The origin of the Indo-European simple thematic presents

The nominal connection

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Abstract

It is now generally agreed upon that the Indo-European simple thematic presents are a post-Anatolian innovation. The origin of this formation, however, remains unclear. In this paper it is argued that the initial core of simple thematic presents was of denominative origin. They go back to an early Core PIE class of denominatives derived from e-grade thematic adjectives through conversion, e.g., adj. *léu̯k-o- ‘clear’ (Gk. λευκός ‘white’) → vb. *léu̯k-e/o- ‘be/make clear’ (Ved. ròcate ‘shines’, TB łystár ‘will light up’). This derivational pattern became obsolete already within Core PIE and a number of original denominatives like *léu̯k-e/o- were reinterpreted as primary present stems.

Keywords

Indo-European – Indo-Hittite – verb – present – thematic vowel – simple thematic presents – denominatives

1 Introduction

During the last decades the Indo-Hittite hypothesis has gained general acceptance and by now it can be confidently qualified as the communis opinio.¹ This imposes a double question on every feature in which Anatolian diverges from the rest of Indo-European: whether we are dealing with an Anatolian archaism

¹ E.g., Oettinger (2017a: 256); Lundquist & Yates (2018: 2080); Kloekhorst & Pronk (2019: 3–7), to mention just a few recent explicit statements.
and, if we answer in the affirmative, how did the rest of Indo-European innovate after the separation of Anatolian. It is my impression that the second question is often given less attention than the first one. In this article I will deal with one of these cases: simple thematic presents with full grade of the root (e.g., *bhēr-e/o- ‘carry’ > TB parām, Ved. bhārati, Gk. φέρω, Go. bairan, etc.). I will first present the basic terms of the problem (§ 2–4) and a critical review of the major theories of the origin of this formation (§ 5). I will then argue for a denominative approach to the origin of the simple thematic presents (§ 6–9).

Before proceeding further, a note on terminology. ‘Indo-Hittite’ is traditional and self-explanatory. The parent language after the separation of Anatolian is called ‘Core PIE’, whereas ‘classical Core PIE’ refers to the parent language after the separation of Tocharian. These labels are only used when they are relevant for the argument; otherwise ‘PIE’ or ‘the parent language’ is used in a non-committal way. I indiscriminately use ‘simple thematic presents’ or ‘the type *bhēr-e/o-’ instead of the more precise, but cumbersome, ‘simple thematic presents with accented full grade of the root’ (velsim.). It must be stressed that this article is concerned with this type alone. Other thematic formations will only be mentioned where they are relevant for the main topic.

2 Thematic formations in the PIE verb

Classical Core PIE languages like Vedic or Greek require five different thematic formations inherited from the parent language: 1) simple thematic presents with full grade of the root (*uēg̑h-e/o- ‘convey’ > Ved. váhati, Lat. uēhō, Lith. vēža, etc.); 2) simple thematic presents with zero grade of the root (*gw̥rh̥3e/ó- ‘devour’ > Ved. girāti, OCS -žr̥tě); 3) the thematic aorist (*u̯id-é/ó- ‘saw’ > Ved. ávidat, Gk. εἶδον, Arm. egiatan); 4) the subjunctive (*h₁és-e/o- ‘shall be, will be’ > Ved. ásat(i), Gk. ἔω, Lat. fut. erit); 5) a variety of thematic present stem suffixes, e.g., *-je/o-,*-eje/o-,*-ske/o-,*-se/o-,*-dhe/e/o- (*gʷṃjé/ó- ‘come’ > Gk. βαίνω, Lat. ueniō; *gʷṃ-ské/ó- > Ved. gácchati, Gk. βάσκω).

Only the antiquity of present stem suffixes like *-je/o- or *-ske/o- is absolutely certain (they are well represented in all Indo-European languages, including Anatolian). The antiquity of the radical zero-grade formations (both thematic aorists and tudáti-presents) is supported by very few potential word equations. It is thus generally agreed that both are post-PIE formations that had, at best, a marginal presence in late (Core) PIE. The subjunctive is secure for classical

2 On these formations see most recently Jasanoff (2017).
Core PIE (including the long vowel subjunctive **$bh\acute{e}r-e-e-t(i)$/*$bh\acute{e}r-e-o-nt(i)$ > $bh\acute{e}r-e-t(i)$/*$bh\acute{e}r-o-nt(i)$ > Ved. $bh\acute{a}r\acute{a}t(i)$/bh\acute{a}r\acute{a}n, Gk. 1 pl. φέρωμεν, Lat. 2 sg. fut. ferēs). It is absent, however, from Anatolian and Tocharian, and the few relics that have been proposed are inconclusive. Simple thematic presents with full grade of the root present us with a similar picture. This type was evidently well established in Core PIE. It is extremely well represented in all Core PIE languages, and we have an abundant number of potential word equations (e.g., Ved. sárpati = Gk. ἑρπω = Lat. serpō < PIE *sérp-e/o- ‘crawl’). This type, however, is unknown in Anatolian (§ 3) and underrepresented in Tocharian (§ 4).

3 Anatolian

The rarity of simple thematic presents in Hittite has been observed since the beginnings of the scholarly study of this language. There is an important difference, however, between ‘uncommon’, ‘very rare’, and ‘completely absent’. Oettinger’s Stammbildung still included a full chapter on simple thematic presents (1979: 259–314). Shortly thereafter, however, almost all of Oettinger’s evidence was shown to be incorrect or susceptible to other explanations; see especially Melchert (1984: 16–19); Lehrman (1985, passim). By the late eighties the current state of affairs had already been reached: the type *$bh\acute{e}r-e/o$- is virtually unknown in Anatolian, the question being whether Anatolian has at least one or two reasonable cases. Up to very recently HLuv. tama-di ‘build’ (: Gk. δέμω ‘build’, Go. ga-timan ‘befit’ < *dem-e/o-) was widely held to be the only certain relic, but Sasseville (2021: 80, 92–93) has convincingly argued that HLuv. tama-di is a denominative from Luv. *tama- ‘building’, cf. Lyc. tama- ‘id.’. Thus, at present no simple thematic presents are attested in Anatolian.

The significance of this fact can hardly be overstated. As noted at the beginning of this article, the Indo-Hittite hypothesis is now generally accepted. What exactly constitutes an archaism of Anatolian is more controversial, but simple thematic presents rank among the most secure cases. Had Anatolian inherited a robust class of simple thematic presents, their complete absence in the record would be fully unexpected. Anatolian, therefore, certainly split from the continuum before the type *$bh\acute{e}r-e/o$- became productive. Whether it split before it actually came into existence is a more difficult question. Anatolian could

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3 See Rieken (2009: 45–46) and Peyrot (2013: 396–398) for discussion of the alleged relics of the subjunctive in Anatolian and Tocharian, respectively.
4 E.g., Marstrander (1919: 77); Sturtevant (1933: 222).
5 E.g., Jasanoff (1998: 313); LIV: 114; Oettinger (2017a: 266), among others.
have inherited a few simple thematic presents and lost them, but this is not backed by positive evidence. At present, the null hypothesis appears to be a post-Anatolian date and this is the chronology I will adopt in this article.

4 Tocharian

The case of Tocharian is different. This branch has a class of simple thematic presents, but they are rare. This could imply that the type arose after the separation of Anatolian, but that it only became productive after the separation of Tocharian. This, however, is uncertain for several reasons.

First, the idea that Tocharian was the second language to branch off is based on less solid evidence than the case of Anatolian. If this is true, the gulf between Tocharian and classical Core PIE is considerably less profound than that between Anatolian and the rest of the family (including Tocharian).

Second, in its stronger form, this view claims that Tocharian presents of Class II include only three inherited simple thematic presents: TB *parāṃ 'carries' (< *bhēr-e/o-), āśāṃ 'leads' (< *h₂ég-e/o-), and śaīṃ 'lives' (< *gwiḥ₃-e/o-). This, however, is slightly overstated. The amount of inherited material among Class II presents is certainly higher (e.g., TB *kaltār 'stands' < *kłēj-e/o-, *lyāśāṃ 'lies' < *lēg₃-e/o-), and becomes even higher if, as seems likely, Class II subjunctives like TB *lyuśtār 'illuminates' (< *léuk-e/o-) continue PIE thematic presents.

Third, Tocharian A and B have undergone a long and complicated prehistory. Per Rasmussen (2002: 380–383) or Malzahn (2010: 364–365), it is perfectly possible that simple thematic presents became unproductive and were replaced by suffixal formations. The Class II presents and subjunctives that we have would simply be archaisms.

