dense (of a liquid)’ which is in origin the *to*-participle to the verbal root of *teršti* ‘to pollute, soil’, *tušti* ‘to trouble, make muddy (of water)’, may have played a role as well. The root of *tirštas* is traditionally compared to that of Lith. *trėšti* ‘to rot’, Lat. *stercus* ‘manure’, W *trwnc* ‘urine’, ON *prekkr* ‘muck’ < PIE **(s)trek-* (cf. Fraenkel 1965: 1083, 1101f.). Another similar formation is found in Slavic: PSŁ. **tblstb* ‘thick’ (ORU. *tblstb*, S, Cr. *üst*, Pol. *thusty*) < **tulžt-*, cf. Lith. *tužiti* ‘to swell’.

¹³Ru. dial. *guť* (f.) ‘overgrown, impenetrable area’ and Cz. *hutný* ‘dense, solid’ appear to be cognate to **gostb* ‘dense’ (Machek 1968: 191, Trubačev VII: 91). They probably reflect an abstract noun **gotb* (with a derived adjective **gotb(nb)* which can be analyzed as a *ti*-stem to the

Proto-Indo-European *teg^w-

On the basis of Celtic and Germanic, we can reconstruct an adjective *teg-u- 'thick' (Matasović 2009: 377): OHG *dicki*, OE *ðicce*, ON *þykkir*, *þjokkr* 'thick, tight' < *þeku-, OIr. *tiug* 'thick, dense, solid' < *tegu-, W *teu*, Bret. *teo* 'thick' < *teguo-. It seems to me that the same root is reflected in Arm. *t'anjr* 'thick, tight' < *tng-u- with regular palatalization of *g^(w) before *u (Pedersen 1906: 362), Lith. *stìngti*, *stìngstu* 'to stiffen, solidify', *sténgti*, *sténgia* 'to be able, exert oneself, resist, oppose', *stangùs/stángus* 'stiff, rigid', *stangrùs*, *stìngrùs*, *stìngrus* 'tight', *tingùs* 'lazy', *tìngti*, *tingsta* 'to become slow', *tingėti*, *tìngi* 'to be lazy', Latv. *stīngrs* 'stiff', *stīņgt* 'to stiffen, become rigid', *stīndzināt* 'to solidify', OCS *těžbkb*, S, Cr. *těžak* 'heavy, difficult', Ru. *tugój* 'tight', Cz. *tuhý* 'solid, tough' < PSl. *tog-. The nasal in the Armenian and Balto-Slavic forms would have to have been generalized from a nasal present *(s)teng-. The prevailing acute of the Baltic forms can hardly be due to metatony and points to a root *(s)teng^(w)-. The Lithuanian adjective *tingùs* has secondary circumflex intonation (cf. Derksen 1996: 162f.). The Slavic forms are ambiguous with regard to the original intonation of the root as they have mobile accentuation. Although it seems attractive to connect the forms cited above to the root *teg- 'thick, tight' attested in OHG *dicki*, OIr. *tiug* etc., they have traditionally been analyzed differently.

Olsen (1999: 165) proposed that the Armenian word is a contamination of PIE *b^hng^h-u- (our *db^h(h₂)mġ^h-u-, see above) and *temku- 'tight' (see below) instead, which of course cannot be ruled out. The Balto-Slavic words (Lith. *stìngti*, *sténgti*, OCS *těžbkb* etc.) are usually connected to the Slavic verbal root *teg- 'to pull, stretch', cf. its derivatives Sln. *těg* 'traction; burden', Cz. *tíha* 'weight, burden' = Ru. *tjága* 'traction'. The intonation of this verbal root *teg- is ambiguous and does not indicate whether the root-final velar was aspirated or not (Winter's law).¹⁴ It is therefore

verbal root from which *gostb derives, i.e. PIE *g^{mh}en- or *gem-.

