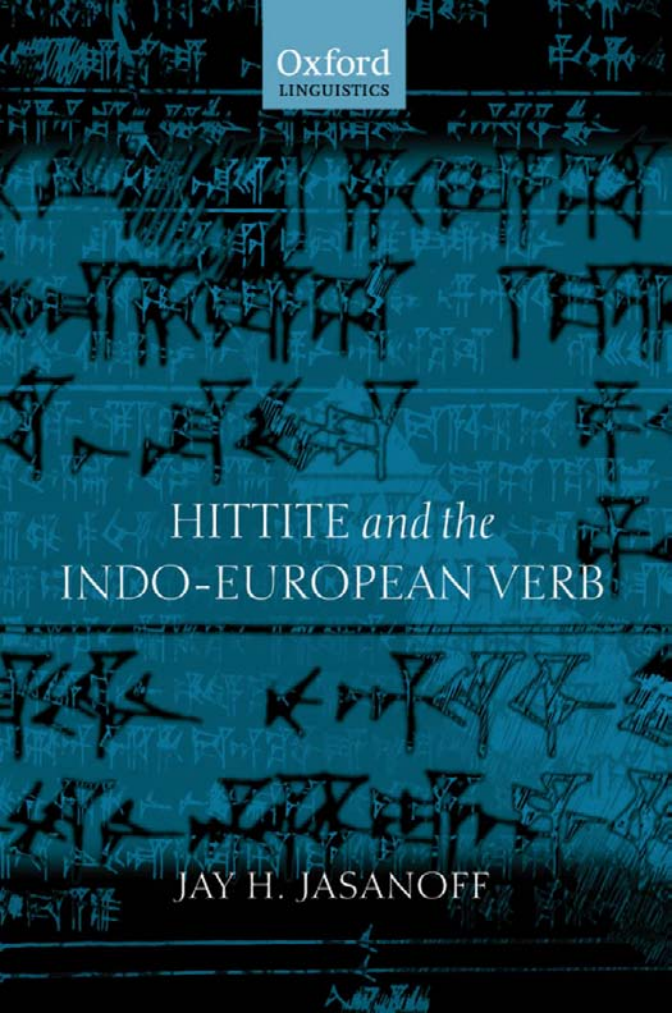
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INDO-EUROPEAN VERB
JAY H. JASANOFF

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Oxford is a registered trade mark of Oxford University Press
in the UK and in certain other countries
Published in the United States
by Oxford University Press Inc., New York

First published 2003

A catalogue record for this title is available from the British Library.
Library of Congress Cataloging in Publication Data
Jasanoff, Jay H.
Hittite and the Indo-European verb / Jay H. Jasanoff.
Includes bibliographical references.
ISBN 0 19 924905 9
1. Hittite language—Verb 2. Indo-European languages–Verb I. Title.
P945 .J36 2003 491'.9985–dc21 2002028263
ISBN 0 19 924905 9
10 9 8 7 6 5 4 3 2 1

To my family

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Preface

This book has been in the works, so to speak, for twenty-five years. The memory is still fresh of the evening in the fall of 1976 when the idea of an 'Indo-European *ḫi*-conjugation' first occurred to me in connection with the cognate verbs for 'hang' in Germanic and Hittite. From then to now it has been a long journey, with many ups and downs and a fair number of wrong turns; anyone who cares to follow the details can consult my publications since 1979, the year the *h₂e*-conjugation theory made its official debut. By the mid-eighties it was clear that the subject deserved a book—a book that I actually began to write in 1986, while I was a Visiting Fellow at Wolfson College, Oxford. But it would have been a much worse book if I had finished it then; among other things, the discussion of Hittite ablaut would have been badly flawed, and the aorist would have been missing altogether. Much of my work in the late eighties and early nineties was devoted to the study of *h₂e*-conjugation aorists—the material that now comprises Chs. 6 and 7. A recognizable precursor of the present text, incorporating my findings over that decade, was completed in the spring and summer of 1996, when I was again associated with Wolfson College. Complications arising from my 1998 move from Cornell to Harvard delayed the final product further, and it was not until May 2000 that I had a circulable manuscript. The version which goes to press, which reflects the suggestions of a small but select band of advance readers, was completed in September 2001. It has indeed been a quarter of a century.

Over that period many people—students, colleagues, and friends—have heard a lot about the *h₂e*-conjugation, willing or no. Many have helped the project along, either with concrete suggestions, constructive criticisms, or—no less eloquent—blank stares. I cannot acknowledge them all. But there are some whose names I cannot fail to mention. I owe an enormous debt to the late Jochem Schindler, whose encouragement, both when we were colleagues at Harvard in the late 1970s and thereafter, led me to press my ideas into *terra incognita* even when the way ahead seemed barren and unpromising. The feedback and support of Anna Morpurgo Davies and Alan Nussbaum have sustained me over many years and sustain me still. My former students Gudrún Thórhallsdóttir, Joshua Katz, Kazuhiko Yoshida, and Michael Weiss were among the first hearers of some of the ideas presented here, and their first reactions helped to improve both what I had to say and how I said it. I am

grateful to Jeremy Rau for tracking down hard-to-find references, and to two anonymous reviewers for Oxford University Press for their advice on how to make the manuscript more accessible to potential readers. Craig Melchert commented extensively on the May 2000 version and saved me from many errors of judgement and fact. To all these, and to the many others I have not named, I offer my deepest thanks. Naturally, I am alone responsible for the imperfections that remain.

My debt to my teacher—now my colleague—Calvert Watkins is of a different order. No one familiar with his writings on the IE verb will fail to see how deeply they have influenced mine, even on points where we disagree. Without his *Celtic Verb* and *Geschichte der indogermanischen Verbalflexion,* this book could never have been written. And without his example, I would never have learned what constitutes a problem worth working on, and what constitutes a solution worth looking for.