In short, it is clear that Tocharian inherited the type *bhēr-e/o-, but we cannot be certain that its rarity in this branch is historically relevant. In what follows

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6 As first stated by Jasanoff (1998: 314–315) and Ringe (2000).
7 Similar considerations in Adams (2017: 455–456) or Kloekhorst & Pronk (2019: 8), among others.
8 As recently recognized by Jasanoff himself (2016: 127).
9 So, e.g., Malzahn (2010: 321–322). According to an alternative view Tocharian Class II subjunctives continue PIE subjunctives (e.g., Ringe 2000: 132; Kim 2007: 190, among others). This cannot be categorically excluded, but it would be the only case in which a Tocharian subjunctive does not continue a PIE indicative.
10 A parallel is provided by the je/o-presents, which are also very rare in Tocharian (as noted by Rasmussen 2002: 379–380).
I will thus treat the presence of a given simple thematic present in Tocharian as significant, but the absence of Tocharian evidence will not be considered decisive.

5 The origin of the simple thematic presents: earlier views

During the last decades the absence of simple thematic presents in Anatolian has been widely acknowledged. The obvious next question (where do they come from?) has received less attention and the whole issue seems to be viewed with a considerable degree of perplexity. The critical discussion that follows is not intended to be exhaustive. Its only purpose is to show that the main approaches that can be seen in the literature are seriously flawed and that, accordingly, the current impasse is fully justified.

5.1 The ‘middle voice theory’

A relatively popular theory that, in my view, has been laid to rest by the recognition of the post-Anatolian date of the simple thematic presents is what may be termed the ‘middle voice theory’, best known from Watkins’ 1969 monograph. Its basic tenet is that the *-e- of 3 sg. *bʰér-e-ti goes back to a reanalyzed (pre-)PIE 3 sg. middle *bʰér-e. The way this *bʰér-e came to be enlarged with the 3 sg. active *-t(i) need not concern us here. The ‘middle theory’ finds strong support in the thematic 1 sg. pres. *-oH (Gk. φέρ-ω, Lith. neš-à, refl. -iú-o-si, Go. bair-a, etc.), an ending that most scholars specify as *-i-o-h2 and relate to the perfect and middle 1 sg. *-h2e (Hitt. 1 sg. pres. mid. -ḫḫa(ṛti), Gk. 1 sg. perf. -α, etc.). This is surely a powerful argument, but there is no reason to believe that the origin of the 1 sg. *-o-h2 of (e.g.) *gʷm̥-sk̑óh2 ‘I come’, whatever it might be, is related to the origin of the much younger present type *bʰér-e/o-.

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11 E.g., Sihler (1995: 494); Fortson (2004: 89); Clackson (2007: 153); Lundquist & Yates (2018: 2162–63); Oettinger (2017a: 266), to mention only some handbook treatments.
12 See the references given in the previous footnote. References to concrete theories are often provided in a non-committal way (most saliently to Jasanoff 1998), but it is evident that the origin of the simple thematic presents is generally viewed as an open question.
13 Willi (2018: 185–193) provides abundant references to the secondary literature.
14 Here I am tacitly taking for granted that the late PIE 3 sg. was *bʰér-e-ti and not †bʰér-e (as sometimes proposed, e.g., Watkins 1969: passim). See especially Cowgill (2006).
15 The 1 sg. *-o-h2 is not attested in Anatolian (Hitt. wemiya-mi ‘I find’, daške-mi ‘I take [impf.]’), but, in my view, cannot be a post-Anatolian innovation. Its formal properties (especially the lack of the hic et nunc particle *-i, but also the apocope of the middle-perfect 1 sg. *-h2e) are incompatible with a recent date, whereas the secondary intrusion of the athematic
ter cannot go back to a ‘protomiddle’ 3 sg. pres. **bhёр-e because the only 3 sg. middle present endings that can be reconstructed for late Indo-Hittite are *-o (Hitt. kiš-a ‘becomes’, Ved. śáy-e ‘lies’) and *-to (Hitt. łya-tta(r)ı ‘marches’, Ved. mri-yá-te ‘dies’). There is no evidence for a 3 sg. †-e in the middle present.\(^{16}\) The only way to maintain this theory would be to operate with an (early!) Indo-Hittite date for presents like *bhёр-e/o-, but this is not supported by the available data.

In general terms, the post-Anatolian date of the type *bhёр-e/o- makes it unwise to look for its origin in deep prehistorical stages of the PIE (Indo-Hittite) verb. The verb system in which it arose cannot have dramatically differed from the traditional, Greco-Aryan model. Simple thematic presents remained productive after the dissolution of Core PIE and it is thus worth asking whether the mechanisms that account for their expansion may account for their origin as well. Two major frameworks clearly stand out in the literature: thematicization and ‘subjunctive origin’.

5.2 Thematization

Thematization is known to be one of the major sources of the thematic presents attested in the historical languages. Thus, *tékʷ-e/o- ‘flow’ (YAv. tacaiti, OIr. -flicht, Lith. tėka, OCS tekę́, Alb. n-djek) is shown to be post-Core PIE by Ved. 3 sg. tak-ti and YAV. 2 sg. mid. tax-še ‘rush’ (PIE *tékʷ-ti/*tékʷ-énti), whereas the contrast in vocalism between Lat. dúcō, Go. tiuhan (< *déu̯k-e/o-) and MW dwc, Alb. n-duk (< *duk-e/o-) is best understood if we start from PIE *déu̯k-ti/*duk-énti ‘draw’. This is well known and requires no discussion.

Thematization, however, does not seem to have been a major trend in early stages of the parent language.\(^{17}\) The matter can be exemplified with the molō-presentes attested in Anatolian, one of the few groups of verbs that allow for an objective evaluation of the data. The picture is revealing. All Hittite bhį-

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\(^{16}\) See Villanueva Svensson (2014) for the 3 sg. endings of the PIE present middle. Note that, in my view, simple thematic presents had a 3 sg. middle *bhёр-e-tor (Villanueva Svensson 2014: 74–76), not an athematic-looking *bhёрor (Jasanoff 2003: 49, among others). The only strong evidence for the latter is OIr. pass. berair, conj. berar ‘is borne’, which in my view is not enough to outweigh the conjoined evidence of more conservative languages like Ved. sácate ‘follows’, Gk. ἑπεται ‘follows’ and TB aistār ‘knows’.

\(^{17}\) Similar considerations in Jasanoff (2017: 198).
conjugation root verbs with cognates in at least two Core PIE branches display variation in root vocalism and/or other features typical of recent thematizations:

- Hitt. *iskalla-bbi ‘tear’ ~ Lith. skėlti, skėlia ‘cleave’, ON skilja ‘separate’ (< *skelH-je/o-), Gk. σκέλλω ‘rend apart’ (< *skolH-je/o-).
- Hitt. *ispānt-bbi ‘libate’ ~ Gk. σπένδω, Osc. spentud (< *spend-e/o-), Lat. spondeō, -ēre ‘vow’ (for *spondō, cf. perf. spoondonī, ptcp. spōnsus).\(^{18}\)
- Hitt. *kānk-bbi ‘hang (tr.)’ ~ Go. hahan, -aiþ ‘hang’ (< *k̑onk-e/o-), Go. hahan, -aiþ ‘hang (intr.)’, Ved. śáṅkate ‘hesitates’ (< athem. 3 sg. mid. *k̑onk-or).\(^{19}\)
- Hitt. *mall(a)-bbi ‘grind’ ~ Go. malan, Lith mälti, mala (< *molh2-e/o-), OIr. melid (< *melh2-e/o-), MW malu, Umb. 3 sg. impv. kumaltu (< *ml̥h2-e/o-).
- Hitt. *padda-bbi ‘dig’ ~ Lat. fodiō, -īre ‘dig’ (< *b̑hodh2-je/o-), OCS bosti, bodq ‘stab’ (< *b̑hodh2-e/o-), Lith. bėsti, bėda ‘stick’ (< *b̑heedh2-e/o-).

The list could be expanded with less clear-cut material (cf., e.g., Jasanoff 2003: 71–81), but this would not alter the main conclusion: thematization belongs to the individual history of the Core PIE languages,\(^{20}\) in spite of the fact that molō-presents were in an exceptionally favorable position to be thematized at an early stage of Core PIE.

