The Position of the hi-Conjugation

§ 1 Although the Hittite verbal system presents many problems for IE comparative grammar, no morphological category of Hittite has proved so resistant to historical analysis as the hi-conjugation. The synchronic position of this formation is well-known. All non-deponent verbs in Hittite belong descriptively to one of two form-classes: the "mi-conjugation", characterized by the endings *mi-, *ti, *zi in the present singular active, and the "bi-conjugation", characterized by the endings *bi (of *bi-, *pi-, *phi). The distinction between the two types is maintained in the pronominal singular, where the corresponding endings are *-suns, *-s (I), *-ti (mi-con.) and *-hun, *-ala (bi-con.); it is effaced, however, in the plural, where both mi- and bi-verbs show the endings *-veni, *-tani, *-ansi in the present and *-ven, *-ten, *-ser in the preterite.

From a functional point of view the two conjugations cannot be meaningfully distinguished: hi-verbs, like mi-verbs, may be intransitive and even transitive, and eventive or stative (cf. wakši 'bites' beside kvenzzi 'kills', arx 'arrives' beside mersi 'disappears', lakši 'knows' beside eši 'is'). Both groups include, beside athematic root presents, presents equipped with a variety of consonantal and vocalic suffixes (cf. iarrai 'transgresses', daxi 'puts', lakši 'puts', išman 'proceeds', hoppiyazzi 'purifies', aamunyazi 'performs', aškšizu 'takes' (iter.), hatriči 'writes', armušzi 'brings', maršči 'becomes false').

The identity of the mi-series of endings with the endings of the IE athematic active, and the overall comparability of the mi-conjugation with the IE active present, have been recognized since the very beginning of Hittite studies. The general affinities of the hi-endings are known also: Hitt. *bi-, *ti, *zi strikingly both recall the IE personal endings *-h₁, *-h₂, *-e and the oldest forms of the middle endings, which, in the 1–3 sg. and 3 pl. differed only in vocalism from those of the perfect (cf. J. Kuryłowicz, BSL 33, 1–4 (1932); Chr. S. Stang, NT I 6, 29ff. (1932)). Serious obstacles, however, stand in the way of a direct identification of the present of the hi-conjugation with either the IE perfect or present middle. The perfect denoted a state in the parent language (cf. Ved. sēkta, Gk. (*θετα, Go. waipi 'knows'; Gk. ἔμαχε 'intends', Lat. meministi 'remembers', Go. man 'thinks'), but stative hi-verbs are neither especially numerous nor associated with roots which can be shown to have formed perfects in Indo-European (cf. below). A straightforward derivation of the hi-conjugation from the middle is not easily reconciled with the fact that the middle remains a living category in Hittite, with endings (*-h₁, *-h₂, *-e, *a, etc.) which contrast in form and function with those of active hi-verbs.

§ 2 Indo-Europeanists have long been aware of these difficulties, and have repeatedly sought ways to circumvent them. Despite its weaknesses, the view that the hi-conjugation is the lineal descendant of the IE perfect is so widely held at
The Position of the hi-Conjugation

*asi to sigmatic aorists in *asi, nor has Germanic back-formed presents in 3 sg. *asi to strong preterites in *asi.

In short, the theory that the hi-conjugation continues the IE perfect can only be described as inadequate. Its relatively wide acceptance is due less to any striking merits of its own than to the apparent absence of serious alternatives.

§ 3 Proponents of the view that the basic affinities of the hi-conjugation are with the middle rather than the perfect have been hard-pressed to explain the fact, already noted, that the endings *hi, *ti, *si are synchronically active and contrast with middle forms in *-h(i)z(r), *-t(h)i, *-s(h)i(z). Rosenkranz' theory (JKF 2, 339ff. (1953)) that oppositional and non-oppositional (deponent) middles were formally distinguished in Indo-European and that the hi-conjugation originally consisted of middles of the latter type may be excused from an a priori point of view: it is flatly contradicted, however, by the fact that some of the best established IE deponents, such as *kidi.to 'lies' (cf. Ved. sága, Gk. xánin), *k(h)i(to) 'sits' (cf. Ved. át, Gk. xi((n)) and *yed(i) 'wears' (cf. Ved. vadé) correspond not to hi-verbs, but to deponents in Hittite (cf. kitta(r), átari, vedéi). E. Neu's derivation (Studies Palmer 239ff.) of both the hi-conjugation and the middle from an IE category which he calls the 'medio-perfect' is likewise unable to account for such agreements, and involves questionable assumptions about the antiquity of the middle as well.