¹⁴The initial syllable of the verbal formations *tegne- and *teza- 'to pull, stretch' is consistently non-acute (Ru. *tjanút*, 1sg.pres. *tjanú*, 3sg. *tjánet*,

quite possible that the Slavic verbal root **teg-* ‘to pull, stretch’ reflects the nasal present derived from **teg^(w)-* ‘thick, tight’. Its meaning would then have developed from ‘to draw together, hold back, tighten’. There is, however, an alternative etymology for the Slavic verb which seems at least equally possible. From a formal and semantic point of view, Slavic **teg-* ‘to pull, stretch’ is reminiscent of PIE **ten-* ‘to stretch’ (Gr. *τείνω*, Skt. *tanóti*, Lat. *tendō*, Lith. *tęsti*, Goth. *atpinsan*). It may have obtained its **-g-* in analogy to the semantically similar Slavic **seg-* ‘to reach’ < PIE **seng-* ‘to fasten’ (Skt. *sajati*, Lith. *sęgti*). The association with Balto-Slavic **teng-* ‘heavy, solid, difficult’ would then be a late, Slavic innovation.

Lith. *tingùs* ‘lazy’, OCS *těžbkb* ‘heavy, difficult’ etc. are traditionally connected to ON *þungr* ‘heavy’, *þyngja* ‘burden’ and reconstructed as **teng^h-* (De Vries 1977: 626f., Derksen 2008: 493). The Germanic forms would rule out root-final **-g-*. They are, however, ambiguous with regard to the origin of the velar as they may alternatively reflect a Verner-variant of the root found in ON *þétrr* ‘tight, dense, thick’ < **penhta-* < PIE **temk-to-* (see below), cf. the probably cognate ON *þangr* ‘seaweed’ if < ‘dense mass’ (De Vries 1977: 605). I therefore prefer to separate ON *þungr*, *þyngja* from the Balto-Slavic forms, which – as I argued above – can be connected to OIr. *tiug* ‘thick, dense, solid’, OHG *dicki* ‘thick, tight’ instead.

The Baltic forms with initial *s-* at the beginning of this section (Lith. *stingti* ‘to stiffen, solidify’ etc.) have been compared to Goth. *stiggan* ‘to strike against, hit an obstacle’, ON *stökkva* ‘to jump, burst, flee’, OHG *stinkan* ‘to stink’, Lat. *extinguō* ‘to put out, kill’, *distinguō* ‘to keep separate, mark off’, *restinguō* ‘to extinguish, suppress’, perhaps also Gr. *στέμβω* ‘to shake about, agitate, abuse, handle roughly’ (Smoczyński 2007: 601, Lehmann 1986:

tjagát, Cz. *táhnouti*, *tázati* ‘to interrogate, elicit’, Slv. *tęgniti*, 1sg.pres. *tęgnem*, *tęzati*, 1sg.pres. *tęzam/tęžem*). The non-acute intonation of **tęza-* is productive in iterative-intensive verbs in *-ati* (cf. Pronk 2012: 222ff.), while that of **tęgne-* can be compared to the non-acute intonation of Cz. *sáhnouti*, S. Cr. *sęgnuti* ‘to reach’ (on which see Kortlandt 2009: 66).

325, cf. also Beekes 2010: 1398). These verbs may be derived from a single root if one departs from an original meaning 'to repel, resist' (cf. Lith. *sténgti* 'to resist, oppose'). If they are cognate to the words meaning 'thick, solid, tight, difficult, heavy' above, the meaning connecting the two would be 'firm, impenetrable'. We can then reconstruct PIE **(s)tegʷ-*, which formed a nasal present and had initial **s-* in the verbal forms. This initial **s-* may be an instance of *s*-mobile or it can be analogical to the semantically similar PIE root **stebʰ-*, pres- **stembʰ-* (cf. Skt. *stabhnāti* 'to prop up', *stambhate* 'to stiffen', Gr. *ἀστεμφής* 'firm, rigid, stiff', Lith. *stem̃bti* 'to oppose', *staĩbas* 'stalk').