This makes it unlikely that Core PIE presents like (e.g.) *h₂ég̑-e/o- ‘drive’ (Ved. ájati, Gk. ἀγω, TB āśāṁ etc.), *h₁éu̯s-e/o- ‘burn’ (Ved. óṣati, Gk. ἑῦω, Lat. ūrō), or *stén-e/o- ‘moan’ (Gk. στένω, Lith. stėna, OE stenan) arose through thematization from Indo-Hittite **h₂ég̑-ti, **h₁éu̯s-ti, **stén-ti. To put it another way, what we know is that late Core PIE had thematic presents from present roots, *h₂ég̑-e/o-, *h₁éu̯s-e/o-, and *stén-e/o- being among the best candidates. What we do not know is where they come from. They may indeed have been thematized from **h₂ég̑-ti, **h₁éu̯s-ti, **stén-ti at an early date, but at present there is no positive evidence supporting such a scenario and the relatively clear-cut case of the molō-presents provides evidence against it. Note, in addition, that this framework cannot account for the abundant presence of thematic presents from aoristic roots (*dér-e/o-, *b̑hūd-h2-e/o-, *klēj-e/o-, *k̑wēl-h1-e/o-, *sēk-w-e/o-, *u̯ért-e/o- etc.; see LIV ss.vv. for justification), which cannot have arisen through thematization because these roots made root thematic

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\(^{18}\) Cf. Jasanoff (2003: 78). If, on the other hand, Lat. spondeō continues an iterative *spondē/e/o- (which cannot be excluded), Gk. σπένδω, Osc. spentud become the best candidate for a Core PIE thematization. Note, at any rate, that the meaning of Osc. spentud is unclear.

\(^{19}\) The preserved root-final velar of Ved. śāṅkate points to an athematic present, as thematic presents in Indo-Iranian otherwise generalized the palatalized variant of the final velar (cf. Ved. rōcate ‘shines’ < *léuk-e/o-, sácate ‘follows’ < *sék-w-e/o-). This is confirmed by the Germanic 3rd class weak verb Go. hahan, -aiþ.

\(^{20}\) Pace Ringe (2012: 132–133).
aorists and not root athematic presents. To be sure, the trend toward thematization may have started before the breakup of Core PIE, but it is unlikely to have been a strong trend and, more importantly for present purposes, 'spontaneous' thematization is unlikely to have been the process by which the new type *bhér-e/o- came into existence.

5.3 The ‘displaced subjunctive theory’

The other major approach (the ‘displaced subjunctive’ theory) can be exemplified with the root *bhēid-‘split’. The PIE paradigm involved a root aorist *bhēid-t (Ved. ābhet) and a nasal present *bhī-né-d-ti (Ved. bhinātti, Lat. findō). But what about Go. beitan ‘bite’ and Gk. θείσαμαι ‘spare; avoid’? The idea that they go back to the aorist subjunctive *bhēid-e-t(i) has enjoyed a remarkable popularity.21 Some scholars have gone on to propose that the whole type *bhér-e/o- originated in displaced subjunctives.22

In spite of its popularity, I find the ‘subjunctive theory’ extremely unlikely. The main problem is that the large-scale, continuous transfer of subjunctives (or futures) to indicatives that the subjunctive theory demands must be exceedingly rare from a typological point of view, if it occurs at all.23 I cannot claim that it is impossible, but I have not been able to find clear parallels.24

In my view this fact alone suffices to cast serious doubts on the subjunctive approach, but it is not the only problem. It must be recalled that the antiquity of the subjunctive is itself an open question. Even more importantly, the formal identity between Core PIE aorist subjunctives like *bhēid-e/o- and thematic presents like Go. beitan does not make derivation from the former unavoidable. In the particular case of this root, Rau (2016) has convincingly explained Gk. θείσαμαι as stemming from a Core PIE middle thematic present *bhēid-e-tor that stood in opposition to the active nasal present *bhī-né-d-ti (Ved. bhinātti).25

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21 E.g., Bammesberger (1984: 9); Liv: 71; Jasanoff (2003: 18213); Ringe (2006: 160), among others.
22 E.g., Lazzeroni (1997: 46–51); Rasmussen (2002: 382–383); Ringe (2012: 125–131); Kloekhorst & Pronk (2019: 4).
23 The opposite process (old indicatives → new subjunctives or futures) is typologically well attested, cf. Haspelmath (1998).
24 Transfers of modal forms to the indicative certainly occur, but all clear cases known to me involve single endings replacing an inherited ending that had become problematic (e.g., WGmc. 2 sg. pret. *-ī [OE -ē, OS dHΓ -ē] < PGMc. 2 sg. pret. subj. *-īz < PIE 2 sg. opt. *-ih₁-s), or individual verbs in which the transfer to the indicative had an obvious pragmatic motivation (e.g., Go. ind. wiljau, wilēis, wili ‘want’ < PIE opt. *uél-ih₁, cf. Lat. subj. uelam, uelis, uelit ‘would want’). All unambiguous parallels for the transfer of subjunctives to indicatives given by Dunkel (1998: 91–92) belong to one of these two special cases.
25 The conjugational pattern involving an active-transitive nasal present beside a middle-
As for Go. *beitan*, it may easily be a Germanic coinage on the model of verbs that inherited a simple thematic present beside a root aorist or, later, a perfect. There is no need to trace it back to a PIE formation.

6 Internal summary and further prospects

To summarize the results achieved so far, the original core of simple thematic presents did not consist of activized athematic middles (the 3 sg. middle present was *-*o, not *-*e), of thematized root athematic presents (a process that operated at a much later stage), or of displaced subjunctives (a process that must have been sporadic at best). As noted above (§ 5), this leads us to an uncomfortable impasse. The type *bhér-e/o-* appeared after the separation of Anatolian. The origin of a relatively late formation like this should not be completely beyond our reach. One would rather predict the current debate to be a choice between two or three logical possibilities. The result of the previous section, however, is that there is no obvious niche in the PIE verb system from which the type could have originated.

An alternative that does not seem to have been explored so far is that the type *bhér-e/o-* is of denominative origin. From a typological point of view it is well known that denominatives may end up entering the system of primary verbs. A close parallel is provided by the deverbal *-e*-statives, whose original denominative character is clearly preserved in Anatolian and, perhaps, Indo-Aryan (cf. Yakubovich 2014). An advantage of this approach is that it would explain a feature of the simple thematic presents that is not always sufficiently highlighted: their functional indeterminacy. The type *bhér-e/o-* was made from both present and aoristic roots, could be both transitive and intransitive, and, generally speaking, does not seem to have been limited by formal or functional constraints of any sort (see further below, § 10).

To be sure, there seem to be numerous reasons why a denominative approach has not been previously entertained: the thematic vowel was not used to make denominatives; *e*-grade adjectives that could serve as the derivational base are rare to say the least; there is no obvious scenario accounting for

intransitive simple thematic present is well known from Vedic examples like *punáti* ‘purify’ : *pávate* ‘flow pure; purify oneself’ and can be projected into (classical) Core PIE with certainty; see Hollifield (1977: 90–95, 136–137); Rau (2016).

Such a possibility has also been suggested by Tichy (2000: 53–54, 107–108). Pace Tichy, however, I see no reason to postulate denominative origin for the whole complex of thematic inflection in the PIE verb.
the intrusion of the type *bʰér-e/o- in the verb system; and, overall, there is no compelling reason to believe that the type *bʰér-e/o- was a foreign body among PIE deverbatives. The last objection, I believe, has already been answered: at present there is much to be gained by considering the type *bʰér-e/o- a foreign body in the PIE verb system. In what follows I will try to show that the other objections are far less decisive today than they might have been just a few years ago.

7 PIE *gʷih₃u̯e/o- ‘to live’

Our starting point will be the verb ‘to live’. The adjective *gʷih₃u̯ó- ‘alive’ (Ved. jīvā-, Av. juua-, Gk. ςώς, Lat. uius, OIr. bēu, Go. qius, Lith. gūvąs, OCS živs) and the associated present *gʷih₃u̯e/o- ‘to live’ (TB śaim, TA šós, Ved. jivāti, Av. juuaiti, Gk. ςώ, Lat. uīūo, OPr. gūvā, OCS živos) belong to the most secure items of the PIE lexicon. The analysis of the adjective *gʷih₃u̯ó- is perfectly clear. It contains the ‘oppositional’ suffix *-u̯o- of *pr̥h₂-u̯o- ‘first’ (Ved. pū́rva-, TB parwe) or *dek̑s(i)-u̯o- ‘right’ (Gk. δεξί(φ)ός, Go. taihswa)27 added to the zero grade of the root *gʷi̯eh₃- ‘live’.28 The present *gʷih₃u̯e/o-, as has often been observed, can only be a denominative of *gʷih₃-u̯ó-.29