Most of the actual writing of this book was done on extended stays abroad—in Oxford in 1986 and 1996, where John Penney and Anna Morpurgo Davies were generous hosts, and in Kyoto in 1999, where Kazuhiko Yoshida looked after my every need. During the 1986 Oxford stay I was the recipient of a fellowship from the National Endowment of the Humanities; I am happy to be able to acknowledge this now, however belatedly. Above all, however, I am grateful for the long years of support and encouragement I received from my unique family—my parents Milton (†) and Edith, my wife Sheila, and my children Alan and Maya, to all of whom this book is lovingly dedicated.

J.H.J.

Cambridge, Mass.

September 2001

Contents

Abbreviations

The following abbreviations are used for works cited in the main text and accompanying footnotes. For abbreviations used in the References section see pp. 234–5.

Brugmann, *Gr.* Karl Brugmann, *Grundriß der vergleichenden Grammatik der indogermanischen Sprachen*^{2}, 2 vols. (Strassburg: Trübner, 1897 (i) and 1906–16 (ii/1–3)

CHDThe Hittite Dictionary of the Oriental Institute of the University of Chicago, ed. Hans G. Güterbock and Harry A. Hoffner (Chicago: Oriental Institute, 1980–)

EWAia Manfred Mayrhofer, *Etymologisches Wörterbuch des Altindoarischen,* pt. i: *Ältere Sprache,* 2 vols. (Heidelberg: Winter, 1992–6)

Frisk, *GEW* Hjalmar Frisk, *Griechisches etymologisches Wörterbuch,* 3 vols. (Heidelberg: Winter, 1955–72)

HED Jaan Puhvel, *Hittite Etymological Dictionary* (Berlin–New York: Mouton de Gruyter, 1984–)

HEG Johann Tischler, *Hethitisches etymologisches Glossar* (Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck, 1977–)

IEW Julius Pokorny, *Indogermanisches etymologisches Wörterbuch* (Berne–Munich: Francke, 1959)

Krause–Thomas Wolfgang Krause and Werner Thomas, *Tocharisches Elementarbuch*<, i. *Grammatik* (Heidelberg: Winter, 1960)

Kümmel Martin Kümmel, *Stativ und Passivaorist im Indoiranischen* (*Historische Sprachforschung* Ergänzungsheft, 39; Göttingen: Vandenhoeck and Ruprecht, 1996)

LIVLexicon der indogermanischen Verben: Die Wurzeln und ihre Primärstammbildungen, ed. Martin Kümmel, Thomas Zehnder, Reiner Lipp, and Brigitte Schirmer under the direction of Helmut Rix (Wiesbaden: Reichert, 1998)

Mayrhofer See *EWAia* above

Melchert H. Craig Melchert, *Anatolian Historical Phonology* (Leiden Studies in Indo-European, 3; Amsterdam–Atlanta: Rodopi, 1994)

Oettinger Norbert Oettinger, *Die Stammbildung des hethitischen Verbums* (Nuremberg: Hans Carl, 1979)
Pokorny See *IEW* above
Puhvel See *HED* above
Tischler See *HEG* above

Abbreviations of language names and texts are as follow:

Alb. Albanian
Arm. Armenian
Att. Attic
Av. Avestan
AV Atharvaveda
Br. Brāhmanas
CLuv. Cuneiform Luvian
Cret. Cretan
CToch. Common Tocharian
Cyp. Cyprian
Dor. Doric
EM Etymologicum Magnum
Eng. English
Fal. Faliscan
Fr. French
GAv. Gathic Avestan
Ger. German
Gk. Greek
Gmc. Germanic
Go. Gothic
Hesych. Hesychius, *Lexicon*
Hitt. Hittite
HLuv. Hieroglyphic Luvian
Hom. Homeric
IE Indo-European
IEP Indo-European Proper
IH Indo-Hittite
IIr. Indo-Iranian
Ion. Ionic
Lat. Latin
Latv. Latvian
Lith. Lithuanian

Luv. Luvian
Lyc. Lycian
Lyd. Lydian
MH Middle Hittite (for MH+, see Ch 3 n. 44)
MHG Middle High German
MIr. Middle Irish
MS Maitrāyanīsaṃhitā
MW Middle Welsh
Myc. Mycenaean
NE New English
NH Neo-Hittite
OCS Old Church Slavonic
OE Old English
OH Old Hittite (for OH+ and OH++, see Ch. 3 n. 44)
OHG Old High German
OIcel. Old Icelandic
OIr. Old Irish
OLat. Old Latin
OLith. Old Lithuanian
ON Old Norse
OP Old Persian
OPr. Old Prussian
OS Old Saxon
Osc. Oscan
OSw. Old Swedish
PA Proto-Anatolian
Pal. Palaic
Pamph. Pamphylian
PGmc. Proto-Germanic
PIE Proto-Indo-European
PIEP Proto-Indo-European Proper
PIH Proto-Indo-Hittite
PIIr. Proto-Indo-Iranian
Pol. Polish
RCh. Sl. Russian Church Slavic
Russ. Russian
RV Rigveda
Skt. Sanskrit
Sl., Slav. Slavic

Sp. Spanish
Thess. Thessalian
Toch. Tocharian
Umbr. Umbrian
Ved. Vedic
Vest. Vestinian
VS Vājasaneyīsaṃhitā
WGmc. West Germanic
Y. Yasna
YAv. Younger Avestan
Yt. Yasht
Žem. Žemaitish