Proto-Indo-European **temk-*, **tum-*

The final etymon that deserves some attention in this context is the root reflected in Lith. *tánkus* 'dense, tight; frequent, in a hurry', ON *pétrr* 'dense, tight, close', MHG *dih̥te* 'thick, dense', E *tight*, OIr. *téchtaid*, *-téchta* 'freeze, solidify' from *técht* 'frozen', Mlr. *con-téici* 'freezes', Av. *taxma-* 'brave' (cf. G *tapfer* 'brave' < OHG *tapfar* 'heavy'). The underlying verbal root is preserved in Skt. *tañc-* 'to contract, coagulate', 3sg.ind.pres. *-tanakti*, Hitt. *tame(n)k-* 'to affix, attach; to stick to, join', pointing to a development 'to join > to coagulate, solidify'. For Proto-Indo-European we can reconstruct **temk-* (Kloekhorst 2008: 824, LIV s.v. **temk-*).¹⁵

In Celtic we find a number of words with a slightly deviating meaning which can nonetheless be connected to PIE **temk-* without too many problems: OIr. **tocaíd* 'to destine', *tocad* 'fortune', MW *tynghaf* 'to destine', *tynghet* 'destiny' < PCl. **tonk-* 'to cause to become solid' (Pokorny 1959: 1068, Schumacher 1995), OW *tagc* 'peace' < PCl. **tanko-* 'which is firm, established' (cf. Lat. *pāx* from *pangō* 'to fix', Matasović 2009: 369).

The Sanskrit verb and especially Hitt. *tame(n)k-* 'to affix, attach; to stick to, join' further allow a connection with Lat. *tēmō*, OHG *dih̥sala*, ON *þísl* 'pole, thill' < PIE

¹⁵The pure velar may ultimately reflect a labiovelar that was delabialized before the suffix *-u-* of the *u*-stem adjective (although the *u*-stem is limited to Baltic and need not be old).

**tem/nk-smen-/slo-*. These words for ‘pole, thill’ are usually connected to **ten-* ‘to stretch’ or one of its derivatives which mean ‘to pull’ (cf. de Vaan 2008: 610 with lit.). However, the velar of **tem/nk-smen-/slo-* is problematic if the word is derived from PIE **ten-*.¹⁶ Derivation from **temk-* is semantically equally satisfactory (‘which connects draught animals to a vehicle’ > ‘thill’) and would account for the velar.

Other conceivable derivatives from PIE **temk-* are in my view Goth. *peihs* ‘occasion, time’, ON, OE *þing*, OS, OFri. *thing*, OHG *ding* ‘(legal) assembly, thing’. The meaning ‘time’ may derive from ‘which is fixed’, cf. the Celtic words discussed above and OHG *githingōn* ‘to decide’, OE *þingan* ‘to make a treaty, determine’ etc., as well as ON *þengill*, OE *ðengel* ‘king’ (‘who decides’) from the same root. The meaning ‘assembly’ would then be ‘the occasion where decisions are made’ < ‘decision’. The generally accepted etymology of the Germanic words derives them from an otherwise unattested **tenk-* ‘to stretch’ (cf. the discussion of Lat. *tēmō*, OHG *dīhsala* ‘pole, thill’ above), a derivative of **ten-* ‘to stretch’ (Pokorny 1959: 1067, De Vries 1977: 610f., Lehmann 1986: 360) under the assumption of a development ‘to stretch > time > moment during an assembly’. This etymology is semantically not particularly strong (thus also Boutkan & Siebinga 2005 s.v. *thing*).¹⁷ The etymology proposed here is semantically more straightforward and formally unproblematic.

Skt. *tañc-* ‘to contract, coagulate’ etc. < **temk-* is further traditionally thought to be reflected in Goth. *þeihan*, OHG *dīhan*, OE *þēon* ‘to succeed, thrive’ < ‘to become tight, firm’ (Pokorny 1959: 1068). These Germanic words are, however, semantically more satisfactorily derived from the same root as Lith. *tėkti*, *teĩka* ‘to be sufficient, abundant’, Latv. *tikt*, *tieku/tiku* ‘to reach,

¹⁶As argued above, Slavic **teg-* ‘to pull, stretch’ is probably unrelated, and if it does derive from **ten-*, its velar is an inner-Slavic innovation.