It is important to stress that there is no viable alternative. A u-present *gʷi̯éh₃-u̯-ti/*gʷih₃-u̯-énti (vel sim.)30 could find support in the apparent full grade of Gk. ςώ, but the *gʷyó- of ςώ is also found in the adjective ςώς and is, accordingly, of little probative value.31 There is, at any rate, no evidence for athematic inflection and, overall, *gʷih₃u̯e/o- is simply too well established.32 The acceptance of a derivational channel adj. *gʷih₃-u̯o- → vb. *gʷih₃u̯e/o-, however, immediately raises the question of its nature. Two relatively common assumptions are that it was ‘anomalous’ (e.g., Ringe 2000: 126) or that we are dealing

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27 On this suffix see most recently Oettinger (2017b).
28 I cannot deal here in detail with the derivatives of this root (most of which are in any case irrelevant for the present *gʷih₃u̯e/o-). See especially Hamp (1976); Klein (1988); Weiss (1994).
29 E.g., Hamp (1976: 89–90); Klein (1988: 258–259); Tichy (2000: 54), among others.
30 E.g., LIV: 215; Jasanoff (2003: 142), among others.
31 It is not of prime importance here whether Gk. ςώς, ςώ has a secondary full grade *gʷi̯eh₃- (a relatively common assumption, but see Klein 1988: 260–261 for criticism) or is phonologically regular from PIE *gʷi̯eh₃- (see, e.g., Klein 1988: 260–267; Olsen 2009 for defenses of the ‘Lex Francis-Normier’).
32 In Villanueva Svensson (2016: 52–54) I have argued that *gʷyeh₃- did not make a primary verb in PIE. If correct, this adds another argument against the assumption of a u-present.
with an ‘extraordinarily archaic’ relic (e.g., Meier-Brügger 2000: 157). Neither option can be categorically excluded, but neither is particularly appealing. I will here limit myself to noting that the pair *gʰɨh₃uó- / *gʰɨh₃uɛ-o- need not be older than Core PIE.\textsuperscript{33}

The pattern adj. *gʰɨh₃uó- → vb. *gʰɨh₃uɛ-o- allows for only two possible analyses: *gʰɨh₃uó- → *gʰɨh₃uɛ-o- (conversion) or *gʰɨh₃uó- → *gʰɨh₃uɛ-e/o- (the thematic vowel was a denominative suffix). There does not seem to be any clear-cut supportive material in favor of either analysis. The second one would imply that the thematic vowel of *gʰɨh₃uó- was deleted in *gʰɨh₃u(e/o)-e/o-, in spite of the fact that the thematic vowel was otherwise not deleted in derivation except for the special case of i-stem abstracts like *h₂o/ék- /i- ‘point, peak’ ← *h₂ek-ro- / ‘pointy, sharp’ (cf. Schindler 1976: 351).\textsuperscript{34} The first analysis is intuitively simpler and will be upheld in what follows. The question now is whether the conversion *gʰɨh₃uó- → *gʰɨh₃uɛ-o- was a unique case or was part of a regular derivational process at a given stage of the parent language.

\textsuperscript{33} Hitt. hwiš-.\textsuperscript{m}i ‘live’ may well preserve the Indo-Hittite verb ‘to live’. Meanings like those of Ved. vásatī ‘stay, dwell’, Gk. ἱσῶ ‘spend the night’, Go. wisan ‘be’, etc. (LIV: 293–294) are easy to understand if in Core PIE *h₂y̯es- ‘live’ was restricted to ‘live’ = ‘reside’ by the emergence of *gʰɨh₃(u)- ‘live’ = ‘be alive’. This possibility may have intriguing ramifications. As J. Jasanoff (p.c.) and B. Fortson (p.c.) point out to me, the Hittite pattern adj. huišu- ‘fresh, raw’ (< *living) / vb. huı̯šwe/a-.\textsuperscript{m}i ‘stay alive, be alive’ is curiously reminiscent of that of Core PIE adj. *gʰɨh₃uó- / vb. *gʰɨh₃uɛ-o-. Hitt. huı̯šwe/a-.\textsuperscript{m}i could even continue a thematic denominative *h₂y̯es-u-e/o-, just like *gʰɨh₃uɛ-o-. As far as the latter possibility is concerned, Hitt. huı̯šwe/a-.\textsuperscript{m}i may equally well continue *h₂yesu-e/o- (e.g., Oettinger 1979: 331) and be entirely unrelated to *gʰɨh₃uɛ-o-. As for the adjective, it cannot be excluded that Core PIE *gʰɨh₃uó- was modeled on Indo-Hittite *h₂y̯e(e)s-u- and continues a u-stem adjectival *gʰɨh₃u- that was thematized at an early date (thus, perhaps, implying an analysis *gʰɨh₃u-e/o- for the verb). But we can probably not exclude the opposite option that Hitt. huı̯šwe- was built on the model of *gʰɨh₃u-yo- and continues a thematic *h₂y̯e(e)s-yo- (or, alternatively, that *h₂y̯e(e)s-yo- is old and provided the model for *gʰɨh₃u-yo-). The point to stress is that the parallelism of Hitt. huı̯šwe- / huı̯šwe/a-\textsuperscript{m}i and Core PIE *gʰɨh₃u- / *gʰɨh₃uɛ-o- / *gʰɨh₃uɛ-e/o-, if real (which is uncertain), can be interpreted in different ways. It is not self-evident to me that it has a bearing on the topic discussed in this article.

\textsuperscript{34} To be sure, a possible parallel for this analysis could be provided by PIE *pōtjētor ‘be master, rule’ (Ved. pātyate, Lat. potior, -ir; see most recently Grestenberger 2016: 135–136). This is clearly a denominative of pōti- ‘master’ (Ved. pāti-, Gk. πᾶτ Ле) and thus seems to imply pōti- / *pōti-e/o-/; but it is the only certain case and, accordingly, the possibility cannot be discarded that *pōti-e/o- rests on some type of local analogy (like, for instance, the unique feminine *pōt-nh₂- [Ved. pātnī-, Gk. πῶτναξ], which is analogical to *rḗj-nh₂- [Ved. rājñī-, OIr. rígain]).
8 Conversion in PIE denominatives

To answer this question, it is necessary to take a fresh look at the PIE denominatives. For obvious reasons, only matters directly related to the pattern \( *g^wih₃uó- \rightarrow *g^wih₃ue/o- \) will be addressed here.

8.1 The (lack of) evidence

Our first observation concerns the nature of the evidence. Denominatives are easily replaced and/or adapted to new productive patterns. As a result, they are difficult to study using the material we normally employ to study Indo-European morphology: word equations in at least three branches and fossilized formations that must be old on internal grounds. Cases like Lat. sepelio, -ire ‘bury’ = Ved. saparyati ‘honor’, Lat. arguō, -ere ‘declare, prove’ = Hitt. arkuwā(i)-mi ‘make a plea’, or Lat. rubeō, -ère ‘be red’ = Ofr. ruidid ‘blush’ = OCS radēti, radī-se ‘id.’ = OHG rotēn ‘turn red’ are exceptional (note, in addition, that the last one cannot be formally distinguished from a deverbative). The same holds true for items arrived at through internal reconstruction (e.g., Gk. βλίττω ‘cut out the comb of bees, take the honey’ < \( *mlit-je/o- \), with archaic zero grade vis-à-vis μέλι, -ιτος ‘honey’ < PIE \( *melit- \)).

Let us now assume, for the sake of argument, that adj. \( *g^wih₃uó- \rightarrow vb. *g^wih₃ue/o- \) was a regular pattern of early Core PIE. What type of evidence can we expect? ‘Alive’ and ‘to live’ survived because they became part of the core vocabulary, but this is exceptional. Most denominatives surely disappeared long ago. Those that survived will be predictably hard to distinguish from primary verbs. For present purposes, it is enough to note that the apparent absence of supportive evidence for the pattern adj. \( *g^wih₃uó- \rightarrow vb. *g^wih₃ue/o- \) is not a conclusive argument against its potential regularity. If the thesis defended in this article is accepted, more potential examples may well show up in the future.

8.2 Conversion and other non-canonical PIE denominatives

The second point to be discussed is more important. The dominant PIE denominative suffix was clearly \( *-i̯e/o- \). Secondarily productive suffixes like \( *-ah₂-i̯e/o-, *-eh₁-i̯e/o-, *-e-je/o- \) or \( *-n-je/o- \) only strengthen this impression. Cases of conversion occur (e.g., Ved. bhīṣāj- ‘physician’ → bhīṣākti ‘heals’), but they are exceptional. This seems to imply that adj. \( *g^wih₃uó- \rightarrow vb. *g^wih₃ue/o- \) was a sporadic case and not part of a regular derivational process.

