The Thematic Conjugation Revisited

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Calvert Watkins' brilliant book on the PIE verbal system was partly devoted to an analysis of the thematic conjugation in *-elo-. Although Professor Watkins was not the first scholar to recognize that the thematic 1 sg. present in *'-o-h ("'-o-0") implied a historical relationship between the thematic conjugation and the PIE perfect and middle, he was the first to appreciate the importance of this relationship for an understanding of the verbal system as a whole. In the nearly three decades since the "blue book" appeared, Watkins' theory of the thematic conjugation has stimulated extensive research into the "h2-series" of endings and its original role in the parent language. Strangely, however, the thematic conjugation itself has been relatively neglected for most of this period. Within the American Indo-European community, a vigorous defense of the "classical" thematic paradigm, contra Watkins, was mounted in the 1970's and early 1980's by the late Warren Cowgill (cf below). In the aftermath of the inconclusive debate that followed, the major issues in the field of IE verbal morphology shifted elsewhere; the thematic conjugation became, in effect, a topic "too hot to handle". One of the purposes of the present study is to show that the time has come for a reopening of the discussion. Thanks to recent progress in our understanding of the verbal system as a whole, the position of the thematic conjugation can be seen in a wholly new light.

Let us begin by reviewing the major differences between Watkins' theory and the standard post-Neogrammairan account:

1) Watkins sees the 1 sg. in *'-o-h ("*-o-{0}) as a revealing archaism, the relic of a period when the thematic "active" was characterized by endings akin to those of the perfect and middle. He concludes that the original inventory of thematic presents must have had middle-like meaning. Note that the term "thematic conjugation" is used in this study to denote the "root" or "simple" thematic conjugation—the full-grade, root-accented present class typified by *bharya- 'carry' and *yēgheko- 'convey'. We will not be concerned here with oxytone thematic stems (e.g., *yiddlo- 'catch sight of') or with extended thematic suffixes of the type *-elo-,*-skelo-etc., which have a very different history.

2) The "acute" long vowel of Germanic (cf Go. baira, OHG biru) and Baltic (cf Lith. -u < *-ao) rules out the possibility of a contracted ending of the type *elo-helo. We must rather assume an inner-IE apocope of *elo-helo to *'-o-h, comparable to the shortening of *'-o-hel to *'-o-h, in the thematic dual (cf *yelilo-h; 'two wolves' vs. *pōd-hel; 'two feet').
2) Since the PIE 3 sg. ending corresponding to 1 sg. *-h₂ί(e) was *-e or *-o and not *-i, Watkins reconstructs the preform of Ved. *bher-dr, Gk. *φηιέν, Gk. *φηιέπον, etc. as *bher-e rather than the usual *bher-ei. He posits a partial remodeling of *bher-e to *bher-ei in the post-IE period, with *-e added to *-e from the 3 sg. present of athematic verbs.

3) Going further, Watkins identifies the 3 sg. in *-e as the source of the thematic vowel itself. He theorizes that a form like *bher-e, which consisted historically of a root (*bher-) and a 3 sg. desinence (*-e), was reanalyzed synchronically as a sequence of root *bher- + suffix *-e + desinence zero. The perceived synchronous stem *bher-e was then extended from the 3 sg. to the rest of the paradigm, leading to the replacement of forms like athematic 1 sg. *bher-h₂(e) by thematic root *bher-eh₂(e) > *bher-o-h₂-

At the heart of Watkins' argument is 2)—the claim that the thematic 3 sg. was originally *bher-e, without the distinctive *-i of "normal" PIE 3 sg. actives. In support of this reconstruction Watkins cites evidence from five branches of the family: Greek (1-less 3 sg. *φηιαν) for expected *φηιέν/*φηιέπον; Celtic (OIr. 3 sg. conjunct *beir beside absolute berid); Anatolian (Hitt. 3 sg. wašši 'sins') (< *-ei or *-oi beside "thematic" 1 sg. waššašḥi, 2 sg. *-ati, etc.); Balto-Slavic (Lith. 3 p. *veda 'lead(s)' for expected *vedati; PSlav. 3 sg. *vede beside *vedeti, *vedeit), and Tocharian (Toch. A 3 sg. *dši, B *dšam 'leads', with apparent particles *-m added to 1-less *aš). But the interpretation of these facts was soon contested. In 1973 a radical new theory of the Insular Celtic absolute: conjunct distinction was proposed by Cowgill; central to this analysis was Cowgill's derivation of OIr. *beir from a precociously apocopated preform *beret < *berati rather than from a 1-less 3 sg. *ber. Cowgill likewise rejected the evidence for *-e in Anatolian, Balto-Slavic and Greek. The Hittite hi-conjugation type waššašḥi, *-ati, -i, he claimed, was not of thematic origin: not only were there no word equations linking such verbs to thematic presents elsewhere, but the Hittite stem-vowel *-a was in many cases demonstrably secondary. To account for the 1-less forms of Balto-Slavic Cowgill envisaged a Celtic-like early apocopate of *-et to *-et—an analysis independently favored for Baltic by the apparent apocopate of *-i in the Lithuanian *-es future (cf duòs 'will give' < *dœ-o-s-i(i)), and for Slavic by the appearance of shortened *vedq (< *onti) beside *vedqti, *vedqti in the 3 pl. Only in Greek, where he sought to defend a purely phonological change of *-ei to *-et, was Cowgill unable to offer a genuinely attractive alternative to Watkins' theory. In Tocharian, the evidence for a 3 sg. in *-e disappeared with the discovery, due independently to Klingenschmitt and the present author, that A *dši could be regularly traced to an ordinary thematic *aš.17