1 The Problem of the *ḫi*-conjugation

§1. '*Pa-aḫ-ḫa-áš-ḫi* is in my opinion 1 sg. pres.-fut. act…. The ending -*ḫi,* contrasting with the usual -*mi,* recalls the 1 sg. primary ending *-*ō* (Gk. φέρω, Lat. *fero*); the -*ḫ*- probably goes back to the stems in -*ḫ*-, while the vocalic ending *-*ō* was perhaps replaced by the final -*i* of the other Hittite present endings …'[1] Thus in 1917, with a *naïveté* that in retrospect seems almost touching, did Hrozný first announce the existence, and the problem, of the Hittite *ḫi*-conjugation. Today, the better part of a century later, the historical position of forms like Hrozný's *paḫḫašḫi* 'I (will) protect' is still disputed. The origin of the *ḫi*-conjugation has become a 'classic' problem, somewhat like the origin of the weak preterite in Germanic or the *f*-future in Old Irish. But unlike such traditional puzzles as these, the problem of the *ḫi*-conjugation has a certain urgency to it. Indo-Europeanists may choose to study the Germanic dental preterite or not, secure in the knowledge that the real origin of this formation, if it is ever established, will do nothing to upset their basic assumptions about the structure of the IE family or the organization of the PIE verbal system as a whole. No such complacency is warranted in the case of the *ḫi*-conjugation, a category whose very name epitomizes the 'lack of fit' between Anatolian and the rest of Indo-European. It is both revealing and symptomatic that a well-known 1979 volume on 'Hittite and Indo-European' contained no fewer than five articles devoted wholly or partly to the origin of the *ḫi*-conjugation, all mutually incompatible.[2]

§2. The synchronic facts are easily stated. Every non-deponent verb in Hittite belongs to one of two descriptive classes—the *mi*-conjugation and the *ḫi*-conjugation. The *mi*-conjugation is characterized by the endings 1 sg. -*mi,* 2 sg. -*ši,* 3 sg. -*zi* in the present singular and 1 sg. -*(n)un,* 2 sg. -*š* (later also -*t*), 3 sg. -*t* in the preterite singular; the corresponding *ḫi*-conjugation endings are 1 sg. -*(ḫ)ḫi* (Old Hittite (OH) -*(ḫ)ḫe*), 2 sg. -*(t)ti,* 3 sg. -*i* (present) and 1 sg. -*(ḫ)ḫun,* 2 sg. -*(t)ta,*

[1] Hrozný 1917: 101 (translation mine).

[2] The book in question is Neu–Meid 1979, with contributions on the *ḫi* -conjugation by Cowgill, Kurylowicz, Lindeman, Meid, and the present author.

3 sg. *-š* (preterite).[3] There is no distinction between the two conjugations in the plural; both *mi-* and *ḫi*-verbs have the endings 1 pl. *-weni/-wani/-meni,* 2 pl. *-(t)teni/-(t)tani,* 3 pl. *-anzi* in the present and 1 pl. *-wen,* 2 pl. *-(t)ten,* 3 pl. *-er* in the preterite. The descriptive situation can be illustrated with the older indicative forms of the verbs *pāi-* 'go' (*mi*-conj.) and *dă-* 'take' (*ḫi*-conj.), which are shown in Fig. 1.1 below.

FIGURE1.1

pres. sg.	1 *pāimi*	pl. *paiwani*	sg. 1 *dāḫḫi*	pl. *tumēni*
	2 *paiši*	*paittani*	2 *dātti*	*datteni*
	3 *paizzi*	*panzi*	3 *dāi*	*danzi*
pret. sg.	1 *pāun*	pl. *paiwen*	sg. 1 *dāḫḫun*	pl. *dawen*
	2 *paiš*	*paitten*	3 *datta*	*datten*
	3 *pait*	*pair*	3 *daš*	*dair*

The formal contrast between the *mi-* and *ḫi*-conjugations is not correlated with any systematic difference in meaning. Primary verbs in 1 sg. *-(ḫ)ḫi,* like those in 1 sg. *-mi,* may be transitive or intransitive, and may denote an activity, process, or state. It is thus perfectly normal to find semantically related pairs like 3 sg. *karāpi* 'eats, frißt' (*ḫi*-conj.) beside *ēzzazzi* 'eats, ißt' (*mi*-conj.), *aki* 'dies' (*ḫi*-conj.) beside *merzi* 'disappears' (*mi*-conj.), and *dākki* 'is like, resembles' (*ḫi*-conj.) beside *ēšzi* 'is' (*mi*-conj.). Of the numerous morphologically derived (i.e. non-primary) verbal stems in Hittite, some belong to the *mi*-conjugation, while others, for no synchronically detectable reason, are *ḫi*-verbs. Thus, for example, the productively formed iteratives in *-ške/a-* (e.g. *daškizzi* 'takes repeatedly' (: *dă-*)), the causatives in *-nu-* (e.g. *arnuzi* 'brings' (: *ăr-* 'arrive')), and the 'fientives' in *-ēš(š)-* (e.g. *makkēšzi* 'becomes large' (: *mekki-* 'large')) belong to the *mi*-conjugation, while the iteratives in *-šš(a)-* (e.g. *ēššai* (OH *īššai*) 'performs' (: *ie-/iya-* 'make, do')), the factitive denominatives in *-aḫ(ḫ)-* (e.g. *šuppiyaḫḫi*

[3] In a few *ḫi* -verbs the 2 sg. pret. in *-(t)ta* and 3 sg. pret. in *-š* are replaced by *-šta* ; cf. §72. The conjugations also differ in the imperative, where the 3 sg. endings are *-(t)tu* (*mi* -conj.) and *-u* (*ḫi* -conj.). The fullest descriptive account of Hittite verbal morphology remains Oettinger 1979 (hereinafter simply 'Oettinger'), now supplemented by Oettinger 1992.

'purifies' (: *šuppi-* 'pure')), and the 'duratives' in *-anna/i-* (e.g. *iyannai* 'gets underway' (: *iya-* 'march')) follow the *ḫi*-conjugation. Clear traces of the *-mi* : *-ḫi* distinction are also found in Palaic, Cuneiform Luvian, and Hieroglyphic Luvian, showing that the organization of the verbal system into two purely formal conjugation classes was a Common Anatolian feature.[4]