¹⁷De Vries does not separate **tenk-* ‘to stretch, pull’ and **tenk-* ‘tight, solid’, which he views as a word connected with the practise of casting loam walls. He assumes a semantic development (‘loam wall’ >?) ‘Mannring’ > ‘Versammlung’. I find this hard to believe.

be enough', perhaps also ON *þiggja*, OE *ðicgan* 'take, receive', Gr. *κτάομαι* 'to acquire, win', OIr. *techtaid* 'to possess', cf. also Skt. *kṣáyati*, Av. *xšaieiti* 'to rule, have power' < **tkH-* (Fraenkel 1965: 1077, LIV s.v. **tek-*, Beekes 2010: 788). The nasal present that would underlie the Germanic form is attested in Baltic.

In Slavic we find words denoting weather conditions that are generally connected to PIE **temk-*: OCS *toča* 'downpour', Ru. *túča* 'raincloud, stormcloud; large amount', S, Cr. *túča* 'hail', Pol. *tecza* 'rainbow'. The Slavic words would reflect a derivative from the adjective reflected in Lith. *tánkus* 'tight, frequent' with the basic meaning 'dense, heavy rain or hail'. There is, however, a different root in Baltic which cannot be separated from the Slavic words for 'downpour' etc.: Lith. *tumėti* 'to congeal, clot', *tumà* 'turbidity', dial. *tumùs* 'thick, dense', esp. *nutumėti* 'to come down thickly', Latv. *tumēt* 'to become thick, become dense (of rainclouds), become overcast'. The Baltic words are usually compared to Skt. *túmra-* 'strong, fat', *tūtumá-* 'strong', Lat. *tumēre* 'to be swollen', *tumor* 'tumour', W *tyfu* 'to grow', ON *þumal-fingr*, OHG *dūmo* 'thumb' and the *l-*-derivative Skt. *tumula-*, *tumala-* 'tumultuous, noisy', Lat. *tumultus* 'uproar' < PIE **tum-* 'to swell' (Fraenkel 1965: 1139). The Indo-European root is very similar to PIE **tuH-* 'to swell'. The two roots can be analyzed as root-extensions to a pre-PIE root **tu-* (De Vaan 2008: 633).

OCS *toča* and its Slavic cognates must reflect **tum-k-*. The velar suffix may be the derivational suffix *-k-*, but it may also point to an early contamination of **tum-* and **temk-*. Slavic **toča* and Lith. *tánkus* have an acute root, which presupposes a laryngeal at an earlier stage. The Baltic forms with **tum-* are largely inconclusive with regard to the original intonation of the root. Lith. *tùmtas*, *tùntas* 'mass', which derives from the same root, has acute intonation, but it cannot be ruled out that this is due to metatony. The other Indo-European reflexes of both **temk-* and **tum-* cannot be derived from a form containing a laryngeal, which raises the question how the Balto-Slavic accent can be explained. I think it is a distinct possibility that a laryngeal was inserted into the root in analogy to PIE **temH-* 'dark' (cf. Skt. *támisrā-* 'dark night', OCS *to ma*,

Latv. *tīma* ‘darkness’, Lith. *témti* ‘to become dark’, *tamsà* ‘darkness’). Contamination of the inherited roots **temH-* ‘dark’ and **tum-* ‘to swell, thicken’ may also explain the -u- and non-acute accent of Latv. *tūmsa* ‘darkness’, *tūmšs* ‘dark’ (cf. the Lith. cognates *tamsà*, *tamsùs* with an acute root (*táms-*)).