Even less credence can be placed in the view, first put forth by F. Hrozný in 1917 (Die Sprache der Hethiter, 101; see also W. Couvreux, Annaire de l'Institut de Philologie et d'Histoire Orientales et Slaves 4, 501ff. (1930)), that the endings of the hi-conjugation ultimately derive from those of IE thematic presents like *bhén-o- 'carry' and *ypkhéo- 'convey'. To be sure, a significant number of hi-verbs, such as arra- 'transgress' and arra- 'wash' are to all appearances thematic. Of these, however, only the ones under *hi can plausibly be regarded as the reflex of an inherited form; it would clearly be artificial to suppose that the numerous and well-entrenched athematic verbs of the hi-conjugation have simply taken their endings from the thematic type. The evident connection between Hitt. -hi and the thematic 1 sg. in *du < **nh₂ must be explained, but not in the manner envisaged by Hrozný.

§ 4 The difficulty of deriving the hi-conjugation from any traditionally recognized category of Indo-European has been seen by W. Cowgill, who in a paper presented at the 1974 Winter Meeting of the Linguistic Society of America attempted to

3 Almost identical views are offered by E. Risch in the same volume, pp. 547-568; see also J. Kuryłowicz, Proc. VIII Int. Cong. Ling. 239ff.

4 See especially W. Cowgill, Proc. XI Int. Cong. Ling. 565ff. That the *i of the -hi-endings continues a diphthong was shown by B. Rosenkranz, Jahrbuch für Kleinafri­scbe Forschung 2, 339-45 (1933).

5 Such evidence is certainly not provided by the Livonian 1 sg. preterit in -ha; since the corresponding 3 sg. ending is -ža (cf. Ofr. impf. 3 sg. bere < *berö) at least possible is that the Livonian preterite is based on an old middle paradigm.

6 Similarly, the Hittite -a(h)₂i-verbs (type h₂i₈₃, 'destroys') and ns-verbs (type arna₂(n)i₂i 'brings'), which indubitably continue IE athematic presents in *-m₁, *-n₁, *-s₁, belong exclusively to the mi-conjugation. The prehistory of the hi-conjugation type in -a(n)-i₂(n)ya (cf. i₂₈₃, 'proceeds', 3 pl. i₂₈₃) is obscure; a direct comparison with the Sanskrit ninth class (cf. brndhi, 'buys') < *ni₉ha₈ is phonologically impossible.

7 I choose these examples because both Slavic and Germanic appear prehistorically to have merged the IE perfect, imperfect and aorist into a single 'preterite' category. Note that in Indo-Iranian and Greek, where the contrast between the primary and secondary endings is of considerable descriptive importance, the augment is employed in the secondary tenses as a redundant mark of their preterital value.

This argument is not seriously violated by the fact that a small number of IE root aorists, such as *gh₂i₈₈₃ 'put', appear to have been preceded with primary endings in Hittite (cf. tesi, 'says'). Once the imperfect and aorist had merged in Anatolian, the creation of occasional aorist-present forms would have been all but inevitable.

8 Even here there are phonological problems. IE *h₂i₈₈₃ gives 'go', proceed' is the source of Hitt. =p₈₃, 'march'; consequently, in order to derive n₈₈₃ from n₈₈₈₈₈, it would be necessary to assume that IE *si₈₈₈₈₈₂ in Anatolian before the loss of pretonic *si₈₈₈₈₈₂ and/or *si₈₈₈₈₈₂, and that in secondary hiatus this vowel subsequently merged with Hitt. e rather than with i. Neither assumption, so far as I am aware, can be independently motivated.
explain the *h₂-conjugation within the framework of the Indo-Hittite hypothesis, as Cowgill's scheme, both the *h₂-conjugation and the IE perfect represent different developments of a single Indo-Hittite denominative type, which became associated with "tele" roots in Hittite, but was specialized as a stative present in Indo-European proper. This is not the place to criticize Cowgill's views, which have yet to be set forth in extenso; for the moment, it should suffice to note that no "Indo-Hittite" theory of the *h₂-conjugation can be seriously entertained until every possible explanation along more traditional lines has been considered and rejected. And as we shall now see, there is one alternative theory which, though almost embarrassingly simple, has never been accorded the attention it deserves.