§3. The origin of the *mi*-conjugation is perfectly clear. The present endings *-mi, -ši, -ẓi* go back to the PIE primary active endings *-*mi, *-*si, *-*ti*—an identity confirmed by a number of striking word equations (e.g. Hitt. 1 sg. *ēšmi* 'I am', 2 sg. *ēšši,* 3 sg. *ēšẓi* = Ved. *ásmi, ási, ásti* = Gk. ἐιμί, εἶ, ἐστί; Hitt. *ēẓẓazẓi* 'eats' = Ved. *átti* = Lat. *ēst*; Hitt. *kuenẓi* 'slays', 3 pl. *kunanẓi* = Ved. *hánti,* 3 pl. *ghnánti*; Hitt. *wēkẓi* 'demands' = Ved. *váṣṭi* = Gk. ptcp. *ἑκών*). Similarly, the preterite endings *-(n)un, -š, -t* correspond to the PIE secondary endings *-*m* (*-*m̥*),[5] *-*s,* *-*t.* It seems beyond doubt that the present of the *mi*-conjugation rests on a core of inherited active presents, the imperfects of which gave rise to the corresponding *mi*-conjugation preterites (e.g. 3 sg. *ēšta* 'was', *kuenta* 'slew', etc.). The *mi*-conjugation also includes a few inherited root aorists in *-*m, *-*s, *-*t.* Following the loss of the imperfect : aorist distinction in Proto-Anatolian, these were reinterpreted as simple 'preterites' and provided with back-formed presents in *-*mi, *-*si, *-*ti.* The clearest instance of such an aorist-based *mi*-verb is *tē-* 'say' (pres. 3 sg. *tēẓẓi* = Lyc. *tadi* 'puts'), the Hittite reflex of the PIE root aorist **dhéh$_1$-m, *-*s, *-*t* 'put' (> Ved. *ádhām,* etc.).

The plural endings, which are common to both conjugations, fit unobtru- sively into this picture. The 1 pl. in *-weni* (*-wani*)/*-wen* is ultimately cognate with the ending of the present/aorist 1 du. in Indo-Iranian (cf. Ved. *-vaḫ*/*-va*) and Balto-Slavic (Lith. *-va,* OCS *-vě*); the *n*-element is presumably the same as in Gk. 1 pl. *-μεν.* Similarly, the 2 pl. in *-(t)ten i* (*-(t)tani*)/*-(t)ten* is built around the familiar PIE present/aorist 2 pl. in *-*te* (cf. Ved. *-ta,* Gk. -τε, etc.). In the 3 pl., the present ending *-anẓi* goes back to *-*(é)nti,* the regular PIE primary ending (Ved. *-ánti, -ati,* Gk. *-εντι, *-ατι, etc.). Only in the 3 pl. preterite, where the place of the theoretically expected secondary ending *-*an* (< *-*ant* < *-*(é)nt*) is taken by *-er,* is there a departure from the normal pattern.[6] According to the usual view, *-er* is a *ḫi*-conjugation ending that was introduced into the *mi*-conjugation when the distinction between *mi-* and *ḫi*-verbs was given up in the plural.

[4] For Palaic see Carruba 1970: 45; for Cuneiform and Hieroglyphic Luvian see Morpurgo Davies 1979.

[5] The Hittite 1 sg. pret. in *-un* is most probably the regular reflex of PIE *-m̥ after consonantal stems; another, less likely, possibility is mentioned in Ch. 2, n. 70. See Melchert 1994: 181, with references.

[6] The Palaic and Luvian ending is *-(a)nta,* probably a 'morphological' reflex of PA *-(a)nt.*

§4. The *ḫi*-conjugation, on the other hand, lacks close counterparts outside Anatolian. Hrozný's ad hoc explanation of the 1 sg. in *-(ḫ)ḫi* (cf. above) is now purely of antiquarian interest; it has been clear since the early days of Hittite studies that the endings of the *ḫi*-conjugation constitute an etymologically coherent set with affinities to the endings of the PIE perfect and middle.[7]

The formal relationship of the *ḫi*-conjugation endings to those of the perfect is too obvious to require elaboration. As Kurylowicz showed in 1927, the classically reconstructed perfect endings 1 sg. *-*a* (cf. Ved. *véda* 'I know' = Gk. οἶδα), 2 sg. *-*tha* (*véttha* = οἶσθα), and 3 sg. *-*e* (*véda* = οἶδε) can be mechanically rewritten in laryngeal terms as *-*h₂e,* *-*th₂e,* and *-*e,* with the consonantism, though not the vocalism, of the Hittite endings.[8] Also significant is the similarity of the 3 pl. preterite in *-er* to the PIE 3 pl. perfect in *-*ēr,* *-*r̥* (cf. Lat. *tetigēre* < *-*ēr-i,* 'they (have) touched', YAv. *vīδarə* < *-*r̥* 'they know').

The connection between the *ḫi*-endings and the endings of the middle is less salient but no less important. The middle endings are notorious for their variability in the IE daughter languages. Thus, for example, the 1 sg. middle in the non-Anatolian branches of the family has variants both with and without *-*m-* (cf. Gk. *μαίνομαι* 'I rave' beside Ved. *mánye* 'I think', OIr *do·moiniur* 'id.'); the 2 sg. appears with both *-*s-* and *-*t(h)-* (Gk. *μαίνε[σ]αι,* Ved. *mányase,* but also Ved. imperfect *ámanyathāḥ,* OIr. *do·mointer*); the 3 sg. has variants both with and without *-*t-* (Gk. *μαίνεται,* Ved. *mányate,* OIr. *do·moinethar,* but also Ved. *śáye* 'lies' (impf. *áśaya*[*t*]), OIr. passive *·benar* 'is struck'). As pointed out independently by Kurylowicz and Stang in 1932 (see n. 7), the Hittite counterparts of these endings (1 sg. pres. *-(ḫ)ḫa, -(ḫ)ḫari,* 2 sg. *-(t)ta, -(t)tati, -(t)tari,* 3 sg. *-a, -ari, -(t)ta, -(t)tari*) in every case confirm the antiquity of the less 'active-like' member of each pair. The earliest PIE middle endings can be reconstructed in the singular as 1 sg. *-*h₂e,* 2 sg. *-*th₂e,* and 3 sg. *-*o* (beside *-*to*)—the first two identical to the corresponding perfect endings and the 3 sg. a mere apophonic variant of the 3 sg. perfect in *-*e.* In addition, there is evidence outside Anatolian for a 3 pl. middle ending *-*(ē)ro* beside *-*nto* (cf. Ved. *śére* 'they lie', impf. *áśera*[*n*]; Toch. B *stare* 'they are'), with the same *-*r-* as in the 3 pl. perfect.[9]

[7] Cf. Kurylowicz 1927: 102 f. and 1932; Stang 1932. Even before Kurylowicz's epoch-making 1927 article, the connection of the *ḫi* -conjugation endings with those of the perfect (though not the middle) was recognized by Kellogg (1925: 38).