The effect of the *bher-e vs. *bher-ei debate, for most students of the problem, was an uneasy settlement in favor of the traditional *bher-ei. Yet even with the substitution of *bher-ei for *bher-e as the late PIE preform, Watkins' argument retains its basic cogency. The cooccurrence of *-et (3 sg.) and *-oh₂ (1 sg.) in a single paradigm is an anomaly that needs to be explained. In principle, there are two ways that the paradigmatic association of these endings could have come about: either *-oh₂ replaced an earlier "regular" *-omi, or *-et replaced a dentalless ending such as *-e (i.e., thematic vowel *-e + desinence *-e) or Watkins' *-e. Other things being equal, there are strong reasons to favor a scenario of the latter kind; the synchronically isolated *-oh₂, unlike *-eti, bears all the typological marks of an archaism. Despite the apparently scenario of *-ati as the late PIE ending, therefore, it would be premature to reject Watkins' model completely. A more prudent course would be to consider the case for modifying Watkins' chronology. As we shall see, there is much to be gained, and little to be lost, by assuming that the original 3 sg. corresponding to 1 sg. *bheroh₂ was indeed *bher-e, but that the replacement of *bher-e by *bher-ei took place in the parent language itself.

Relieved of its dependence on inconclusive dentalless forms like Gk. *φηιαν, OIr. *beir and Hitt. *wašši, Watkins' hypothesis of an originally athematic (pre-) PIE *bher-e receives support from a number of other facts. It is a striking detail, for example, that the archaic PIE 3 sg. middle ("stative") corresponding to the active *bher-ei (i.e., *bherel-o-) but *błer (cf OIr. 3 sg. *bera 'is carried'), 'śagōr 'is spent', etc.), with the dentalless middle desinence *-or added directly to the root *bher-*błer is thus an unambiguously athematic form, the survival of which in late PIE must have been assisted by the surface homophony of the middle ending *-o with the thematic

6 Watkins' account of this ending differs in detail (cf note 5). The o-timbre of the thematic vowel, which Watkins attributes to the laryngeal, is probably better explained by the PIE rule that changed *-e to *-o in post-tonic closed syllables.

7 Watkins 1923.

8 op. cit., 164-70.

9 op. cit., 77-82.

10 op. cit., 212-14.

11 op. cit., 218-21.

12 op. cit., 204-5.

13 Published as Cowgill 1973.

14 So already in a talk before the Harvard Linguistic Circle in March, 1972. Cowgill's consolidated views on the thematic endings were belatedly published as Cowgill 1985.
vowel.\textsuperscript{19} The importance of such forms for a proper understanding of the thematic conjugation will emerge directly.

Equally significant is the fact that Watkins' thematic paradigm *bhēr-h-e, *thē-e, *-ē, etc., widely dismissed as speculative and morphologically isolated when it was first proposed, can now be identified as one subtype of a much larger class of thematic presents. As I have argued elsewhere,\textsuperscript{20} the core of the Hittite hi-conjugation consists precisely of functionally active presents, all historically thematic, which make their finite forms with the inherited "perfect" endings (1 sg. -thē < *-thai < *-hē + i, 3 sg. -i < *-ēi < *-ē + i, etc.). According to the "hē-conjugation theory", the original stimulus for which came from the Watkins-Cowgill debate over the Hittite wāzīta-type, such verbs continue neither perfects nor middles in the strict sense, but go both directly to a hitherto unrecognized PIE category. The parent language evidently once had two sets of personal endings in the indicative—an unmarked "active" set (1 sg. *-m(i), 2 sg. *-s(i), 3 sg. *-t(i), 3 pl. *-(e)nt(i)), and a marked or "protomiddle" set (1 sg. *-hē, 2 sg. *-thē, 3 sg. *-ē, 3 pl. *-(e)ntx).\textsuperscript{21} The protomiddle endings expressed a range of functions (stative, processual, passive, self-benefactive, etc.) broadly similar to the functions of the classical perfect and middle. As the parent language evolved, however, the protomiddle endings divided into two potentially contrasting sets—the formally renamed "true" middle endings, characterized (inter alia) by o-umlaut in the third person and the hē e nunc particle *r (1 sg. *-hēr(r), 2 sg. *-thē(r), 3 sg. *-or(r), 3 pl. *-or(r)); and the misleadingly named "perfect" endings, which continued the old protomiddle set unchanged. In late PIE the new middle endings were assigned to forms which had a strong "synchronic" middle ("internal") component; other protomiddles preserved their inherited inflection intact. Thus, by the time of the breakup of the parent language, the perfect endings were associated with two kinds of forms: a) true perfects, easily recognized by their distinctive meaning and stem formation; and b) "hē-conjugation" actives—etymological protomiddles which for one reason or another failed to be interpreted as "true" middles at the time of the protomiddle/middle split. Representative of type b) were presents such as *mōlti-/*mēlti- "grind" (1 sg. *mōlti-h-e, 3 sg. *mēlti-h-e; originally perhaps processual 'grind away at') and *dhēh-i-/*dhih-i- "suck" (1 sg. *dhēh-i-h-e, 3 sg. *dhih-i-h-e). Such forms, which might be termed "neoactives",\textsuperscript{22} yielded hi-conjugation verbs in Hittite (*mallahhī, *-āti, 3 sg. mall(a)i, etc.), but were usually thematized in the other IE languages (cf Lat. mōlō, OIr. melid, Go. malan, etc.; Ved. dhāyati, -ē 'suck(1e), Arm. diēm, OHG ēden, etc.).