§ 5 Virtually all previous attempts to interpret the Hittite verbal system have assumed that the *h₂-conjugation is an innovation — a development of the perfect, or of a variety of the middle, or of the thematic conjugation, or of a hypothetical Indo-Hittite formation such as that envisaged by Cowgill. Given the classical reconstruction of Indo-European, it is easy to see why this assumption has imposed itself: until recently, there has been no reason to doubt the traditional view that the endings of the IE perfect (and a fortiori those of the middle) were excluded from the active of the present-arist system in the parent language. In the past decade, however, the legitimacy of this position has come into question. The work of C. Watkins has shown (idg. Gr. III. 1, passim) that the thematic 1 sg. in *-oes did not arise in late Indo-European as an isolated aberration for "regular" *-oes, but rather belonged to an ancient infectional type in which the 2 sg. and 3 sg. ended in *-abm and *-es, respectively. Thus, the basic affinities of the classical thematic active appear to have been with the perfect and the middle rather than with the athematic present type in *-es — a seeming paradox with important consequences for the reconstruction of the IE verbal system as a whole. The thematic sorist may or may not have constituted a similar category: under Watkins' analysis (op. cit., ch. 7), the ending of forms like *"jad found, saw' was originally produced by suffixing *k to an earlier 3 sg. in *-dk.

Once the possibility is admitted that Indo-European had active presents and sorists with endings that belonged to the "h₂-series" rather than the "m-series", a new and straightforward approach to the problem of the *h₂-conjugation suggests itself. The IE present active, in my view, contained paradigms of two kinds — those characterized in the singular by the endings *-mi, *-ta, *-ti (3 pl. *-t(m)mi), and those characterized in the plural by the endings *-hes, *-hes, *-hes, *-hes (3 pl. *-hes), traditionally regarded as proper only to the perfect. Present of the latter type included full-grade thematic stems (*θeke, *-geke, etc.) as a special case: here the 1 sg. ending apparently underwent shortening from *-ože to *-oze within the common period. More importantly for our present purposes, however, the type in *-hes also included athematic presents of several distinguishable varieties (see §§ 7—11 below); these, with the addition of the *-e of the *hes et anac, directly yielded the basis subclasses of the *h₂-conjugation.

But very simply, I propose to see in the *h₂-conjugation, the direct formal and functional constituent of an IE category — one which, for want of a better term, I shall refer to below as the "h₂-conjugation".

§ 6 There are, of course, a number of apparent difficulties with this hypothesis, most notably the fact that outside the thematic conjugation the putative type in *-hes is nowhere preserved in the non-Anatolian languages. But this, in the last analysis, is not very surprising. Athematic presents, as a synchronic type, are common only in Hittite and Indo-Iranian, and to a lesser degree in Greek, Balto-Slavic and Tocharian. Everywhere outside Anatolian the number of such presents has been restricted, in most cases very severely; statistically, inherited athematic stems are most frequently represented in the IE daughter languages by thematic presents in *-e/0 and *-je/0. Clearly, the same forces which operated to eliminate the mi-class in the post-IE period would have worked to restrict the putative athematic type in *-hes as well. In the latter forms, however, there was an additional factor which contributed to the instability of the inherited situation, namely, the coincidence of the athematic 3 sg. in *-e with the thematic ending of forms like *θi. There, thus, there would have been intense pressure for any athematic *hes-presents which survived beyond the early dialectal period to join the regular thematic type; as we shall see below, it is chiefly in a thematic guise that the non-Anatolian reflexes of the h₂-conjugation are attested.

Less serious, it seems to me, is the potential objection that Indo-European, if it already had an active type in *-mi, would have had no need for a second, and iso-functional type in *-hes. This argument is no more cogent for Indo-European than it is for Hittite, where the mi- and *h₂-conjugation endings exist side by side with no discernible difference in meaning. It is obviously tempting to speculate that the hes-presents of the parent language originally differed in some semantic particular from their counterparts of the mi-conjugation (see § 12), but it is not necessary to conclude from this that such a contrast was still operative at the end of the common period.

§ 7 The above theory would be completely ad hoc if the only motivation for assuming presents in *-hes in Indo-European were the existence of *h₂-verbs in Hittite. But in fact there are several groups of presents in the non-Anatolian daughter languages which have never been adequately explained, and which readily lend themselves to analysis within the new framework.