This panorama, however, is not fully accurate. Perhaps the only generally accepted denominative suffix without \( *-je/o- \) is \( *-ah₂-, \) well known from the Hittite factitives in -aḫḫ- (e.g., nēwa- ‘new’ → nēwahḫḫ-bbi ‘make new’); see espe-
cially Jasanoff (2003: 139–141). In Core PIE this suffix is only seen in the ‘Aeolic’ inflection of contract verbs in Greek, which is not restricted to denominatives in -άω/-ἀμι (cf. Rau 2009b), and in Balto-Slavic, where *-ā- is a deverbal suffix (cf. Villanueva Svensson 2020). It otherwise merged with *-ah₂-ie/o- at an early date. It is probably fair to say that *-ah₂- would not have been generally recognized without Hittite, but the status of this suffix has recently changed as a result of closer inspection of the minor Anatolian languages. As argued in detail by Sasseville (2015), the Luvian languages indicate that the ah₂-verbs derive from ah₂-stem nominals through conversion, not, as previously thought, from thematic adjectives (e.g., CLuv. tarpāššā- ‘ritual substitute’ → tarpašša-‘substitute’, Lyc. prīnawa-‘grave-house’ → prīnawa-‘build (a grave-house)’).

This immediately brings the pattern adj. *gʷih₃u̯ó- → vb. *gʷih₃u̯e/o- out of isolation. Conversion could be a regular pattern at an early stage of the development of the parent language. Although not exactly comparable, it is worth mentioning here two other denominative formations that do not contain the pervasive suffix *-i̯e/o- and that would be irrecoverable without Anatolian: 1) Hittite fientives in -ēšš₃-mi < PIE *-eh₁-s- (e.g., marša- ‘false’ → marš-ēšš₃-mi ‘become false’), almost certainly containing the PIE desiderative suffix *-(h₁)s-; 2) Hittite (and generally Anatolian) factitives in -nu- derived from u-stem adjectives (e.g., Hitt. daššu- ‘strong’ → dašš(a)nu₃-mi ‘strengthen’). Both formations are evidently old and both involve morphology that is not otherwise associated with denominatives. The second formation has left isolated relics in Core PIE (e.g., Ved. dabhnōti, GAv. dōbənauti ‘deceive’, cf. Hitt. tepnu₃-mi ‘despise’ ← tēpu- ‘small’) and is probably continued, in greatly transformed fashion, in the Greek factitives in -ōνυ < *-un-i̯e/o- (e.g., θρασσύς ‘bold’ → θρασσύνω ‘encourage’, cf. Ved. dhṛṣṇōti, OCS drāṣṇuṭi ‘dare’). 35 As for Hitt. -ēšš- (without clear cognates even in Anatolian), possible cognates include Latin inchoatives in -ēscō (e.g., senēscō, -ere ‘grow old’) and the -s- of Gk. fut. -ήσω, aor. -ησα. Be that as it may, it is evident that few scholars would have started from a PIE suffix *-eh₁-(h₁)s- if we did not have the Hittite data.

The gulf between Core PIE and Indo-Hittite need not be exaggerated. The ubiquitous denominative suffix *-i̯e/o- is productive in Anatolian, including resegmented suffixes like *-ah₂-ie/o-, *-eh₁-ie/o- and *-e-i̯e/o-. What Anatolian shows is that denominatives in Indo-Hittite presented a more variegated picture. The extension of *-i̯e/o- as (virtually) the only denominative suffix can

35 The existence of a class of PIE nu-factitives derived from u-stem adjectives was established by Koch (1973) and Tucker (1981: 22–29).
thus be seen as a Core PIE trend. It is also reasonable to suppose that in early stages of Core PIE ‘non-canonical’ denominatives (including conversion denominatives) had a larger presence than in late Core PIE and in the daughter languages.

These considerations, to be sure, only show that the conversion pattern adj. *gʷih₃uó- → vb. *gʷih₃ue/o- may have been regular at an early stage of the development of the parent language, not that it actually was. Clear-cut corroborative evidence is missing, but, as argued above (§ 8.1), this is expected in the case of denominatives and cannot be considered a strong argument against the existence of a regular derivational pattern adj. *gʷih₃uó- → vb. *gʷih₃ue/o-. A stronger argument would be the fact that conversion seems never to have played a major role in PIE word formation, with the result that adj. *gʷih₃uó- → vb. *gʷih₃ue/o- proves as little for PIE as bhiṣáj- → bhiṣákti for Vedic. This argument, in my view, has effectively been annulled by the recent recognition that ah₂-denominatives arose by conversion from ah₂-stems. Conversion probably never was a major derivational process, but we now know that it had a presence in early stages of the language and that in specific types it enjoyed a certain productivity for a certain period of time. At present, unfortunately, it is not possible to be more specific.

Another matter that must be left open is the timeframe of the pattern adj. *gʷih₃uó- → vb. *gʷih₃ue/o-. It may have been an Indo-Hittite pattern that has left no certain traces in Anatolian (or, rather, traces that are still to be found), but it may also have been a specific development of early Core PIE (perhaps, but not necessarily on the model of conversion from ah₂-stems). For present purposes it is enough to note that there is no principled reason why the pattern adj. *gʷih₃uó- → vb. *gʷih₃ue/o- could not have been a regular morphological process of early Core PIE—the stage in which the type *bʰéᵽ-e/o- arose.

9 The origin of the PIE simple thematic presents

We can finally return to the simple thematic presents. Let us recall the basic facts. This type appeared after the separation of Anatolian and quickly became productive. By the end of Core PIE it was a robust and numerous class. We will return to the expansion of the type in § 10 below. What concerns us here is the initial core from which the type emerged. As argued above (§ 5), there is no obvious niche in the PIE verb system from which the type *bʰéᵽ-e/o- could have arisen. A possible way out is to postulate that the initial core of simple thematic presents was of denominative origin, an account that would also explain their paradigmatic and functional indeterminacy. As we have just seen (§ 7–8), this
is indeed possible and is supported by at least one excellent piece of evidence, (Core) PIE *gʷ₁h₃we/o- ‘to live’.

9.1 Derivational base: adjectives of the type λευκός

Our next task is to test whether this theoretical possibility has any chance of being what actually happened. It will be convenient to begin with the derivational base. In some cases, the thematic present is the only certain old formation of a given verbal root, a fact that within our framework could (but need not) imply that the verbal root itself is of nominal origin. This, however, is the exception rather than the norm. The vast majority of simple thematic presents were built to an already existing verbal root (as is evident, for instance, in the case of aoristic roots). This implies that the derivational base of the type *bʰěr-e/o- must be sought in non-suffixal, deverbal o-stems. These are the familiar τόμος and τομός types, on which see most recently Nussbaum (2017: 234–242). Since constant e-grade is one of the main characteristics of the type *bʰér-e/o-, this would seem to put an end to the whole ‘denominative approach’. It makes no sense to look for its origin in a class of nominals characterized by the o-grade of the root.

Fortunately, this is not the whole story about deverbal o-stems. Scattered e-grade deverbal adjectives are attested all over the family, e.g., Gk. λευκός ‘white’ (*leu̯k- ‘shine’), Lat. fidus ‘trust’ (*bʰeidh₂- ‘trust’), Lith. gėras ‘good’ (*gʷerh₂ ‘praise’), Arm. cer ‘old’ (*ğerh₂- ‘grow old’), etc. The type λευκός (as it will be called in what follows) has now been placed in a completely new light by Nussbaum (2017: 243–250 and passim). I refer to Nussbaum’s article for full discussion of the data and simply take his results for granted.

The type λευκός is not as marginal as usually thought. Nussbaum’s evidence includes about 25 items (excluding evidence from Germanic, the only branch in which the type acquired a secondary productivity, as well as indirect evidence of one or another sort). Most λευκός-type adjectives are einzelsprachlich, but, it is important to stress, they cannot be generated within their respective traditions and must thus be relatively old. The picture that emerges is that of a regular type that at some point became obsolete. Nussbaum (2017: 258–259) further argues that the type λευκός was derived from nomina actionis of the type τόμος (schematically: R(ó)-o- → R(e)-ó-):

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36 Denominal o-stems and thematic suffixes will thus be left out of consideration in what follows. See Weiss (2009: 270–273) for a short, but essentially complete survey of the PIE non-suffixal o-stems.