Seen in this perspective, Watkins' pre-PIE *bhēr-h-e, *thē-e, *-ē is not isolated, but can be interpreted as a hē-conjugation present of the same basic type as *mōlti-/*mēlti- and *dhēh-i-/*dhih-i-. This, of course, is not equivalent to a proof that such a present actually existed. But structural considerations make Watkins' hypothesis very attractive. The root *bhēr- seems to have had not one but two presents in the parent language: alongside the familiar thematic stem there also existed an active ("mi-conjugation") root present, reflexes of which appear in Latin (3 sg. fert, etc.), Greek (2 pl. nmpv. φέρει) and Indo-Iranian (Ved. bhrát). There are strong indications that this root present was of the acrostic or "Narten" type, with *-ē < *-ē ahaut.\textsuperscript{23} A Narten present would help explain the lengthened grade of nominal derivatives like Slav. bérmg (SC brême) 'burden' and OHG bēra 'bier' (< *bhēr-ahau), the acrostic vocalization pattern of Mīr. biri 'sow' (< *bhēr-pit), and—most important of all—the preserved *-ē of the irregular Tocharian A imperfect pārat (< *bhēr-ahau).\textsuperscript{24}

Setting up a PIE *bhēr-ti, however, would have far-reaching implications. Narten presents were not confined to the active in the parent language; the root *stēu- 'proclaim', e.g., had both a lengthened-grade active *stēu-ti (cf Ved. stāuti 'praises') and a full-grade middle *stēu-or (cf Ved. stōvē 'is praised', Gk στηεων 'boasts'). Under the hē-conjugation theory, the middle *stēu-or presupposes an earlier protomiddle 3 sg. *stēu-ē (1 sg. *stēu-h-e, 2 sg. *stēu-t-e). Precisely such an array of forms can be assumed for *bhēr-:

\begin{itemize}
  \item Narten active
  \item Narten middle
  \item pre-PIE protomiddle
  \item *stēu-ē < *stēu-e
  \item *bhēr-ē < *bhēr-e
\end{itemize}

A pre-PIE paradigm *bhēr-h-e, *-ē is thus not merely a theoretical possibility; it is actually predicted by the known morphological peculiarities of the root *bhēr-.

A revised Watkins-based account of the thematic present *bhēr-ē, then, might run as follows. At the earliest recoverable stage of the parent language, *bhēr- made a Narten present, with an active 3 sg. *bhēr-ē and a protomiddle 3 sg. *bhēr-ē. The active *bhēr-ē meant simply 'carries'; the protomiddle *bhēr-ē had a wider range of meanings, including a) 'is carried' (passive-processual), b) 'carries in his/her own interest' (self-benefactive), and c) 'carries along, carries onward' (progressive-processual). With the subsequent split of the protomiddle into the middle proper and the hē-conjugation, sense a)

\textsuperscript{19} The derivation of berar from *bhēr-or is unconvincingly rejected by Cowgill (1983: 101-3). As seen by Watkins (213), the Gothic passive in 3 sg. -ada (type bairada is carried) presupposes a dactylless 3 sg. in *-oi (cf Ved. (prā) sobe 'shines forth', RV I 120. 5). Note the contrast with the derived thematic types in *-eol-, *-skelo-, *-e(i)lo-, etc., which had only *-eoi( ), never *-oi( ), in the 3 sg. mid.

\textsuperscript{20} Most recently in Jasanoff 1994: a fuller treatment is forthcoming.

\textsuperscript{21} On the relationship among the r-endings of the 3 pl. see Jasanoff (to appear). The endings of the 1-2 pl. and 1-3 dual do not differ from those of the active as well, but the details are less clear. Cf note 38.

\textsuperscript{22} I have elsewhere described the Hittite hi-conjugation as a "middle déclasse".

\textsuperscript{23} As originally described by J. Narten (1968).

\textsuperscript{24} For the type of Krause-Thomas 1960:221; the ē-vocalism was first correctly identified, though attributed to an aorist, by Adams (1988:87-8). The Toch. B causative preriteric type ĉalā 'lifted' rest on an elaboration of the same category.
and b) were assigned to the emergent middle *bhér-or. In sense c), however, *bhér-e survived as a hē-conjugation active, opposed both to the new middle *bhér-and to the differently nuanced active *bhēr-ti. The present paradigm *bhēr-hē, *bhēr-e, *bhēr-ti 'carry along' would initially have been indistinguishable from other hē-conjugation presents at least as far as its endings were concerned. But at some point prior to the breakup of the parent language, the hē-conjugation inflection of *bhēr-was thematized: the 3 sg. in *-ē was remade to *-ēti, prompting the spread of *-ētio the other persons and numbers. Why this process affected only roots like *bhēr—presents of the other hē-conjugation types were not thematized until the dialectal period—is not entirely clear. Perhaps the addition of *-ti to 3 sg. *bhēre-was triggered by the *-ti of the closely related, though not quite synonymous, Narten present *bhēriti.27

The attractiveness of this explanation depends on the fact that Watkins’ key assumption—the existence of an athematic present *bhēr-hē, *bhēr-e, *bhēr-ti—follows almost mechanically from the decision to reconstruct an active paradigm *bhēr-mi, *bhēr-si, *bhēr-ti. What remains to be seen is whether the history of this verb can be generalized: was the case of the root *bhēr-more or less isolated, or were Narten protomiddles the source of the “root” thematic conjugation as a whole?