We may begin by considering the present of the root *melh₂- 'grind' outside Anatolian. Thematic forms with e-grade are attested in Germanic (Ger. malan, Ger. mahlen) and Baltic (Lith. malit, inf. milti), while e-grade is found in Old Irish (meld) and, with the suffix *-je, Slavic (OCS melj, inf. milti). It is impossible to determine whether the -e of Lat. melf is original or continues earlier *-e. Zero-
grade vocalism is found in Umbr. *kumalvita 'common', MV *mval and Arm. *mvalen, which reflect a stem *mvalh-e/o-. To account for these forms, which evidently stand apart from Ved. 3 sg. imper. *mvali, and 2 sg. imper. *mvali, A. Meillet, in a little-noticed 1916 article (MSL 19, 181–90) proposed to derive them from an IE athematic root present: *mvalh-/*mval/*mvalh-/*mvalh. This analysis is clearly still the best available, and will be assumed in the discussion that follows. Given our current knowledge of the IE apophonic system, it may be surmised that *mvalh- and *mvalh- were respectively the strong and weak allomorphs of the inherited present stem, while *mvalh- was a stem-reconstruction, much in the same way that, e.g. 3 pl. *mvalh ‘write’ and *mvalh ‘praise’ replaced *mvalh and *mvalh in early dialects (cf. 3 sg. *mvalih, *mvalih in Vedic Sanskrit (cf. J. Narten, Pratidnman, 1966, 12ff.)

The present of *mvalh is by no means isolated. Several other twentieth-century scholars have addressed the question of whether Indo-European had a primary present type.12 The most important being R. Hirtzsche, IF 68, 149ff. (1963) and P. Gritzke, Die primaren Prasentativ mit o-Stufe in den ind. Sprachen (Diss. Breslau, 1965). The list of verbs that follows, comprising only a fraction of the valid cases, is largely taken from these sources; note the seemingly promiscuous interchange of *-o- and *-e- in the root, and of *-o- and *-je/o- and occasionally zero in stem-final position.

*gerhnt.: cf. Ol. berjast ‘fight’, Lith. barži ‘fight’ (OLith. athem. baržm), OCS barj ‘fight’ with *-eo-. Lat. ferent, -ere ‘strike’ with e-grade.


*prhnt.: cf. Ol. *graban ‘give’ (cf. Watkins, IE Origins of the Celtic Verb 192). Note further the athematic subjunctive (< present) of *-e-.

*gani:–: cf. OCS gaban ‘hang’ (tr.), ORG *-gani:–: ‘hang’ (intr.). Lat. cantor, -ere ‘delay’ (presupposing an underlying *concor, -e- with *o-). No e-grade forms are directly attested. The root-form *yhnt- is presumably an enlargement of *-ynt–.

§ 10 For Meillet in 1916 the assumption of an ablauting paradigm in *-e-/*-e- for the verbs above implied the original existence of active singular forms in *-e-, *-e-. As a paradigm in *-e-, *-e- has a paradigm in *-e-/*-e-. However, there would be no direct comparison with the view of the IE verbal system presented in §§ 5–6. Moreover, such a reconstruction would explain the failure of the *-mvalh/ *mvalh-class to show overt mi-forms in Indo-Iranian and Greek: in place of direct reflexes of *phdti, *-k(e)tih, *khs, *khs, *khs, *t0p, *rygh, these languages attest only forms which are thematic or middle, or both.13

It is Hitler, however, that supplies the decisive evidence for the reconstructive work above. The verb *phdti has thematic verbs in which a strong stem in *-s alternates with a weak stem in *-e- and these belong exclusively to the *-i conjugation. There are five examples: ar, ‘come, arrive’; akh, akh ‘settle’ (tr.); b‘akh, b‘akh ‘open’; k(a)r(a)b, k(a)r(a) ‘eat, fressen’; b‘akh, b‘akh, ‘know’. (A sixth case, akk: ‘die’, shows ablaut only in the late present 3 pl. evi and probably did not originally belong here.) These verbs have always presented difficulties. Under the theory that the *-i conjugation continues the perfect it is easy to account for the apparent o-grade of the strong forms, but not for the *-e- of the weak forms; Eichner’s suggestion (cf. Meillet, JSt 67, 1932) that *e was diffused from a reduplicated stem *-e- is unlikely in view of the absence of re-

12 Alternately, of course, one might attempt to derive the o- and e-grade present forms of *mvalh- from two distinct formations in the parent language. But while such an interpretation would be possible if *mvalh- were an isolated lexical item, it will not account for the systematic tendency of all o- grade presents to appear with e-grade by-forms (see the following list). Other proposed explanations of the *mvalh-/*mvalh-type, none very persuasive, are summarized in the works cited below.