37 For convenience in this section I maintain Nussbaum’s reconstruction in all its details. We will return to the formal and derivational properties of the type λευκός below in § 9.2.
Verb *leu̯k-* ‘shine’ (Ved. aor. ároci ‘shone forth’, Hitt. lukta ‘grows bright, dawns’) → subst. *lóu̯k-o* ‘brightness’ (Ved. róka- m. ‘light’, Arm. loys ‘light’, Lat. lúcus ‘grove’, Lith. laũkas ‘open land’, OE léah ‘open land’) → adj. *leu̯k-ó* ‘bright’ (Gk. λευκός ‘white’, perhaps OIr. lóch ‘bright’; indirectly Gk. λεύκη ‘white rash’, Lith. liaukà ‘gland’ < coll. *leu̯k-eh2-).

Still within the parent language the derivational pattern R(ó)-o- → R(e)-ó- was replaced by the familiar R(ó)-o- → R(o)-ó- (perhaps by simply adopting the vocalism of the derivational base):

Subst. *lóu̯k-o* ‘brightness’ → adj. *lou̯k-ó* ‘bright’ (Ved. rocá- ‘bright’, Lith. laũkas ‘with a white spot on the forehead’, perhaps OIr. lóch ‘bright’).

The chronology of this replacement cannot be determined with certainty. The type τόμος is not attested with certainty in Anatolian and Tocharian (two branches in which the type τόμος is well attested), but neither are e-grade o-stem adjectives productive.38 It is reasonable to suppose, in any case, that the type λευκός, though no longer a productive formation, was still well represented at an early stage of Core PIE.

9.2 Conversion denominatives and the origin of the simple thematic presents

The importance of the type λευκός for the origin of the simple thematic presents should by now be evident. If, as argued above, early Core PIE could make denominatives from thematic nominals through conversion, there is no reason why the type λευκός should have been excluded. The above schema can now be extended as follows:

Vb. *leu̯k-* ‘shine’ → subst. *lóu̯k-o* ‘brightness’ → adj. *leu̯k-ó* ‘bright’ → vb. *léu̯k-e/o- ‘be/become/make bright’ (Ved. rócate ‘shine’, YAv. raociṇt- ‘shine’, TB Cl. II subj. lyuśtär ‘lights up’).

Once e-grade adjectives like *leu̯k-ó* were replaced by o-grade *lou̯k-ó* as the productive formation, both the adjective *leu̯k-ó* and its denominative *léu̯k-e/o- became free, so to speak, to follow their own course. Adjectives of the type λευκός slowly disappeared, leaving a number of mostly einzelsprachlich and/or lexically specialized relics. Denominatives like *léu̯k-e/o- were also bound to disappear, leaving behind a limited number of relics that in most cases would be hard to distinguish from primary verbs. To a certain degree this is what happened, but in an indeterminable number of cases original denominatives like *léu̯k-e/o- were reinterpreted as primary presents. This was the origin of the type *bhér-e/o-.

38 Malzahn’s (2013) survey for Tocharian includes almost 50 nouns of the type τόμος (sometimes difficult to distinguish from the type τομάς), but only 7 instances of the type λευκός, some of them dubious and most of them lexicalized.
It is almost otiose to speculate what may have triggered such a remarkable (but not unparalleled) development. The process was probably favored by several circumstances: 1) there already was a robust class of thematic present stem suffixes that rendered thematic inflection ‘natural’ in the PIE verb; 2) the conversion process *gʷih₂u̯ó- → *gʷih₂ue/o- (*leuk-ó- → *léuk-e/o-) became obsolete at a certain (probably early) stage of the development of Core PIE; 3) in many cases the derivational relationship between the λευκός-type adjective and its conversion denominative must have become unclear at an early date. It is perfectly possible that in many cases the adjective was lexicalized and the original denominative kept a general meaning closer to that of the primary verbal root.\(^{39}\) It is also possible that in other cases the adjective was reinterpreted as built to what now looked like a primary present.

As for the verb system, we will probably never know what made the integration of a new present stem *léuk-e/o- in the individual verbal system of roots like *leuk- desirable or at least acceptable. In some cases, it may have provided a present for a root that did not have one (e.g., *der- ‘split’, *yert- ‘turn’). In other cases, it may have provided an intransitive middle present contrasting with a different active-transitive present stem (e.g., *hβei̯d- ‘split’, *k̑lei̯- ‘lean’) or, conversely, an active-transitive present contrasting with a different middle present (e.g., *g̑enh₁- ‘give birth’, *pekʷ- ‘cook’). It may have provided a semantically specialized present that contrasted with older present stems (e.g., *b̑hευdhl- ‘wake up; notice’, *sneigʷh- ‘stick; snow’). Whatever the reasons might have been (and

\(^{39}\) As B. Fortson (p.c.) points out to me, a potential problem in this scenario is that it requires the base verbal adjectives to have had a rather general meaning, even though one would rather expect many of them to have had concrete meanings from the very beginning. The same caveat applies to an even greater degree to the denominatives, with the result that few of them would have had any chances of being reinterpreted as directly built to an already existing verbal root. This is part of a more general problem. The tendency to reconstruct general, abstract meanings for PIE etyma is probably unavoidable, as the concrete meanings that they may have had are often not accessible to us. This, however, becomes a major problem when one operates with complex derivational channels that for the most part are posited for formal and/or morphological reasons. The lack of attention to semantics may result in formally impeccable scenarios that have little chance of ever having taken place in reality (‘redness’, to give an often quoted example, is as unlikely to have been an everyday concept for the Indo-Europeans as it is for us). This is certainly true, but, in my view, is a more pressing problem for nouns than for (verbal!) adjectives. At least some λευκός-type adjectives must have displayed the general meaning of the verbal root and there is no reason why denominatives could not have been derived from them. Our scenario only requires this for some λευκός-type adjectives and their associated denominatives, not for all or even most of them. The key element, in any case, is not the semantics or productivity or these formations, but the fact that some denominatives, for reasons that will probably never be recovered, were reinterpreted as directly built to the verbal root.
they probably diverged from verb to verb), there is no reason to consider such a development problematic.

A final issue that needs to be addressed is that of accent. Hitherto I have tacitly operated with the assumption that there was an accent shift in adj. *leu̯k-ó- → vb. *léu̯k-e/o- 40 This is of course quite problematic. One would rather expect the conversion denominative of adj. *leu̯k-ó- to keep its accentuation (3 sg. *leu̯k-é-ti, 3 pl. *leu̯k-ó-nti) and there is no obvious reason why the alleged *leu̯k-é-ti/*leu̯k-ó-nti should have shifted the accent to the root. Luckily, there is a simple way to solve this problem that has, in addition, important consequences for the derivational status of the type λευκός.

Let us begin by noting that the derivational pattern subst. *lóu̯k-o- ‘brightness’ → adj. *leu̯k-ó- ‘bright’ is slightly counterintuitive. The full grade is normally accented in archaic PIE formations (except for vr̥ddhi derivatives, which are irrelevant here) and, overall, I am not aware of clear parallels. Since adjectives of the type λευκός can usually be interpreted as directly built to the verbal root, one may wonder whether the extra step *lóu̯k-o- ‘brightness’ is actually necessary. A logical alternative is that both subst. *lóu̯k-o- and adj. *leu̯k-ó- were primary derivatives that only secondarily became associated to each other. As for the oxytone agential *lou̯k-ó- ‘bright’, it can perhaps be interpreted as a cross of *leu̯k-ó- and *lóu̯k-o-, but it seems more likely that it was an internal derivative of *lóu̯k-o- that had nothing to do, originally, with *leu̯k-ó- 41 From a certain point, then, PIE possessed two formally and semantically very similar formations. It is only expected that one of them would oust the other from usage. It is also reasonable to expect some interference between the two formations and, more specifically, some influence of the productive type τομός on the unproductive type λευκός. The constant e-grade of the type λευκός may be taken as an indication that this type was originally accented on the root (*léu̯k-o-). The oxytonesis of *leu̯k-ó- can be easily explained as secondary, adopted from the type *lou̯k-ó- and, conceivably, from other oxytone o-stem adjectives (vr̥ddhi *dei̯u̯-ó-, ‘possessive’ *yets-ó-, etc.). The accent of thematic presents like *léu̯k-e/o- is thus an archaism predating the adoption of oxytonesis in adj. *léu̯k-o- >> *leu̯k-ó- (which ex hypothesi has to be late Core PIE or even post-Core PIE). 42

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40 Also in adj. *gʷθ̌w̌ú- → vb. *gʷθ̌w̌úe/o-, though *gʷθ̌w̌úe/o- may simply have adopted its root accent from the emergent type *bʰer-e/o-.