A certain number of roots with inherited thematic presents seem in fact to have patterned like *bhēr-. One such is *leg- ‘gather’, the source of Gk. λέγει ‘pick up, count, say’, Lat. legō ‘gather, read’, and Alb. mb-let ‘gather’—all thematic—well as Toch. H lāk ‘see’. No Narten forms are directly attested from this root. Yet a Narten present seems as good as assured by the lengthened-grade prefers Late (perf.) légi, Alb. (aor.) mb-lodha, and Toch. A (impt.) lāk ≤ (*légi-a); cf pārat ≤ *bhēr-a) – a remarkable three-way word equation that virtually requires the assumption of a PIE imperfect *lég-m.

The creation of the new 3 sg. mid. *bhēre-tor, with the concomitant restriction of the older form *bhēr-or to the functions characterized as “stative” by Oettinger (1976), was a later development (cf Jasanoff 1994:151-2).

26 Logically, of course, thematization could have preceded the addition of *-ti, but the order here seems the more natural one.

27 The problem appears to be bound up with one of the major uncertainties in the hē-conjugation theory—the status of the imperfect. If the PIE 3 sg. forms *bhēra and *mōth-e meant ‘carries (along)’ and ‘grinds (away)’, respectively, how did PIE speakers express the corresponding preterital meanings ‘carried (along)’ and ‘ground (away)’? There is some reason to believe that the “secondary” ending employed for this purpose was *-et, i.e., *-e + facultative *-i (a 3 sg. imperfect in *-ei may already have existed in the mi-conjugation jel- and skel-precents). Thus established in the hē-conjugation, the new ending would have provided an incentive for all hē-verbs to be thematized. The bher-type, however, would have been especially susceptible to such pressure, since the parallel Narten present would have suggested a proportion *bhēr-ti: *bhēr-ti: *bhēre-ti: X, where X could be solved as *bhēre-ti.

28 The exclusion of the lengthened-grade root-form *lég- from the present tense proper in Latin, Albanian and Tocharian is not necessarily accidental; it may well be that following the establishment of the pair *lég-ti ‘gathers’; *lég-e-ti ‘gathers away (vel sim.)’, the stem-form *lég-was restricted to the imperfect within PIE itself. Another well-known “thematic” root with an old Narten present is *hēg- ‘drive’ (cf Ved. ájati, Gk. ἔγαρ, Lat. agō, etc.), which, like *bhēr-, was confined to the present system in the parent language. Here the only indication of lengthened grade—but a powerful one—is Lat. ēgī, a long-vowel perfect of the same type as légī. The traditional view takes égī to be the replacement of an older *AGI, itself supposedly the reflex of a reduplicated perfect *hēg-hēg-. But no such perfect ever existed, and if it had, it is hard to see why the pattern agō: *ágī: Aactus would have been remade to conform (imperfectly) to the pattern of the historically obscure and isolated frango: frēgi: frāctus ‘break’. A better solution, if légī is in fact an archaisin, would be to take légī as the reflex of a genuine lengthened-grade *hēg-, with *-ē-preserved by Eichner’s Law.31

*bhēr-, *lég- and *hēg-, as we shall see, are not the only PIE roots which formed both a thematic present and a Narten present. Nevertheless, the pattern of these verbs is not typical. For most thematic presents the salient derivational link is not with a Narten present, but with a sigmatic aorist. The pattern is familiar: cf *yēg-h-elo-: *yēg-h-s- ‘convey’ (Ved. vāhati: āvāt, Lat. uēhā: uēkī, etc.). *pēk-te-lo : *pēk-te-s- ‘cook’ (Ved. pācāti: suba, pākat, Lat. coquē: coqui, etc.), *hēg-h elo-: *hēg-h-s- ‘lead’ (Olfr. fēdī: subj. fess, OCS vedi: vēsī, *hēg-h elo-: *hēg-h-s- ‘bump’ (Ved. dēhātī [= Lith. dėgh]: dēghāk [= Toch. B tsēskas]), and others. Traditionally, s-aorists like *yēg-h-s- have been regarded as formally “characterized”, the *-s-serving to reverse the aspect of the root *yēg- and the uncharacterized present *yēg-helo-.30 This view of *yēg-helo- is consistent, of course, with our interpretation of *bherelo-as kind of modified root present. But several facts speak against an immediate historical identification of the bhereti- and yēgheiti-types. Unlike *bhereti and its congeners, yēgheiti-type present data not typically co-occur with “normal” (i.e., mi-conjugation) root
The thematic s-aorist of Indo-Iranian, Greek, and the other "inner" IE languages must therefore be an innovation that postdates the separation of Anatolian and Tocharian from the rest of the family. A trace of the originally restricted role of thematic s-aorists, no longer obvious reason, is substi-tuted for the root aorist. Thus, the thematic case for treating thematic presents of the aorist type was weakened even more.