13 The replacement of *weak* full-grade forms by forms with zero-grade is a common feature of IE linguistic history; it can be exemplified in every branch of the family. For the ablaut *mvalh-/mvalh- compare IE *pod-/pod- ‘foot’ (cf. J. Schindler, BSL 7, 31ff. (1912)).

14 For the reconstruction of a laryngeal see § 9.
duplication in the corresponding strong stem ar.17 Other things being equal, it would clearly be preferable to take the forms in question at face value, i.e., as inherited presents with *-o/*-e- apophony and he-infection. The roots ar-, baî,18 and karap-easily lend themselves to comparison with the *molh-/*melh2-type: ar- like Go. gangas, Gk. oïkeu, Arm. ʾoṣay and Ved. ṣaiga, is a verb of motion; karap- is conceivably cognate with Go. grovan and OCS po-gredъ (the original sense would then have been "rummage"); compare NE (slang) grub 'food' from the same root. Although static in meaning, bāk(k)- can be analyzed in the same way.19 Only a few, with its exceptional intensive reduplication, clearly represents a different formation; I have already suggested (SMIE §52) that it is to be compared formally with Ved. ʾelāgš (MS) 'waves' and Go. reiweri 'troubles', which appear to reflect a type of intensive which inflected as a perfect in the parent language.

§ 9 The ablauting verbs of the hi-conjugation are few in number and restricted to stems ending in a single consonant. It is probable, however, that such verbs were once more common. Roots of the structure TERT, for example, do not form apophonic presents in Hittite, but there is every reason to believe that they were originally as capable of showing ablaut as roots of the form TET: the absence of paradigms of the type 3 sg. *TaRT-: 3 pl. *TaRT-ansi (*TERT-ansi) reflects nothing more than the fact that before sequences of liquid or nasal + consonant IE *e, *o and zero merged as Hitt. *a.20 In effect, therefore, we should expect to find the *molh2/*melh2-type largely represented in Hittite by non-apophonic hi-verbs with a-vocalism. At least three such examples present themselves.

The family of Lat. molâ and Go. malan is represented in Hittite by malla- 'grind', a thematic verb of the hi-conjugation. The root-vocalism of this form is ambiguous, although the treatment of IE *-h- as Hitt. -l- makes it likely that *molh2 or *melh2, rather than *molhx, was the ablaut-grade of the preform. The thematic inflection of malla-, like that of its Italic, Celtic, Germanic and Baltic cognates, is clearly secondary. It is not impossible that, as elsewhere in the Indo-European, the coincidence of 3 sg. *molhx2 with thematic forms like *hârdr led to the establishment of a pre-Hittite thematic stem *molh2-e/-o; the rarity of inherited thematic presents in Hittite, however, makes such an explanation less attractive for Anatolian than, e.g., for Italic. But whatever the mechanism by which malla- was thematized, it is almost unthinkable that an athematic stem *molh2 could have survived: it is a little-discussed, though easily verified fact that virtually all Hittite hi-verbs with roots in *-i- and -e- are at least partly thematic, as are the majority of hi-verbs with final clusters of any kind.21 In effect, the creation of mallaht, malleth, malla2, etc.22 from inherited *molh2-e(i)-th(i)-, *molh2-e-i(2)-th(i)-, *molh2-e-i(2) would have made a completely straightforward development — far more easily intelligible, in particular, than a derivation from the same forms from an earlier mi-conjugation paradigm.

A similar case is presented by gangâblti 'I hang (tr.)', which invites identification with the Germanic strong verb *haklan 'id.' We have already seen indications that the thematic forms of *haklan in Germanic and Vedic are late; traces of an originally thematic paradigm in Hittite can be detected in the verbal noun panuwrar 'weight' and in the Old Hittite spellings 3 sg. ka-an-an-ri, 3 pl. ka-an-ka-an-zî, which suggest a difference of stress between singular and plural forms (23). The Hittite and IE facts can easily be accounted for by assuming an IE singular paradigm *kîh3hi-/*käh3hi-/*käh3, -s-. The third Hittite hi-verb which corresponds to an *-o/*-e-present elsewhere is padda- (or padda)24 'dig', the counterpart of Lat. fodio, OCS bod and Lith. bačiot. Note that the graphic -dd- of this word represents not [t], but an authentic geminate [dd], which probably arose from an earlier sequence of stop + laryngeal (cf. mekkî 'much' < *mekkî-si-). Given the regularity with which "heavy" hi-conjugation roots are thematized in Hittite, it would be attractively simple to derive padda- from an IE type *bažkkh3-x-sî, *bažh3- *e ā, 24-25.