[8] Kurylowicz's schwa notation (*$ə_1$, *$ə_2$, etc.) has been modernized. Note that where no confusion would result I write *-h_2e -, *-eh_2 -, etc. rather than *-h_2a -, *-ah_2 -, even though the phonetic coloration of [e] to [a] was surely an inner-IE process.

[9] As will be evident from this account, I see no reason to believe (with e.g. Rix (988)) that the endings *-*o* and *-(ē)*ro* originally belonged to a 'stative' category distinct from the middle proper. On the functions of these two endings, which were partly different from those of *-*to* and *-*nto* in late PIE, see the discussion in §34. Toch. B *stare* is discussed further in §35.

§5. A proper historical account of the *ḫi*-conjugation must, of course, explain the vocalism as well as the consonantism of the *ḫi*-conjugation endings. Many students of Hittite in the 1920s and 1930s assumed that the final *-i* of the endings *-(ḫ)ḫi, -(t)ti, -i* was etymologically the same as the *hic et nunc -i* (< PIE *-*i*) of the plural endings and the singular endings of the *mi*-conjugation (so e.g. Petersen 1932: 198, Sturtevant 1933: 257). Others attributed the *-i* of 1 sg. *-(ḫ)ḫi* and 2 sg. *-(t)ti* to the influence of the 3 sg. in *-i,* which was said to be a direct reflex of the PIE 3 sg. perfect in *-*e* (so e.g. Kurylowicz 1927: 103). Neither of these views is any longer tenable. The frequent appearance of the variant *-(ḫ)ḫe* for 1 sg. *-(ḫ)ḫi* in Old Hittite (e.g. *tēḫḫe* 'I put', *iyannaḫḫe* 'I proceed', etc.), together with the rare writing of *-e* for 3 sg. *-i* (cf. *waraššе* 'plucks, wipes', *mazzze* (meaning uncertain)), makes it clear that the singular *ḫi*-conjugation endings originally had *e-*, not *i*-timbre in Hittite. But of the various final vowels and diphthongs that could in principle have yielded OH *-e,* only the *i*-diphthongs *-*ai,* *-*oi,* and *-*ei* (the last of which gave *-*ē* in Proto-Anatolian) can be reconciled with the evidence of the other Anatolian languages. Specifically, only an etymological *i*-diphthong could have given the Cuneiform and Hieroglyphic Luvian *ḫi*-conjugation 3 sg. in *-i,* which appears in combination with the stem vowel *-ă-* in forms of the type CLuv. *lālai* (*lalāi*) 'takes', *mūwai* 'overpowers', HLuv. *piyai* 'gives', etc.[10] The shape of the Luvian ending makes it impossible to derive the 3 sg. of the *ḫi*-conjugation directly from the PIE 3 sg. perfect in *-*e,* since PIE and PA **e* regularly gave *a* in the Luvian languages.

It was Rosenkranz (1953) who first showed that the *ḫi*-conjugation present endings must go back to sequences containing the inherited perfect or middle endings (PA 1 sg. *-*ḫa,* 2 sg. *-*ta,* 3 sg. *-*e* or *-*o,* etc.) followed by the *hic et nunc* particle **i*.[11] Such *i*-extended endings in the perfect and middle, all relatively late, are found in a number of other IE languages, including Latin (cf. 1 sg. perf. *meminī* 'I remember' < *-*ai* < *-*a* + *i,* 3 sg. *meminit* < *-*ei*[*t*] < *-*e* + *i*), Old Church Slavonic (1 sg. *vědě* 'I know' < perf. **u̯óida* + *i*), Greek (1 sg. mid. κεῖμαι 'I lie' < *-[*m*]*a* + *i*), and Vedic Sanskrit (1, 3 sg. mid. *duhé* 'I/(s)he give(s) milk' < *-*a* + *i,* *-*o* + *i*). The presence of the *hic et nunc* **i* in the *ḫi*-conjugation present endings explains why the attested reflexes of PA 'bare' *-*ḫa* and *-*ta*—i.e. the variants *without* added **i*—have preterital value, both in Hittite (cf. *ḫi*-conj. 2 sg. pret. *-(t)ta*) and elsewhere (cf. Pal., CLuv. 1 sg. pret. *-(ḫ)ḫa,* HLuv. *-ha,* Lyc. *-χa*).[12]

[10] Here and elsewhere, my account of phonological developments closely follows Melchert 1994 (hereinafter 'Melchert'). For the final diphthongs in Hittite see Melchert 184; for Luvian cf. Melchert 265. The Palaic 3 sg. in *-ai* is presumably comparable to *-ai* in Hittite and Luvian.

[11] Rosenkranz was convinced that the underlying endings were those of the middle, not the perfect; cf. below. The diphthongal reconstruction was earlier advocated by Sturtevant (1933: 257).

[12] The preterite active endings *-*ḫa* and *-*ta* should not be confused with the Hittite present *middle* endings -(ḫ)ḫa, *-(t)ta, -a,* etc., which, as shown by Yoshida (1990: 103 ff.), have lost a final *-*r*.