The association of the Hittite 3 sg. pret. -*s- with the hi-conjugation makes it natural to seek an explanation for these facts in the context of the hi-conjugation theory. Pre-PIE, as we know for independent reasons, original had protomiddle aorists as well as presents. These were subject to the usual twofold

The characteristic innovation of the PIE s-aorist was to replace the active/transitive 3 sg. *pēk*-e by the intrusive thematic form *pēk*-s-t. The reasons for this development are obscure. It may be that the minimal phonetic difference between the endings *-e* and *-o* was inadequate to express the treatment within the parent language: some were renewed as "true" middles, while others were retained as h-e-conjugation nonactives. Most important for our present purposes, however, are the protomiddle aorists that underwent both treatments, giving rise to a middle paradigm, typically intransitive, and an active paradigm, typically transitive. The aorist of the root *pēk*- was of this type, with a protomiddle that can be set up as follows:

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<td>2 <em>pēk</em>-th-e</td>
<td><em>pēk</em>-i<em>e</em></td>
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<tr>
<td>3 <em>pēk</em>-o</td>
<td><em>pēk</em>-ro</td>
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These forms originally meant 'got cooked, got ripe' and perhaps also 'cooked for oneself'; there may have once been a contrasting active *pēk*-m, *-s, *-t, etc. 'cooked' as well, although no trace of such an aorist has survived in the daughter languages. At the time of the protomiddle/middle split, the inherited protomiddle paradigm divided into two daughter paradigms. The old protomiddle forms were interpreted as aorists ('cooked'), while a "true" middle ('became cooked, cooked for oneself') was created by substituting the renewed middle endings for their protomiddle counterparts. In the plural this was straightforward: the new middle forms introduced the endings 1 pl. *medh₁₂, 2 pl. *-dh(w)u[e (vel sim.) and 3 pl. *ro in place of *-me, *-i(e), *-rs. So too in the 3 sg.: *pēk*-e qua intransitive was replaced by *pēk*-o, with the productive middle ending *-o. In the 1 sg. and 2 sg., however, where the h-e-conjugation and middle endings were identical, the active-middle contrast had to be implemented in a different way. The paradigm of the true middle in the emerging late PIE verbal system generally lacked ablaut; a regular 1 sg. of the type *yēs-h₁-e(r) ('I wear/wore') had the same vocalism as the corresponding 1 pl. *yēs-medh₁₂(r). On the model of such forms, a new 1 sg. mid. *pēk*-h₂-e and 2 sg. mid. *pēk*-th-e were created, taking their vocalism from the plural middle forms *pēk*-medh₂, *-dh(w)u[e, *-ro. The result was an intransitive paradigm

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The survival of o-grade in the 3 sg. (*pēk*-o) was a remarkable but not unparalleled archaisms, compare the "passive" aorist of Indo-Iranian (type Ved. 3 sg. āpāḍī 'went', ājōśi 'enjoyed', pl. āpādr, ājūsān)...

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functionally important contrast between *poik-"cooked" and *poik'-'goed cooked"; this, however, would not explain why the specific form *poik- would be opposed, e.g., to **poik- (with facultative *-e) or a new 3 sg. middle **poik-—was chosen as the repair mechanism. *poik-s-t must originally have been the imperfect of a "Narten" s-present *pès-s-t, a morphological type known from the reconstructible present *ganes-s-ti 'recognizes' (= Hitt. ganeis, Toch. A kias, etc.).

The introduction of *-s-t into the aorist system was perhaps mediated by the root *prek-'ask", which formed a h-s-conjugation aorist *prék/-prék- in the parent language (cf Toch. B prekwa, etc.) and may also have made a sigmatic present.40 All that we know for sure, however, is that forms of the type *pök'-e were eventually replaced by forms of the type *pök'-s-t. The indication of the nascent PIE s-aorist, which was still largely non-sigmatic, can be reconstructed as follows:

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The treatment of these forms in the "classical" IE languages is well-known. Diatinctive IE generalized *pök'-s-, the stem-form proper to the 3 sg. active, across the entire thematic paradigm, simultaneously extending the analogical weak stem *pök'-s- through the middle.41 Hittite and Tocharian, on the other hand, maintained the restriction of *-s-t to the 3 sg. active.42 The one clearly inherited case of an s-aorist in Hittite is the hi-conjugation preterite nēhunu, naita, nais, etc. 'turned, directed', which can be exactly equated with Ved. ānasāi ("led")43. In Tocharian there was an important innovation: both the active and middle paradigms split into two—a preterite indicative, marked by analogical generalization of the vocalism of the 3 sg., and a subjunctive, marked by analogical suppression of the vocalism of the 3 sg. Thus, an inherited "s-aorist" root like nāk-(< *nek-) 'destroy/perish'44 eventually gave rise to four aorist-based paradigms: 1) a transitive active preterite, based on the stem-form *nek-(s) (cf A 3 sg. act. hakās, pl. hakār); 2) a transitive active subjunctive, based on the stem-form *nok'-(s) (cf A 2 sg. nakāt, B 1 sg. neku, inf. nakiti); 3) an intransitive middle preterite, based on the stem-form *nok (cf A 3 sg. mid. nakāt, pl.