§ 10 malla-, ganga-, padda-, and perhaps karap-, are the only hi-verbs which are directly equivalent with o-grade presents elsewhere, but a number of further examples can be similarly interpreted. The hi-verbs šger- 'stick' and škalla- 'cut up' lie in the same semantic sphere ("violent action"; cf. Homeric, op. cit. 155.6) as 'grind' (molâh2/melâh2), 'dig' (bhôddh2/bhêddh2), 'yârâh2/vârâh2') and 'strike' (bhôrkh2/bhêrkh2); the corresponding extra-Hittite forms (of Gk. xîpâ, Arm. kerem 'cut'. Lith. skelit, skelit 'split') were probably originally athematic, and can reasonably be supposed to have belonged to the *-o/*-e-type. Note also ḫatta- 'chop' and ḫarâ- 'smash', which lack convincing etymologies. Though less well-marked, the correspondences šip(2)un(a)- 'libate': Gk. étanbo 'id.', šîparra(2) 'lay out': Gk. étaipe 'mutter' and verb 'wipe off'; Lat. sero 'sweep may in principle reflect IE presents *spesô/*espâ, *espôrâ/*espêrâ, and *sêre-/*sêrâ, respectively.

Thus, when due allowance is made for the incomplete state of preservation of the *molh2/*melh2-type outside Anatolian, the degree of correlation which can be established between the probable consonants of this type in Greek, Germanic, Balto-Slavic, etc. and root and thematic hi-verbs in Hittite is by no means insignificant. No regular relationship, on the other hand, is observable between *molh2 presents and verbs of the mi-conjugation; as we have already seen, forms of the type *molh2- are attested neither in Anatolian nor elsewhere in Indo-European. The natural inference, in my view, is that the hi-conjugation infection of Hitt. malla- and its congeners is an inherited archaism.

17 Nor would it matter significantly if a derivation of ar- from *hê-hê-var were phonologically possible: reduplication of the "perfect" type plays only a minor role in the hi-conjugation, and there is no reason to believe it was inherited here.

18 Note that the weak stem bes- must be analogical; *bes-2 and *bes- would both have yielded Hitt. *bes-.

19 It is also possible, of course, that contrary to the usual pattern, bāk(k)- continues an old perfect.

20 I use R to stand for any consonant, and T to represent any sonorant, obstruent or laryngeal.

21 In such cases it is not impossible that the thematic vowel was originally aprotosingenic.

22 The 3 sg. in -ii is clearly analagous, reflecting the addition of the productive ending -e to stem-final -o. The thematic 3 sg. in -ei would regularly have yielded -i, which is in fact abundantly attested.

23 Compare the originally oxymoronic construction of Cm. *bangaib 'hang (intr.)', reflecting an earlier rendition *baoði; both Hittite and Germanic have evidently extended the accentual mobility of other athematic presents to the *molh2/*melh2-type.

24 The first syllable of this verb is always written with the sign pî, the true reading is not known.

25 Similarly, arra- 'wash' corresponds semantically to an o-grade present in Greek (thô < *tôbôh2); the root recurs in Toch. A yàr- 'bathe' (< *thôb2h2>).
It is not my intention, of course, to claim that all Hittite hi-verbs continue IE presents of the *molh₂-/molh₃-type. Such a claim, obviously false in any event, would serve no useful purpose: one of the most attractive features of the present theory is that, unlike other current views, it permits us to envisage more than one IE stem-type as a potential source of hi-verbs in Hittite. At least two additional classificatory approaches can in fact be identified in the parent language; we can do no more than give a brief account of them here.