§6. From a purely formal point of view, then, we can envisage the history of the *ḫi*-conjugation endings as follows:

(1) The 1 sg. in *-(ḫ)ḫi* reflects PIE *-h_2e + *i* [-$h_2$ai], which gave PA *-*ḫai* and OH *-(ḫ)ḫe* by regular sound change. The replacement of *-(ḫ)ḫe* by *-(ḫ)ḫi* was not phonological but analogical; the new vocalism *-i* was taken either from the *mi*-conjugation singular endings, or from the *mi*- and *ḫi*-conjugation plural endings (*-weni,* etc.), or from the *ḫi*-conjugation 3 sg. in *-i,* which was phonologically regular in certain environments (see below).[13] Unextended PIE *-h_2e became the PA 1 sg. pret. in *-*ḫa,* which was preserved in Luvian and Palaic. Hitt. *-(ḫ)ḫun* was altered from pre-Hitt. *-*(ḫ)ḫa* under the influence of the *mi*-conjugation ending *-un.*

(2) The 2 sg. in *-(t)ti* represents PIE *-th_2e + *i* [-th_2ai], which gave PA *-*tai* and would regularly have become *-*(t)te* in Old Hittite. *-*(t)te,* which is unattested, must have been replaced by analogical *-(t)ti* very early. In the preterite, unextended *-th_2e developed directly to Hitt. *-(t)ta.*

(3) The 3 sg. in *-i* goes back to either *-*e* + *i* (with the PIE perfect ending) or *-*o* + *i* (with the PIE middle ending). Both *-*ei* and *-*oi* would regularly have given OH *-e* after non-velar consonants—the former via PA *-*ē̯,* the latter via an inner-Hittite monophthongization. *-*ei* and *-*oi* would also have merged in secondary hiatus with a preceding vowel, giving *-i* in contracted forms of the type *dāi* 'takes' < **dóh$_3$-ei* or **dóh$_3$-oi, nāi* 'leads' < **nóiH-ei* or **nóiH-oi,* etc.[14] After velar consonants, however, the two diphthongs were treated differently. Here *-*oi* would regularly have become *-e* as elsewhere, but *-*ei* would have given *-*ḗ* in time to participate in the regular Hittite change of PA *ḗ* to *i* after *(-k)k-* (cf. *ki-* 'lie' < **ḱei-, gimmant-* 'winter' < *ĝheimn-*, etc.).[15] Other things being equal, *-*ei* permits a simpler account of the facts of Hittite than *-*oi,* since it allows a purely phonological explanation for forms like *šākki* 'knows', *aki* 'dies', *ārki* 'cuts up', etc. The appearance of *-i* after consonants other than *-(k)k-*, of course, must be analogical in any case.

Just as PIE unextended *-h_2e and *-th_2e gave the *ḫi*-conjugation preterite endings *-*(ḫ)ḫa* and *-(t)ta,* PIE unextended *-*e*/*o* might have been expected to yield a 3 sg. pret. in *-*i* or *-*a.* Neither Hittite nor any other Anatolian language, however, shows such an ending. The actual

[13] Or, of course, from more than one of these sources.

[14] Reconstructions after Melchert 177. I use **H* to stand for an indeterminate laryngeal.

[15] So Eichner 1973: 78; cf. Melchert 145 f.

ḫi-conjugation 3 sg. pret. in *-š* (*-šta*) is of wholly different origin; cf. Ch. 7.

(4) The 1 pl. and 2 pl. endings *-*wen(i),* *-*(t)ten(i),* etc. are taken from the *mi*-conjugation.

(5) The 3 pl. pres. in *-anzi* is taken from the *mi*-conjugation, replacing the theoretically expected 'true' *ḫi*-conjugation ending *-*eri* (i.e. *-er* + *i*). In the preterite, by contrast, *-er* (< PIE 3 pl. perf. *-*ēr*) not only survived, but spread to the *mi*-conjugation as well.

The recognition that *-(ḫ)ḫi, -(t)ti,* and *-i* are *i*-extended forms of the PIE perfect or (less likely) the middle endings in no way settles the question of the actual origin of the *ḫi*-conjugation. It does, however, allow us to formulate the problem more clearly. The central unexplained fact is that the forms that inflect as *ḫi*-verbs in Hittite are neither perfects nor middles in any ordinary sense, but normal present and preterite actives, functionally and semantically indistinguishable from the present and preterite actives of the *mi*-conjugation. Progress toward a genuine theory of the *ḫi*-conjugation must therefore depend on our ability to answer two related questions:

(1) How did an inherited nucleus of forms with the *ḫi*-series of endings, and therefore presumably with perfect-like or middle-like function, come to have the same range of functions as forms with the *mi*-endings?

(2) What features of Proto-Indo-European or Proto-Anatolian determined whether a given verbal stem—an iterative in *-*ske/o-*, for example, or a synonymous iterative in unextended *-*s*—would be assigned to the *mi*-conjugation or the *ḫi*-conjugation in the attested languages?

Some of the ways that these questions have been answered in the past are reviewed in the sections that follow.

§7. The majority of scholars who have taken a position on the origin of the *ḫi*-conjugation have tried to derive it from the classical PIE perfect. This view, which we will refer to as the 'perfect theory', has a history reaching back to Kurylowicz (1927) and even earlier (cf. n. 7 above). From a formal point of view it has a great deal in its favour. The perfect endings, as we have seen, allow the simplest explanation of the *ḫi*-conjugation endings. There are other points of contact between the two categories as well. It is clearly important, for instance, that the great majority of primary *ḫi*-verbs have *o*- or zero-grade root vocalism; many *ḫi*-verbs, in fact, actually display an apparent **o : zero* ablaut pattern that strongly recalls the perfect (cf. *kānki* 'hangs', pl. *kănkanzi; ari* (beside *ari*) 'arrives', pl. *ăranzi; lāki* 'knocks down, bends (tr.)', 3 sg. mid.

lăgāri 'bends (intr.)').[16] Yet suggestive as these facts are, they tell only part of the story.

Even the warmest defenders of the perfect theory implicitly acknowledge the fact that the semantic match between the *ḫi*-conjugation and the perfect is very poor. The perfect, with a few special exceptions, was a stative rather than an eventive category in the parent language. Its function was to focus attention on the state resulting from the completion of a process, rather than to comment on the process itself—a value which it still normally has in Homeric Greek and often retains in Vedic Sanskrit and elsewhere. The verbs of the *ḫi*-conjugation show no special predilection for stative semantics. With the exception of a few individual words like *dākki* 'resembles' and *šākki* 'knows'—neither of which can be shown to correspond etymologically to a perfect in any other IE language—they display the same wide range of non-stative functions as the verbs of the *mi*-conjugation.