41 This is probably the communis opinio concerning the origin of the type τομός, cf. Weiss (2009: 272) among others.

42 The evidence for oxytone accentuation in the type λευκός is predictably slim. In addition to λευκός itself, it is reduced to Germanic forms like *(-)werda- ‘turned’ < *yertos-, *dreuzan- ‘blood’ (OE drēor) < *dʰreusó- and to a few Vedic candidates (padá- nt. ‘step’, bhrājá- ‘shin-
As a consequence, the above schema can now be rewritten in a simple way:

Vb. *leu̯k- ‘shine’ → adj. *léu̯k-o- ‘bright’ (Gk. λευκός ‘white’) → vb. *léu̯k-e/o- ‘be/become/make bright’ (Ved. rócate ‘shines’, TB Cl. II subj. lyuśtär ‘lights up’).

9.3 The evidence

The original core of thematic presents of denominative origin can of course not be determined with any degree of certainty. What can be done is to check whether a significant number of adjectives of the type λευκός have an old simple thematic present beside them.

The following survey is based on Nussbaum’s evidence (2017), with the addition of a few other candidates. I have made the list as complete as was possible for me, but it does not claim to be exhaustive. If the framework presented here is accepted, new examples will surely show up in the future. I have excluded from consideration thematic presents only attested in generally innovative areas (e.g., Italo-Celtic or Balto-Slavic), but apart from this the only criterion for inclusion has been the absence of positive evidence indicating that the material I quote is not old. A detailed treatment of every item would be out of place here. Global reference is henceforth made to LIV for the simple thematic presents and to Nussbaum (2017) for the base adjectives.

43 Since the evidence for the original accentuation of adjectives of the type λευκός is not completely clear (see above in §9.2), I do not specify it in the list. In my view, λευκός-type adjectives were root-accented when the conversion denominatives were created (i.e., adj. *bheijdh-o- → vb. *bheijdh-e/o-).

44 This option seems better to me than taking PIE *bheiristo- as directly built to the verbal root. Deverbal comparatives and superlatives are only found with certainty in Indo-Iranian (Ved. jávīyas- ‘faster’, jávīṣṭha- ‘fastest’, from jav- ‘quicken’) and are probably an innovation of this branch.
- *ḫ̅rε̅u̅rdʰ-*o- ‘shining’ (Ved. bhrājā-, YAv. brāza-) → *bʰrēh₂ɡ-ö-o- ‘shine’ (Ved. bhrājate, YAv. brāzaiti).45
- *ɡen̥h₂-*o- ‘born’ (Lat. indi-gena ‘native’; OIr. ingen ‘daughter’, Ogham INI-GENA < Celt. *eni-genā; Gaul. PN Andagenus; OIr. PN Sogen, Ogham gen. sg. SOGINI < Celt. *su-geno- < PIE *h₁-su-ɡenh₁-o-; Skt. su-jana- ep. ‘good by nature’; Arm. cin ‘birth’, ando-cin ‘house-born (slave)’)46 → *ɡēnh₁-o- ‘make born; give birth’ (Ved. jānati, OLat. genō, -ere).
- *ɡer̥h₂-*o- ‘aged’ (Arm. cer ‘old’) → *ɡérh₂-o- ‘make old’ (Ved. jārati).
- *ɡʷerH-o- ‘praised’ (Lith. gėras ‘good’) → *ɡʷérH-o- ‘greet, praise’ (Ved. járata).
- *h₁r̥e̅u̅rdʰ-o- ‘red’ (Go. -ru̜ps, ON rjóðr, OE rēod)47 → *h₁réu̜dʰ-e-o- ‘make red’ (Gk. ἕρευθω, ON rjóða, OE rēodan).
- *h₁γers-o- ‘dewy’ (Gk. ἔρηπη, Hom. ἔρηπη, Cret. ἔρηπα ‘dew’, Ved. varsā- nt. ‘rain’, varṣā- ‘rainy season’) → *h₁γers-e-o- ‘rain’ (Ved. vārsati ‘rains’).48
- *k̂el-o- ‘covered, covering’ (Mlr. téit for cel ‘go to concealment’)49 → *k̂el-e-o- ‘conceal’ (Lat. oc-culō, OLat. ceilid, OE helan).
- *k̂eu̜k-o- ‘shining’ (TB šuke ‘shining, sparkling’)50 Ved. šokā- ‘shining, glowing’ AV) → *k̂eyk-e-o- ‘shine’ (Ved. sócāti ‘shine, burn’, Av. saociṇt-).
- *kʷelh₁-o- ‘going round’ (substantivized OPr. kelan ‘wheel’, ON hvel ‘wheel’) → *kʷelh₁-e-o- ‘go around’ (Ved. cáráti, Av. caraiti, Gk. πέλομαι, Lat. colō, -ere).
- *lēgʰ-o- ‘lying down’ (TB lyake ‘obstacle’)51 → *lēgʰ-e-o- ‘lie down’ (TB Cl. II pres./subj. lyaszam, Gk. λέχεται: κοιμάται Hsch., perhaps OIr. laígid, Fal. (lecet)).
- *leuk-o- ‘bright’ (Gk. λευκός ‘white’) → *lēu̜k-e-o- ‘be/make bright; shine’ (Ved. rōcāte, YAv. raocint- ‘shine’; TB Cl. II subj. lyuṣṭār ‘lights up’). See above § 9.2.
- *pekʷ-o- ‘cooked’ (if implied by Gk. πέπων ‘cooked, ripe’) → *pēkʷ-e-o- ‘cook’ (Ved. pácatti, Lat. coquō, Lith. kėpa, etc.).
- *segʰ-o- ‘standing fast’ (MW hy ‘brave’, substantivized Mlr. seg ‘vigour’; perhaps Ved. sāhā- ‘powerful’) → *sēgʰ-e-o- ‘hold (on)’ (Ved. sāhate ‘overpower’, Gk. εχω ‘have’).

45 Only Indo-Iranian. See Rau (2009a: 97, 148) for Ved. bhrājā- as a primary Caland adjective.
46 The evidence for *ɡen̥h₁-o- is mostly indirect, but strong; cf. Nussbaum (2017: 247).
47 See Rau (2009a: 71 and passim) for the o-stem adjective as part of the Caland system of *h₁r̥e̅u̅rdʰ- ‘red’. The e-grade *h₁réu̜dʰ-o- is only assured for Germanic, which also has o-grade *h₁r̥e̅u̜dʰ-o- (Go. raufs, ON rauðr, OE rēad). The rest of the evidence is ambiguous.
48 LIV: 291 reconstructs the root as *h₂γers-. The nature of the initial laryngeal is immaterial for present purposes.
49 According to Merritt (2019), with a detailed study of the nominal derivatives of this root.
50 Uncertain, cf. Malzahn (2013: 172).
51 Cf. Malzahn (2013: 171).
As noted above, it makes no sense to insist on the correctness of every example. The list could be extended with indirect evidence, but the material presented above is probably enough. We know the type λευκός was instatumoriendi in late PIE. Accordingly, the number of items that have a simple thematic present beside them (about half of Nussbaum’s evidence) is sufficiently high to be regarded as significant. As for the thematic presents, this is a productive formation and we can never be certain that a given item belonged to the original core. Nevertheless, our list includes some of the best established simple thematic presents of PIE (*bhér-, *kwelh₁-, *uēgh₁-, *uert-, etc.).

In short, it seems fair to say that the evidence is fully compatible with the hypothesis of the origin of the simple thematic presents sketched above (§ 9.2). The type *bhér-e/o- originated in a group of denominatives from adjectives of the type λευκός that arose through conversion at an early stage of Core PIE. Their recategorization as primary present stems was also an early development. If correct, this scenario raises a number of new issues. Within the limits of this article I can only deal with the early development of the type *bhér-e/o-.