Conclusion

The Proto-Indo-European roots underlying the words discussed in the article can be reconstructed as follows: **temk-* ‘to join, coagulate, solidify’, **tum-* ‘to swell, become thick’, **(s)tegʷ-* ‘firm, impenetrable’ and the compound **dbʰ-(h₂)mǵʰ-* ‘dense, frequent’. The following table shows their reflexes:

PIE:	Reflected in:
<i>*dbʰ-(h₂)mǵʰ-</i> ‘dense, frequent’	<i>u</i> -stem: Hitt. <i>pankuš</i> ‘entire, complete’ Skt. <i>bahú-</i> ‘many, much, frequent’ OAv. <i>bəzuuaṇt-</i> ‘dense’, NP <i>dabz</i> ‘thick, coarse’ Gr. <i>παχύς</i> ‘thick, dense’ Latv. <i>biezs</i> ‘dense, thick’, <i>bieži</i> ‘frequently’, Arm. <i>bazum</i> ‘much’ other: OPr. <i>kodesnimma</i> , <i>kudesnammi</i> ‘as frequently as’, Lith. <i>dāžnas</i> ‘frequent’, Latv. <i>dažs</i> ‘some, several’ uncertain cognates: Lith. <i>bāžmas</i> ‘multitude’ ON <i>bingr</i> ‘part of a room’, OSwe. <i>binge</i> ‘bin for storing corn’, Norw. <i>bunga</i> ‘small heap’, Icel. <i>bingur</i> ‘stock, heap’ OIr. <i>dai(n)gen</i> ‘firm, fast, solid’ Latv. <i>dēnkst</i> ‘strong, healthy, important’, <i>dīngt</i> , <i>dīngstu</i> ‘to be calm’, <i>sadingt</i> ‘to become stiff, rigid’ Ru. dial. <i>djáglyj</i> ‘healthy, strong’, OCS <i>nedogb</i> ‘disease’ post-PIE <i>*piH-(h₂)mǵʰ-</i> : Lat. <i>pinguis</i> ‘fat, greasy’ <i>*teg-u-</i> : OIr. <i>tiug</i> ‘thick, dense, solid’, W <i>teu</i> , Bret. <i>teo</i> ‘thick’
<i>*(s)tegʷ-</i> ‘firm, impenetrable’	

- OHG *dicki*, OE *dicce*, ON *þykk*, *þjokkr*
 'thick, tight'
 post-PIE **teng-u-*
 Arm. *t'anjr* 'thick, tight'
 Lith. *tingus* 'lazy', *tingti*, *tingsta* 'to
 become slow', *tingėti*, *tingi* 'to be lazy'
 OCS *těžbъ*, S, Cr. *těžak* 'heavy, difficult',
 Ru. *tugój* 'tight', Cz. *tuhý* 'solid, tough'
 **steng^u*-
 Lat. *extinguō* 'to put out, kill', *distinguō* 'to
 keep separate, mark off', *restinguō* 'to
 extinguish, suppress'
 Lith. *stìngti*, *stìngstu* 'to stiffen, solidify',
sténgti, *sténgia* 'to be able, exert oneself,
 resist, oppose', *stangùs/stángus* 'stiff,
 rigid', *stangrùs*, *stingrùs*, *stingrus* 'tight',
 Latv. *stiņgrs* 'stiff', *stiņgt* 'to stiffen,
 become rigid', *stiņdzināt* 'to solidify'
 Goth. *stiggan* 'to strike against, hit an
 obstacle', ON *støkkva* 'to jump, burst,
 flee', OHG *stinkan* 'to stink'
 Gr. *στέμβω* 'to shake about, agitate,
 abuse, handle roughly' (?)
 nasal present:
 Skt. 3sg.ind.pres. *-tanakti* 'to contract,
 coagulate'
 Hitt. *tame(n)k-* 'to affix, attach; to stick to,
 join'
 nominal forms:
 Av. *taxma-* 'brave'
 OIr. *téchtaid*, *-téchta* 'freeze, solidify', *técht*
 'frozen', Mlr. *con-téici* 'freezes'
 OIr. **tocaid* 'to destine', *tocad* 'fortune',
 MW *tynghaf* 'to destine', *tynghet*
 'destiny', OW *tagc* 'peace'
 Lith. *tánkus* 'dense, tight; frequent, in a
 hurry'
 ON *þétr* 'dense, tight, close', MHG *dichte*
 'tight', E *tight*, ON *þungr* 'heavy', *þyngja*
 'burden'
 Goth. *þeihs* 'occasion, time', ON, OE
þing, OS, OFri. *thing*, OHG *ding* 'legal
 assembly, thing', OHG *githingōn* 'to
 decide', OE *þingan* 'to make a treaty,
 determine', ON *þengill*, OE *ðengel* 'king'