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40 The relationship of desiderative *skleio-presents of the type *ptk'(kšleio- 'ask' to older thematic s-presents is discussed in Jasanoff 1988b:234-7. The potential importance of the root *prek- for the early history of the s-aorist was first pointed out to me by Patrick Hollifield.

41 PIE already had the stem-form *pök'-s- in the aorist subjunctive: cf. below.

42 With an important partial exception for the middle in Tocharian; cf note 35.

43 The Hittite spelling <na(-i)-š> shows that the immediate source of the 3 sg. nais was *nēšišt-s, with analogical o-grade from the other strong forms.

44 The root nāk, parallel to pāk-, is chosen because it preserves the distinction between the reflexes of lengthened-grade *nek (> A hak-) and o-grade *nok. (> A nak-).

45 This explanation of the class III subjunctive type nakāt/nakēt, pakātī/pakētār, etc. differs from the standard view, which takes these forms directly from thematic presents (so, e.g., Jasanoff 1978:36-7 and elsewhere). The "thematic" interpretation, however, has serious problems. Class III subjunctives are exclusively middle and intransitive, while the Indo-Iranian thematic presents to which they are allegedly cognate are mostly transitive and active. Thus, there are no Vedic middles *pācayt 'gets cooked', *dhatū "burns (intr.)", or *janātu 'is born' comparable to Toch. B pakātā, iskētā, kētētā. The intransitive sense is normally expressed in Vedic by a elo-present (pācayāt, jāyāt); note also nāyati 'perishes', from a root that appears not to have formed a thematic present at all. That such intransitive elo-presents once also existed in Tocharian is suggested by B kētātār 'comes about' (< *gējhi-elo-; otherwise, Blacksei 1955:232-3), and by the Toch. A intransitive presents in -nēś (pakētātār, iskētētār, nāktētār, etc.) which seem to have replaced elo-presents (J. Hollifield, p.c.). Only in two cases (B nāṃ, subj. nēśatēt 'bend (intr.)'; Visām de 'tide'; AB kētātār, subj. A kētātār, B kētātār 'be extinguished'; Ved. nāśamāna- 'exhausted') can a Tocharian class III subjunctive be unproblematically compared with an otherwise attested thematic middle present. A further disadvantage of the standard view is its lack of symmetry: why, if pkētātār, iskētētār, etc. simply continue thematic middles, do the corresponding active subjunctives not go back to the better attested thematic actives of the same roots? The solutions preferred here, which derive both the active and middle subjunctive from a single source, avoids this difficulty.

46 As I have tried to show elsewhere (Jasanoff 1991:111-6), the specific root aorist forms that substitue for the missing optative of the s-aorist point to a distinctively aoristeractive type with full grade of the root and invariant zero grade of the optative suffix. Note especially YAv. 3 sg. vaini < *yēn-n-ih, (vūn. 'strive after'), Ved. 2 sg. jē < *gējih-ih (ji. 'conquer'), and Ved. 1 sg. (preative) yēgam.
was apparently already present in the parent language. This is shown not only by the situation in Indo-Iranian, where subjunctives of the type 3 sg. vákt, pakšat and s-imperatives of the type 2 sg. váksi (< 2 sg. subj. *séši) are actually more common than s-aorist indicatives; but also by the distribution of stem-forms in Tocharian, where the semi-productive presents in *-selo- (type B 3 sg. naktan ‘destroys’, pakšan ‘cooks’, etc.) are inextricably linked to s-preterites; and in Hittite, where the curious middle imperative nēḫur (MH) is evidently a medialized of the si-imperative *nēši (< *nētis - subj. *nēthiši), comparable to Ved. váṃśva, ráśva (‘rá: give’), etc. beside váṃsi (subj. váṃpae), rási (subj. ráda).- It is a possibility to conclude that at some time within the history of the parent language, subjunctives of the type *pek’selo- were imported into the paradigm of aorists like *pek’s-pek’s-., where they came to compete with ‘native’ subjunctives of the type *pek’selo-.

The new s-forms were probably taken from the same declarative present category that furnished the 3 sg. aorist indicative *pek’s-s. In principle, the intrusive stem *pek’s-selo- may simply have been the historically regular subjunctive of the Narten s-present *pek’s-s, or it may have been a h, e-conjugation indicative, standing in the same relation to 3 sg. act. *pek’s-s-il as thematic *bher-oelo- to 3 sg. act. *bher-r-i. Neither possibility, strictly speaking, excludes the other, since the ultimate origin of the PIE subjunctive remains unknown.