It is a remarkable fact that this problem was not seriously addressed by any of the early scholars who accepted the identification of the *ḫi*-conjugation with the perfect. Sturtevant had little to say about the semantic side of the *ḫi*-conjugation: perfect equation in the first edition of his *Comparative Grammar* (1933). Later, when he took the matter up in the second edition of this work (Sturtevant–Hahn 1951: 132), it was only to remark inconclusively on the quasi-presential value of Gk. perf. 3 sg. τέθνηκε, glossed 'he is dead though he was once alive'. Not until 1958 was there a serious attempt to account for the functional discrepancy between the two categories. In a paper presented that year to the Eighth International Congress of Linguists, Kurylowicz called attention to the fact that the original formal structure of the perfect was best preserved in the *preterite* of the *ḫi*-conjugation, where the *hic et nunc* particle **i* was not added to the inherited endings *-*h*$_2$*e,* *-*th*$_2$*e,* etc. (cf. e.g. CLuv. *aḫa* 'I made', *awiḫa* 'I came', etc., with -*ḫa* < *-*h*$_2$*e*). He speculated that in pre-Hittite, as in Latin, Germanic, and other IE languages, the perfect first developed into a resultative preterite (**akḫa* 'I am dead, τέθνηκα' > 'I (have) died'), and that on the basis of this preterite a new present (**akḫai* > Hitt. *ākḫi* 'I die') was created by importing the present-forming particle **i* from the *mi*-conjugation. Kurylowicz's idea found little echo at the time, but it was revived some years later in independent studies by Risch (1975) and Eichner (1975). The latter treatment, in particular, is so detailed that it may be taken as the definitive exposition of the perfect theory in its modern form.

§8. Eichner's discussion of the *ḫi*-conjugation is important not only in its own right, but also for its influence on subsequent work, notably including the

[16] For the treatment of the PIE vowels in Hittite see Melchert 76 and 130–50; compare also the extended treatment in Kimball 1999: 119 ff. PIE accented **o* yielded Hitt. ā, with length often but inconsistently indicated by *scriptio plena* (<*ka-a-an-ki* >, <*a-a-ri* >, etc.).

compendious survey of the Hittite verbal system by Oettinger (1979) and its updated restatement in Oettinger 1992. The development of the *ḫi*-conjugation from the perfect, as Eichner reconstructs it, was a long and complex process. The first step was the differentiation of the stative perfect, or what remained of it in early Anatolian, into two archaic tense-forms—a present proper, which facultatively added the *hic et nunc* particle **i* to the perfect endings; and an imperfect-like preterite, which maintained the old perfect inflection unchanged. Eichner's prime example of such a 'preterito-present' is *[*se*-]*sóh₂gh₂e* 'ich bin einer Spur nachgegangen und habe in Erfahrung gebracht' > 'ich weiß' (cf. Lat. *sāgiō* 'I track down', Gk. ἡγέομαι 'I lead, think', Go. *sokjan* 'seek'). From this he derives an Anatolian present **šagg-ḫai,* whence Hitt. *šākḫi* 'I know' (cf. OCS *vědě* 'id.' < **u̯óid-ai*), and an associated preterite *šagg-ḫa,* whence **šākḫa* (> Hitt. *šākḫun,* with renewed ending) 'I knew'.

Not all PIE perfects, however, were treated in this way. The more usual Anatolian outcome of the perfect, in Eichner's view, was a new past tense, typologically comparable to the perfect-based preterite of other IE traditions. This new preterite, the 'neoperfect', was characterized by the endings **-ḫa, *-ta, *-e,* etc. and contrasted semantically with the older imperfect-based preterite in **-m, *-s, *-t.*[17] Following its emergence as an autonomous category, the neoperfect enjoyed a period of productivity, giving rise to a series of perfect-like preterites in *-ḫa* (e.g. **dai-ḫa* 'I (have) placed') built to roots which had never formed perfects in the parent language. Eventually, the difference in meaning between the two past tenses was lost, and every verb was compelled to generalize one or the other preterite formation. Verbs which favoured the preterite in **-m* also retained their presents in **-mi,* thus definitively aligning themselves with the emerging *mi*-conjugation. Verbs which generalized the preterite in **-ḫa,* on the other hand, discarded their inherited presents in **-mi* and replaced them with new presents back-formed from their preterites. The analogical proportion, prompted by an inner-systemic need to eliminate allomorphy between the two tense stems ('Zweistämmigkeit'), was of the type

(pret.) **šagg-ḫa, *-ta, *-e*: (pres.) **šagg-ḫai, *-tai, *-ei*::

(pret.) **dai-ḫa, *-ta, *-e*: (pres.) *X; X = *dai-ḫai, *-tai, *-ei.*

In this way there arose a large class of non-stative (eventive) *ḫi*-verbs, of which Hitt. *tēḫḫi* (< **daiḫḫe* < **dai-ḫai*) 'I put, place', pret. *tēḫḫun* (< **daiḫḫun* for **dai-ḫa*) can be taken as a representative example.

[17] Oettinger (89) suggests that the preterite in **-m,* which he calls 'preterite I', had the value of a general past tense, while the neoperfect ('preterite II') perhaps served 'zur Bezeichnung der Konstatierung vergangener Ereignisse'. Risch (1975: 255) believes that the preterite in **-ḫa* expressed the functions of the aorist as well as the perfect.