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52 Only attested in Germanic and thus of limited probative value.
53 Only attested in Germanic, but probably old on internal grounds, cf. Nussbaum (2017: 244).
54 Thus, Nussbaum (2014: 236) postulates an unattested adjective **der-o- ‘split’ as the derivational base of the u-stem *dör-u- ‘splent’ > (piece of) wood’ (Ved. dāru, Gk. δέρω, etc.). If correct, the adjective **der-o- could have been the derivational base of the thematic present *dör-e/o- ‘split’ as well (Gk. δέρω, Go. tairan, OCS derǫ, etc.).
55 I will limit myself to mentioning two of them. First, the recognition of the denominative origin of the class of simple thematic presents has obvious potential interest for the link between simple thematic presents and the Caland system established by Rau (2009a: 146–160). Second, the subjunctive now emerges either as a formation fully unrelated to the type *bhér-e/o- or, perhaps more likely, as a classical Core PIE creation based on the latter (as recently proposed by Bozzone 2012 and Dahl 2013). Needless to say, both issues require a large-scale study.
The expansion of the simple thematic presents in Core PIE

The original core of denominative simple thematic presents that were reinterpreted as primary presents cannot be recovered. Presents like *bhér-e/o-, *kwenl-e/o-, *léuk-e/o-, *uég-e/o-, and others mentioned above are excellent candidates, but this as much as can be said. There is no reason to suppose that it was a small group, but this is not of paramount importance.56

A more important feature for present purposes is the functional and paradigmatic indeterminacy of the type *bhér-e/o-. Simple thematic presents could be both transitive and intransitive, be made to both present and aoristic roots, correlate with root aorists, with sigmatic aorists, or with no aorist at all. They were not linked to any specific Aktionsart and freely occurred beside other present stems. This, as noted above, may be regarded as a consequence of their denominative origin (though, needless to say, it cannot be regarded as proof of such an origin). Nevertheless, individual items entered into more specific configurations within their individual verbal systems or even roots. Recent research has highlighted the connections of some subgroups of simple thematic presents to Narten presents (Jasanoff 1998: 305–307), to sigmatic aorists (Jasanoff 1998: 307–311), to the Caland system (Rau 2009a: 146–160), or to the middle voice (Rau 2016: 358–363; so already Hollifield 1977: 90–95, 136–137). It must be noted that the most specific groups (e.g., Jasanoff’s “Narten profile” and “sigmatic aorist” groups) are not numerous (around five certain roots in each case), whereas the “Caland group” and the “middle-intransitive group” are too loosely defined to be truly useful. In addition, it is not difficult to find potentially old simple thematic presents that do not belong to any of these groups (e.g., *der- ‘split’, *plek- ‘plait’, *seg- ‘fasten’). The point to stress is that it would be arbitrary to pick one subgroup as the original one. Rather, the unmarked reading of the evidence is that by the breakup of (classical) Core PIE simple thematic presents constituted an extraordinarily variegated class. There is no reason to believe that it was ever otherwise.

56 It is well known that productive formations may develop out of a rather modest core. Well-known examples include the expansion of the athematic 1 sg. -me in Western and Southern Slavic or the expansion of the ‘alphathematic’ aorist in Greek.

57 “Narten affinities” are certain (or, at least, very reasonable) for *bher- ‘carry’, *hsegl- ‘drive’, *segl- ‘gather’, *nem- ‘take’, and *nes- ‘come back’. Old sigmatic aorists are certain for *dsegθ- ‘burn’, *pekw- ‘cook’, *uédθ- ‘lead’, and *uégθ- ‘convey’. But the list of absolutely certain examples practically stops here. Other “Narten roots” did not acquire a thematic present or did so only after Core PIE (e.g., *pleu- ‘float, swim’, *klep- ‘steal’). Old sigmatic aorists correlate with other present stems as well (e.g., *dejk- ‘show’, *prek- ‘ask for’).
The existence of specific subgroups, on the other hand, may be important to understand the expansion of the thematic presents (or, to be more precise, the paths along which the expansion took place). It has also been observed that some of the oldest simple thematic presents cluster around specific semantic groups, e.g., verbs of burning (*pekʷ- ‘cook’, *dhegʰ- ‘burn’; *h₁eus- ‘burn’) or verbs of bringing (*bʰer- ‘carry’, *u₂eɡʰ- ‘convey’, *yedʰ- ‘lead’, *neiH- ‘lead’). In other cases a formal resemblance is also self-evident (e.g., *u₂eɡʰ- ~ *yedʰ-). If, for instance, *bʰér-e/o- ‘carry’ and *u₂eɡʰ-e/o- ‘convey’ belonged to the original core of simple thematic presents (see above § 9.3), *h₂eɡʰ- ‘drive’ and *yedʰ- ‘lead’ may well have acquired the familiar present stems *h₂eɡʰ-e/o- and *yedʰ-e/o- on analogy with them. This is virtually certain for *néiH-e/o- ‘lead’ (Ved. náyati, YAv. naiieiti), which built a molō-present in Indo-Hittite (Hitt. nai-bbi ‘turn’). Similarly, *pléu̯-e/o- ‘float, swim’ (Ved. plávate, Gk. πλέω, Lat. pluit, OCS plovǫ) may be a classical Core PIE coinage on the model of the rhyming *sréu̯-e/o- ‘flow’ (see above § 9.3); contrast TB Cl. I subj. plyewāṃ ‘will float’ < *plēu̯-, which points to a PIE Narten present *pléu̯-ti/*pléu̯-nti. It is reasonable to suppose that the existence of a limited number of old thematic presents beside Caland roots (e.g., *h₁reydʰ- ‘red’, *leuk- ‘shine’, *pleth₂- ‘broad’) served as a model for the creation of others. The same holds true for other subgroups like that of middle thematic presents in opposition to active nasal presents.

In short, the bulk of the early expansion of the simple thematic presents must have taken place in the form of local analogies like these, even though the details are probably irrecoverable. This, however, need not have been the only way. It has been observed that many of the roots that made simple thematic presents in Core PIE are missing in Anatolian (e.g., *leɡ- ‘collect’, *pekʷ- ‘cook’, *sekʷ- ‘follow’, etc.). At least some of them probably entered the PIE lexicon after the separation of Anatolian and may well have made a simple thematic present from the very beginning. Another source may have been provided by fossilized suffixal presents. Thus, PIE *h₂léks-e/o- ‘protect’ (Ved. rákṣati ‘protect’, Gk. ἅλξιω ‘ward off, defend’) is clearly a fossilized desiderative of *h₂elk- ‘protect’ (LIV: 264). We do not know when *h₂lék-se/o- was reanalyzed as *h₂léks-e/o-, but cases like this may well be old. Finally, although neither thematization nor displaced subjunctives are acceptable frameworks to account for the origin of the type *bʰér-e/o- (see above, § 5), they may have been additional.

58 As already highlighted by Hollifield (1977: 99).
59 Lehrman (1985: 262) gives a list of about 30 roots. Some of them are incorrect or questionable, but a significant number of cases remain.
contributing factors in the expansion of the type. Inner Core PIE thematizations will be hard to distinguish from local analogies, if this is possible at all. Simple thematic presents can only sporadically go back to displaced subjunctives, but specific cases like *kléus-e/o- ‘listen’ (Ved. śröṣati, TB klyauṣām) may be quite old (cf. Jasanoff 2003: 182).

The (classical) Core PIE expansion of the simple thematic presents continued in the prehistory of the historical languages, in ways that partly differed from earlier stages (thematization, for instance, acquired an importance that it did not previously have). This, however, is beyond the scope of this paper.

11 Conclusion

The results of this paper can be summarized as follows. At the oldest stage of the parent language that we can reach by the historical-comparative method, thematic inflection in the verb was a property of some present stem suffixes (*-i̯e/o-, *-sk̑e/o-, etc.). The Indo-Hittite (or even Core PIE) antiquity of all other verbal thematic formations is questionable. The clearest case is that of the simple thematic presents with full grade of the root, the type *bhér-e/o-. Anatolian has no inherited simple thematic presents, which almost certainly implies that the type *bhér-e/o- arose after the separation of Anatolian (whether its productivity postdates the separation of Tocharian is much less certain). There is, however, no obvious way to account for the origin of this formation in the early Core PIE verb system.

The main goal of this article has been to argue for an alternative denominative approach, an approach that has only become possible after some recent findings (Sasseville 2015; Nussbaum 2017). At an early stage of Core PIE denominatives could be made from thematic nominals through conversion, a pattern clearly seen in adj. *gʷih₃yó- ‘alive’ → vb. *gʷih₃ye/o- ‘to live’. One particularly salient subtype was conversion from e-grade thematic adjectives, a marginal type in the historical languages that must still have been well represented at this stage: adj. *léuk-o- ‘bright’ (Gk. λευκός ‘white’) → vb. *léuk-e/o- ‘be/make bright; shine’ (Ved. rócate ‘shines’, TB lyuśtär ‘will light up’). Still within Core PIE, this derivational pattern became obsolete and a number of original denominatives like *léuk-e/o- were reinterpreted as primary present stems. They made up the initial core of the class of simple thematic presents.
Acknowledgements

This article was written as part of the Project *Origin and evolution of the acute in Baltic and Slavic* (Nr. S-LIP-20–5), sponsored by the Research Council of Lithuania. A preliminary version of the main thesis was presented at the General Linguistics Colloquium, Georg-August University, Göttingen, in January 2020. I am grateful to the participants for discussion and specially to Götz Keydana for his warm reception at Göttingen. The final version of this article has greatly benefited from the comments of Benjamin Fortson, Jay Jasanoff, Marek Majer, and an anonymous reviewer on an earlier version. Remaining errors remain my own.

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