The competition between the old aorist subjunctive *pek’selo- and the intrusive subjunctive *pek’selo-., which presumably differed slightly in meaning (see below), led to different results in the emerging IE languages. In Tocharian, the tension between the stems *pek’selo- and *pek’selo- resolved by converting the latter into a general-purpose transitive present (B pakšon), while the s-less stem *pek’selo- remained a subjunctive and eventually disappeared. 46 In the “inner” IE languages, on the other hand, the spread of *s- through the indicative reinforced the synchronic association of the s-magmatic stem *pek’selo- with the aorist paradigm. In these languages it was *pek’selo- that prevailed in the aorist subjunctive, and *pek’selo- that was specialized in the role of a present indicative. This was the origin of the familiar *pek’selo- of the handbooks, historically a root aorist subjunctive, but synchronically a thematic present of the *pek’heto-type. We can extend this explanation to the *pek’heto-class as a whole: all thematic stems of the type *pek’elo-, *pek’helo-, *dielyelo-, *yelielo-, etc. I suggest, were originally the subjunctives of their own aorists, forced out of the aorist system under pressure from the more recent s-aorist subjunctive in *-selo-49

bhēreti- and *yek’heto-type thematic presents thus appear to belong to different chronological strata, bhēreti- (‘type I’) presents were created within the parent language from earlier h, e-conjugation root presents; *yek’heto- (‘type II’) presents were created from earlier h, e-conjugation root aorists at a date following the separation of Tocharian, and a fortiori of Anatolian, from the rest of the family. To test this hypothesis we can make a prediction: if the above analysis is correct, it should be possible to find reflexes of thematic presents of type I, but not of type II, in Anatolian and Tocharian. In Anatolian, where the number of verbs with thematic cognates of either type I or type II is too small to be probabilistic, the evidence is suggestive rather than conclusive. The clearest case of a “thematic” root in Hittite is nādi ‘turn, direct’, which corresponds etymologically to the Vedic type II thematic present nadvati ‘leads’, aor. nāšati. Significantly, the Hittite verb is nor a thematic stem *nēya- (< *nēthelo-) with 3 sg. *nēzzi; the attested present nēbhi, nauttī, nāi, etc. is a back-formation from the preterite nēbhe, nauta, nāi, which in turn rests on the inherited h, e-conjugation aorist *nēili-hse, *nēili-hse, *nēili-s (replacing *nēili-s, for pre-PIE *nēili-e). Genuine examples of root thematic presents in Anatolian are notoriously hard to find. The best example is probably the Hieroglyphic Luvian mi-verb tama- ‘build’ (B 3 sg. AEDIFICARE +MINS-i = tamar), which can be compared with Gk. ἔξω ‘build’ and (probably) Gmc. *teman ‘fitting’. 51 If the stem *dem(h,)-elo- is really old, the lengthened grade of the Tocharian A present ēmariadr ‘grow’ (< *dēm-) argues strongly for its assignment to type I.

The evidence from Tocharian is both more abundant and more decisive. We have already met AB ak- ‘lead’, which makes a type I thematic present of Krause and Thomas’ simple thematic class (class II) and forms an exact word equation with Lat. agō, Gk. ἀγα, Ved. ājāti, etc. Here too, unsurprisingly, belongs the present of AB pāy- ‘carry’ (B 3 sg. pāram, ptp. pṛēca), the Tocharian counterpart of Gk. ἔξω, Ved. bhārati, etc. Remarkably, however

46 The PIE subjunctive was normally lost without a trace in Tocharian. The exceptional treatment of the s-aorist subjunctive as a present indicative probably points to a genuine semantic peculiarity of the s-aorist subjunctive in the parent language. Thus, e.g., late PIE forms of the type 3 sg. *pek’sesi(i) may have had both the standard subjunctive reading ‘may cook’ and an indicative reading ‘wishes to cook’ or ‘sets about cooking’, whether this latter sense was original or secondary is immaterial for our present purpose. The fact that the s-preterites that developed from subjunctives in Tocharian are overwhelmingly transitive and/or ‘causative’ suggests that subjunctive stems of the type *pek’selo-, like the 3 sg. indicative *pek’sit itself, were at first exclusively associated with the active, typically transitive h, e-conjugation paradigm. It is notable that even in Vedic Sanskrit, the s-aorist subjunctive is far more common in the active than the middle.

49 The later development of thematic presents from aorist subjunctives is well known from the history of the individual IE branches—notably Germanic, where many strong presents originated in this way (cf. *bitan ‘bite’ = Ved. root aor. subj. bhdati, *beudan ‘order’ = Ved. root aor. subj. bhēdati, etc.).

50 Although Indo-Iranian is the only branch of the family to attest the thematic present *nēthelo-, the parallelism with the semantically related stems *yek’helo- and *yelielo-makes the reconstruction virtually certain.

51 On HL tama/lemari see Morpurgo Davies 1979:128. I am grateful to Profs. Morpurgo Davies and Melchert for helpful discussion of this form.
— and this fact seems never to have been noticed before—PIE *h₂e₂θ- and *bher- are the only ancient "thematic" roots that actually form primary thematic presents in Tocharian. Krause and Thomas list about thirty class II presents,52 many of which have no serviceable etymology. Of those that can be analyzed, virtually all are petrified s-presents (e.g., *A klyor, B klyaur- 'bear', AB kás- 'extinguish'), petrified st-presents (e.g., B hā́sk- 'wish'; B trā́sk- 'chew'), characterized presents of other kinds (e.g., A šr-, B šau- 'live' [< *g₂lθʰ, -yo- ]; A malyw-, B mely- 'crush' [< *málθ-y-(i)le-y-]), or thematized root formations (e.g., B uak- 'touch' [3 sg. cesān]; B uak- 'know').53 Tocharian is perfectly well-supplied with roots and with type II thematic cognates elsewhere, notably pā́k- (Ved. pākāt); tā́śk- (Ved. dā́hati); kā́ś- (Ved. jāśamānā); nam- 'bend, incline' (Ved. nāmāti, -te); and kā́ṁ- 'come about' (Ved. jānti 'begets', Lat. genu). Most of these, however, pattern in the way described above for pā́k-, with aorist-based preterites and subjunctives, transitive s-presents, and (in Tocharian A) intransitive presents in -nā́y-, replacing older *-jeilo- (pā́kñāstār, tā́śkñāstār).54 None has a thematic present; indeed, there are no thematic presents of type II in Tocharian at all.