Hitt. labu- 'pour', an athematic verb of the hi-conjugation, is one of the clearest examples in Hittite of a "*w-present": the unextended root labu is directly attested in forms such as 2 sg. impv. lā(h)₂, 1 sg. pret. lāj(h)₂ and verbal noun lājwar (= labu + -sear; labu+ + -sear would have yielded *lājum(m)ar). Presents containing an enlargement *-i are known from other IE languages as well; in general, they are well-attested for the corresponding verbs (cf. Ved. yārti 'overcome', Gk. ἐφομαί 'I save'), but ordinarily form thematic forms (cf., from the same root, Hitt. ḫuwaši 'overcome', Av. hauravati 'projects'). Thus, the thematic type in *-yeo appears at least in part to occupy the structural position of an athematic active. Significantly, it is marked by hesitation between full- and zero-grade root-forms; the clearest example is the IE word for 'live', which appears as *g'hjik₂-yeo/*g'ēikh₂-ye in Indo-Iranian (Ved. āvāt), Italic (Lat. uīsus) and Balto-Slavic (OPr. 2 sg. giacane, OCS šlep), but as *g'ēiξ₂-yeo/*g'ēik₂-yeo in Greek (Gk. žlē) and Tocharian (3 sg. saime < *indō). An earlier athematic formation with apophony is probably indicated, and in view of the almost unaided establishment of thematic inflection in the daughter languages, it is attractive to assume that the endings of the original paradigm were those of the h₂-e-series (3 sg. *g'ēih₂-y-e, 3 pl. *g'ēiξ₂-y- or (as *g'ēik₂-y-enti; see below)). Under such an analysis Hitt. 3 sg. lāpni would directly continue an inherited *lājwē-e(-eti)²⁸.

Indo-European appears also to have had a present type *-i, which plays a prominent role in the parent language. As is well-known, a number of IE roots in *-w₂- form Hittite presents in 3 sg. *dājī; a representative example is dāi 'put'; (1 sg. OH tāj-he < *dāižhe, 2 sg. dāiži, 3 sg. lāpni (1 sg. lāpi, 3 pl. lāfnin) < *dāh₁. The apophony which these verbs show cannot be explained as an inner-Hittite development;²⁹ it is probably an inherited feature, and can be given a natural interpretation under the h₂-e-conjugation theory. In the parent language, in my view, certain roots of the structure TEB- formed presents of the type 3 sg. TEB-i-e, 3 pl. TEB-i-ēr (-enti). In Hittite, where this class was extended to include the majority of TEB-roots, forms of the type dāh₁-ēr-i developed (via the intermediate stage *dājē) to dāh₁-ēr-i, which would regularly have given *tājhe and *tāti, were analagously provided with the vocalism of the 3 sg. ³². Occasionally, as in the case of ḫēdāi,

The Position of the hi-Conjugation

*γWayzi 'bind', a Hittite present of the dāi-type corresponds to a 'long-diphthongal' root outside Anatolian (cf. Ved. perf. 3 sg. sīhāya < sā 'bind', Lat. sēnsī 'bind'), etc. It is tempting to suppose that the *-i which optionally characterizes such roots originated in inherited presents like *xāh₂-ei/*xēh₂-ei, which were reanalyzed as root formations at an early period. Outside Hittite the schematic inflection of the type in *-i was ultimately lost, the 3 sg. *-i-e serving as the starting point for the creation of a complete thematic paradigm in *-je-o.³³

It has been stressed throughout the preceding discussion that the h₂-e-verbs of Late Common Indo-European were synchronically active presents, distinguishable formally, but not functionally, from the traditionally recognized active types in *-i. Despite this, some of the results of the IE verbal system are typologically quite unremarkable, and accounts in a relatively simple way for a variety of independently troublesome facts.

It is clear, however, that the identity of the h₂-e-conjugation endings with those of the perfect, and the resemblance of the perfect endings, in turn, to those of the middle, raise important questions about the relationship of the h₂-e-conjugation to these two categories. Unfortunately, the only technique by which the prehistory of the IE verbal system can be recovered is internal reconstruction, and the line which separates this method from mere guesswork must in the present case be a thin one. The remarks that follow, therefore, are intended less as firm conclusions than as tentative hypotheses, to be revised or replaced as needed.

A reasonable inference from our results thus far is that the classical IE perfect originally constituted yet another type of h₂-e-conjugation present, formally similar to the *molh₂-/*molh₃-class but differing from it in showing reduplication.³⁴ By the close of the common period, however, the special semantic status of the perfect must have had some effect in promoting the IE to guarantees of the distinctive development in the daughter languages: while reflexes of the IE perfect retain features of their inherited inflection almost everywhere, presents like *molh₂-/*molh₃, as we have seen, are characteristically thematicized or replaced by forms in *-je-o.³⁵ It is not unlikely that the beginnings of this formal divergence date from

²⁸ An obvious difficulty is presented by Hitt. tarenzi 'is able', which belongs unmistakably to the mi-conjugation. It is not impossible, however, that this form reflects the influence of the unextended 3 sg. tares; note also that the causatives in -na₃, which constitute the overwhelming majority of Hittite verbal stems in -na₃, constitute the overwhelming majority of Hittite verbal stems in -na₃, according to the mi-conjugation. Greek appears to lack active forms of the type *ēµau; Armenian verbs like ēmdu 'I turn' quite possibly continue middle verbs like Ved. tāvati.