- **temk-s-* ‘pole, thill’ (?)
 Lat. *tēmō*
 OHG *dīhsala*, ON *þísl*
 **tum-* ‘to swell,
 become thick’
 Skt. *túmra-* ‘strong, fat’, *tūtumá-* ‘strong’
 Lat. *tumēre* ‘to be swollen’, *tumor* ‘tumour’
 W *tyfu* ‘to grow’
 ON *þumal-fingr*, OHG *dūmo* ‘thumb’
 Lith. *tumėti* ‘to congeal, clot’, *tumà*
 ‘turbidity’, dial. *tumùs* ‘thick, dense’,
tùmtas, *tùntas* ‘mass’, Latv. *tumēt* ‘to
 become thick, become dense (of
 rainclouds), become overcast’
 OCS *toča* ‘downpour’, Ru. *túča*
 ‘raincloud, stormcloud; large amount’,
 S, Cr. *tũča* ‘hail’, Pol. *tecza* ‘rainbow’

In addition, Proto-Balto-Slavic **kimšta-* ‘stuffed, crammed’ probably derives from Proto-Indo-European **kem-* ‘to press (down)’, while **gumšta-* ‘dense’ can be derived from either Proto-Indo-European **g^{wh}en-* ‘solid, enough’ or **gem-* ‘to press’. Proto-Indo-European **tum-* and **temk-* are remarkably similar but cannot be traced back to a single proto-form.

References

- Adams, Douglas Q.
 1999 *A Dictionary of Tocharian B*. Amsterdam–Atlanta: Rodopi.
- Beekes, Robert
 1988 *A Grammar of Gatha-Avestan*. Leiden etc.: Brill.
 1994 The neuter plural of thematic nouns, in George Dunkel, Gisela Meyer, Salvatore Scarlata & Christian Seidl (eds.) *Früh-, Mittel- und Spätindogermanisch*. Wiesbaden: Reichert Verlag, 1–15.
 2010 *Etymological Dictionary of Greek*. Leiden–Boston: Brill.
- Blažek, Václav
 2010 *Indo-European “Smith” and his Divine Colleagues* (= *The Journal of Indo-European Studies Monograph Series*, 58). Washington, DC: Institute for the Study of Man.
- Boutkan, Dirk & Sjoerd Siebinga
 2005 *Old Frisian Etymological Dictionary*. Leiden–Boston: Brill.

Buck, Carl Darling

- 1904 *A Grammar of Oscan and Umbrian: with a collection of inscriptions and a glossary*. Boston: Ginn & Company.

Derksen, Rick

- 1996 *Metatony in Baltic*. Amsterdam–Atlanta: Rodopi.
2008 *Etymological Dictionary of the Slavic Inherited Lexicon*, Leiden–Boston: Brill.

Fraenkel, Ernst

- 1962–1965 *Litauisches etymologisches Wörterbuch*. Heidelberg: Winter Verlag.

Hoffmann, Karl & Bernhard Forssman

- 2004 *Avestische Laut- und Flexionslehre*. 2., durchgesehene und erweiterte Auflage. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Kloekhorst, Alwin

- 2008 *Etymological Dictionary of the Hittite Inherited Lexicon*. Leiden–Boston: Brill.

Kortlandt, Frederik

- 2009 *Baltica & Baltoslavica*. Amsterdam–New York: Rodopi.

Krahe, Hans

- 1949 Die *st*-Bildungen in den germanischen und indogermanischen Sprachen. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 71, 225–250.

Lehmann, Winfred P.