We thus find that the well-known rarity of inherited thematic presents in Anatolian is matched by an equally impressive, though hitherto unrecognized, dearth of old thematic presents in Tocharian. This agreement between the two branches has a simple explanation. Most of the thematic stems traditionally assigned to the parent language are in fact type II thematic presents which arose from h₂e₂-conjugation aorist subjunctives. The conversion of these forms into present indicative was an innovation confined to the "inner" IE languages: the familiar PIE *tyēghetī, *pēkēti, etc. were still subjunctives at the time of the separation of Anatolian and Tocharian from the rest of the family. This is why the aorist of the root *nēlθ-, but not the present *nēlθelo-, is found in Hittite, and why the roots *pek₂-, *dhug₂h₂, *g₂es- etc., though blessed with a wealth of stems in Tocharian, show no sign of the thematic presents for which they are best known in the linguistic literature. The only genuinely Indo-European thematic presents were those of type I, the *bherėti-type. For this class, a modified version of Watkins' theory remains the best explanation we have.

53 The class II present supposedly represented by B 3 sg. keṣān and A 2 sg. kā́ṣt is in fact an s-present (< *g₂es-;o-; class VIII), the existence of which is predicted by the corresponding s-preterite and class III subjunctive. The vocalism of the B form is taken from the active preterite and subjunctive, exactly as in prekṣaṁ 'asks'.
54 The closest approach to another genuine root thematic present in class II is B *lukṣā́n 'lies', recalling Gr. ξεγερεῖν and Gr. ligēin 'id'. But the Greek form, if real, is merely a back-formation from the aorist (lḗγερο), and perfect (prp. lḗgά) while Gr. ligēin is a replacement of *ligēin (cf OE līgān), matching Olk. ligāid. It is doubtful whether the root *legh- made a present at all in the protolanguage.
55 Cf note 45. Tocharian B has extended the s-present inflection to the middle, replacing expected *pā́kñāstār, *tā́śkñāstār by pakstār, tsēkstār.

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How to be a Dragon in Indo-European: Hittite illuyankaš and its Linguistic and Cultural Congeners in Latin, Greek, and Germanic

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Illuyankaš—a snake, the Hittites’ fabled adversary, the Indo-European dragon par excellence.* The very word stirs the breast of the Anatolianist much as it must once have stirred the Anatolian’s, and no one bears more responsibility for the illuyankaš-monster’s current success than Calvert Watkins, who in a series of articles (1987a, 1987b, and 1992a) and now a book, How to Kill a Dragon: Aspects of Indo-European Poetics (1995), has written breathtaking accounts of the inherited poetic formulas that have as their subject the fights between heroes and dragons. Nevertheless, although we know a great deal about how to kill this beast, we remain very much in the dark about its essential nature while alive. My contention in this paper is that the word for the Hittite monster is of good Indo-European provenance, with cognates in Latin, Greek, and Germanic, and that its etymology also sheds new light on certain features of the mythic battles against serpentine creatures fought by such heros as Bellerophon and Beowulf.

The most notable phrase that Watkins has reconstructed is PIE *(ē)gʰhento [ŋ] (he) slew the serpent’, a formula continued most faithfully in Indo-Iranian, with Skt. dhān̄h dhām (‘indra) slew the serpent’ and Av. janat aśīm (‘Oraeraona/Kornsaspa) slew the serpent’, but recoverable also in Greek, Germanic, and Hittite. In Greek too both the noun and the verb are part of the archaic vocabulary of dragon-slaying, and while the verbal form ἐκτάσεις is not morphologically identical to Skt. dhān and Av. janat, the object ὄσω is exactly cognate with Skt. dhīm and Av. aśim (< PIE *h₂ogʰhi-m);¹ in Germanic we find only the verbal root *gʰhen- (as in Eng. bane) since words like ON ormr (Eng. worm) supplant the noun *h₂ogʰhi.² As for Hittite, the verb kuentā in MÖ illuyankat kuentā (‘the Storm God, Tarhuntas) slew the illuyankaš² makes an exact equation with the Sanskrit and Avestan imperfects (kuentā = Skt. (d)han = Av. jan[āt] <

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¹ Compare P. 10.46 ἐπηθείν τινα χελώνην (‘Persius) slew the Gorgon’ (who is called ὄσω-669* ‘serpent-like’ in O. 13.63). The collocation ἐκτάσεις ὄσω happens to be unattested, but note χελώνη...-όσω (P. 4.249) (‘Jason) killed the serpent’.

² Compare an Old Norse kenning for Thor, orms ein-bani (Hym. 23) ‘the serpent’s single-bane’.