²⁹ Middle Hittite forms like 1 pl. piwari, balisanti establish *g'yos as the historically correct segmentation of the 3 pl. in γyanzi. It is thus not possible to regard γyagumi, γyagumi, etc., as transfer forms from an originally autonomous *je-o-paradigm. Alternatively, one could speculate that dāi was reanalyzed as root dāi + ending -i, and that the new stem then extended to the other strong forms.

³⁰ It would then be attractive to regard the zero-grade of the weak forms of the perfect as having supplanted an earlier e-grade; the presence of a reduplicating syllable would have been conducive to such a replacement. If, as often assumed, reduplication in the perfect was at first merely facultative, there would originally have been no formal differences between simple causative presents like *tāhror, *tāhr- 'burn' and perfects of the classically reconstructed type.

³¹ In Tocharian, the h₂-e-conjugation endings of the 3 sg. *-de < A. -d(e), B. -t(e) and 3 sg. *-e > A. -d(e), B. -d(m), with analogical absence of palatalization were
FOLKE JOSEPHSON

Assilabation in Anatolian

Hittite s not only represents IE s but may reflect an assimilated palatalized $d$. Hittite $z$ may alternate with $s$ in the same word, but is also known to represent an assimilated palatalized $t$. Some words have initial $s$—such as $swanw$ [swaw] “bird” and $sekat$—“nail” [sait]. Other Hittite words with initial $s$ have been considered to show assimilation of initial palatal $k'$. In front of $u$ and $w$ these and have been discussed in connection with the general problem of sel'm traites in Anatolian languages and HL avanu “horse”, forma “horn” and $swana$ “dog”. A. Goetze suggested that assimilant $k'$ may be found in Hitt. $supp$ “clean, pure, holy” (—$k'embh$) and that $suppal$ “catle” would contain $k'(p)k'u$ “swell, fill” would go back to $k'eu$ A. Kammenhuber followed F. Sommer in not accepting $k'u$ as for any An. language except HL. She derived $avm$ from $swe$ and excluded $k'u$ as for $suppi$ and $suppal$—because palatal $k'$ was not assimilated in $tekkuwan$—(supposedly = Skt. $dhit$) even though she acknowledged that $u$ is secondary in this word, and also because $suppi$ is —$sw$ and $sv$—$sma$ $sma$—belong together with Lat. $sure$. These arguments are strongly, and it would have been better to cite an example such as $k'w"a"$ “right hand side”, if it belongs together with Skt. $sudam$. In a contemporary article the opposite road is taken by H. G. Güterbock and E. F. Hamp, who accept A. Goetze's etymologies for $suppi$ and $suppal$ and propose that Hitt. $swm$—“to look” is related to Alb. *$k'u-o$—(with Alb. oll and W. yulu) esu- “dull” is compared with Skt. *$sait$. Hitt. $parkus$, $parkus$ are thought of as showing a blocking of the expected assimilation by the aspiration (or laryngeal) of $g'$. G. B. Soltau observed that Anatolian is not the only branch of IE that shows assimilation of palatal (and palatalized) $k'$ and cites the studies of N. Jokl for a similar development in Albanian (affecting $k'u$, $k'u$- and $k'yu$-) and the Gk. development $k'i$—$t'j$ ($k'u$—$su$ is not corresponded, in Alb. by a similar development $g'j$—$t$). The $u$ vowel was supposed to be a condition for the palatalisation in Albamian and Greek.

The mechanism of assimilation has recently been described in an important chapter of J. Foley, Foundations of Theoretical Phonology (ch. 6). He tries, on the basis

2. *sakkar/sakkar.
5. Language 30, 430—4%.
6. RHA 59, 1 sq.
8. RHA 58, 23—25.
11. Of W. S. Allen, Lingu 7, 116: $k'$ before front vowel—labio-palatal velar—labial prepalatal affricate [$t']