- 1986 *A Gothic Etymological Dictionary*. Leiden: Brill.

LIV

- 2001 (Helmut Rix, Martin Kümmel, Thomas Zehnder, Reiner Lipp & Brigitte Schirmer) *Lexikon der indogermanischen Verben: die Wurzeln und ihre Primärstammbildungen*. Zweite, erweiterte und verbesserte Auflage. Wiesbaden: Reichert.

Machek, Václav

- 1968 *Etymologický slovník jazyka českého*. Praha: Academia.

Matasović, Ranko

- 2009 *Etymological Dictionary of Proto-Celtic*. Leiden–Boston: Brill.

McCone, Kim

- 1996 *Towards a Relative Chronology of Ancient and Medieval Celtic Sound Change*. Maynooth: St. Patrick's College.

- Narten, Johanna
1995 *Kleine Schriften*. Wiesbaden: Reichert.
- Olsen, Birgit Anette
1999 *The Noun in Biblical Armenian: Origin and word formation - with special emphasis on the Indo-European heritage* (=Trends in linguistics: studies and monographs 119). Berlin–New York: Mouton de Gruyter.
- Pedersen, Holger
1906 Armenisch und die Nachbarsprachen. *Zeitschrift für vergleichende Sprachforschung* 39, 334–485.
- Pokorny, Julius
1959 *Indogermanisches etymologisches Wörterbuch*. Bern–München: Francke.
- Pronk, Tijmen
2010 On Greek ἀνχμός ‘drought’ and ἀνχίψ ‘neck’. *Glotta* 86/1–4, 55–62.
2011 On the development of initial *Hu, *Hi and the rise of initial acute diphthongs in Baltic and Slavic, in: Tijmen Pronk & Rick Derksen (eds.) *Accent Matters: Papers on Balto-Slavic accentology*. Amsterdam–Atlanta, GA: Rodopi, 309–321.
2012 Indo-European long vowels and Balto-Slavic accentuation. *Baltistica* 47/2, 205–247.
- Rix, Helmut
1986 Die Endung des Akkusativ Plural commune im Oskischen, in: Annemarie Etter (ed.), *o-o-pe-ro-si: Festschrift für Ernst Risch zum 75. Geburtstag*. Berlin–New York: Walter de Gruyter, 583–597.
- Schumacher, Stefan
1995 Old Irish *tucaid, tocad and Middle Welsh tynghaf tynghet re-examined. *Ériu* 46, 49–57.
- Sławski, Franciszek
2001 *Słownik prastowiański 8: Goda-Gyža*. Wrocław etc.: Zakład narodowy imienia Ossolińskich.
- Smoczyński, Wojciech
2007 *Lietuvių kalbos etimologinis žodynas / Słownik etymologiczny języka litewskiego*. Vilnius: Vilniaus Universitetas.
- Sturtevant, Edgar H.
1934 Adjectival *i*-stems in Hittite and Indo-European. *Language* 10/3, 266–273.

Trubačev, Oleg N. & Anatolij F. Žuravlev

1974–2008 *Étimologičeskij slovar' slavjanskix jazykov*. Moskva: Nauka.

Vaan, Michiel de

2003 *The Avestan Vowels*. Amsterdam–New York: Rodopi.

2008 *Etymological Dictionary of Latin*. Leiden–Boston: Brill.

Vries, Jan de

1977 *Altnordisches etymologisches Wörterbuch. Zweite verbesserte Auflage*.
Leiden: Brill.

Walde, Alois & Johann Baptist Hofmann

1938³ *Lateinisches etymologisches Wörterbuch*. Heidelberg: Winter
Verlag.

Young, Steven R.

2006 Laryngeal metathesis in initial position in Balto-Slavic, in:
Howard Aronson, Donald Dyer, Victor Friedman, Daniela
Hristova & Jerrold Sadock (eds.) *The Bill Question:
Contributions to the study of linguistics and languages in honor of
Bill J. Darden on the occasion of his sixty-sixth birthday*.
Bloomington, IN: Slavica, 231–245.