The final step in Eichner's scenario was the analogical spread of the new conjugation in *-(ḫ)ḫi* < *-(ḫ)ḫe* < *-ḫai* at the expense of the *mi*-conjugation. Certain groups of *mi*-verbs, according to Eichner, were naturally predisposed to change their conjugation class. Thus, notably, iterative-causatives of the type **loghéie/o-* 'lay' (cf. Hitt. 3 sg. *lāki*) were attracted to the *ḫi*-conjugation by virtue of their *o*-grade root vocalism, while nasal presents like **tṛneh₂-* 'leave' (cf. Hitt. 3 sg. *tarnai*) were reanalysed as *ḫi*-verbs on the basis of their ambiguous 1 sg. pret. in *-naḫḫun* (*-naḫḫ-un* > *-na-ḫḫun*). These and other 'tertiary' *ḫi*-verbs were relatively late creations, frequently recognizable as such by their characterized present stems.

§9. Virtually every step in this account is problematic. There is no comparative evidence at all for Eichner's initial hypothesis—that Anatolian inherited a robust core of stative perfects which distinguished a stative present in **-ḫai, *-tai, *-ei* from a stative preterite in **-ḫa, *-ta, *-e*. Eichner accepts Benveniste's comparison (1932: 140 f.) of *šākk-* 'know'[18] with Lat. *sāgiō,* etc.—an improbable etymology founded on an ad hoc sound law, as rightly noted by Melchert (69).[19] But even if the connection with *sāgiō* were problem-free, it would be just as easy in principle to derive the stative meaning of the Hittite verb from a processual present of some kind (like *sāgiō* itself) as from an otherwise wholly unsupported perfect **se-s(ó)h₂g-*.[20] That pre-Hittite, and perhaps Proto-Anatolian, had both a *ḫi*-conjugation present **šāk-ḫai* (or **sók-*) 'I know' and a *ḫi*-conjugation preterite **šāk-ḫa* 'I knew' is not itself in doubt. It requires a leap of faith, however, to take this pair as a special archaism, a 'missing link' between the *ḫi*-conjugation and the classical perfect. This is also true of Eichner's only other claimed case of a retained stative perfect in Hittite, the pair **au-ḫai* 'I see' : **au-ḫa* 'I saw' (= Hitt. *ūḫḫi* : *ūḫḫun*). Such forms clearly existed at an earlier stage of Hittite. But as with *šākk-*, there is no actual reflex of a perfect outside Anatolian; the most promising etymological connection is with Ved. *uvé* 'ich sehe an mir (?)' (Schmid 1958: 144 ff.), apparently an athematic present middle of the type seen in *duhé* 'I give milk' and *huvé* 'I call'.

[18] Here and below, I use this notation in place of the fuller but unwieldy '*śākk-/šākk-/šekk* -'.

[19] The more straightforward alternative—a connection with Latin *sciō* 'know' and thus ultimately with PIE **sekH* - 'cut'—was originally proposed by Vaillant (1942–5). So *LIV* 475.

[20] Note that the stative meaning 'think' has likewise evolved in Gk. ἤγεομαι, historically an iterative in **-ǵie/o* -. More generally, verbs meaning 'know' in IE languages are often derived from processual forms meaning 'recognize' or 'discern' rather than from perfects, e.g. Gk. *γιγνώσκω,* Toch. *kärs* - (pres. **kärs-(ä)nā* -, lit. 'cut'), Fr. *connaître* (<*cognōscere*), and Eng. *know* itself (< **ĝnēh₃-i* -). Oettinger's derivation (114) of the stem-form *šekk* -, which he reads as [sḗgg-], from a reduplicated perfect stem **se-sh₂g* - is completely unconvincing.

As in the case of other missing forms and categories in Hittite, the lack or scarcity of evidence for a residue of perfect-based 'preterito-presents' could conceivably be due to chance. But there is in fact positive reason to believe that a real PIE stative perfect, if it had been inherited into Anatolian, would specifically *not* have undergone the split into a present in *-*ḫai* and a preterite in *-*ḫa* that Eichner posits. Implicit in Eichner's account of *šāk-* is the assumption that prior to the addition of the *hic et nunc *i,* the supposed perfect *[*se*-]*sóh₂gh₂e* meant not only 'I know' but also 'I knew', and that the introduction of **i* served to disambiguate the present and past readings of the primitive form. This assumption can be shown to be incorrect for any post-IE stage of Anatolian. As will be discussed in greater detail in §§25–9, the preterite of the perfect was expressed in late PIE by a securely reconstructible pluperfect, the singular of which was formed by adding the *active* secondary endings *-*m,* *-*s,* *-*t* to the strong (i.e. normally *o*-grade) perfect stem. This inherited pluperfect is best preserved in Indo-Iranian (cf. Ved. 1 sg. perf. *véda* 'I know': plpf. *avedam* 'I knew'; 3 sg. perf. *bibhā́ya* 'fears' : plpf. *abibhet* 'feared'; etc.), but has also left clear traces in Greek and elsewhere in the family. Interestingly, one of the early IE languages that retains a reflex of the pluperfect is Hittite itself. The *ḫi*-verb *wewakk-* 'demand' (3 sg. pres. *wewakki*) forms an irregular 3 sg. pret. *wewakta* in Middle Hittite, suggesting an earlier 3 sg. perf. **u̯eu̯ók-e(i)* with 3 sg. plpf. *u̯eu̯ók-t,* exactly parallel to the Vedic perfect : pluperfect pair *bibhā́ya* : *abibhet.*[21] This verb—which incidentally presents us with our best *real* candidate for an inherited perfect in Hittite—shows that even if Eichner's derivation of pre-Hitt. 1 sg. *šāk-ḫai* from a stative perfect *[*se*-]*sóh₂g-h₂e* + *i* were correct, the corresponding preterite would probably not have been **šāk-ḫa* (or, with Eichner's phonology, **sāgg-ḫa*) < *[*se*-]*sóh₂g-h₂e,* but **šā(k)k-un* < *[*se*-]*sóh₂g-n̥*. Whatever else, the pattern pres. *-*ḫai,* *-*tai,* *-*ei* : pret. *-*ḫa,* *-*ta,* *-*e* cannot have *originated* in 'preterito-presents' of the *šāk-* type.

§10. The essence of the perfect theory resides in Eichner's claim that inherited perfects *other* than 'preterito-presents' developed into preterites in pre-Anatolian, became productive, and eventually gave rise to a series of back-formed presents in *-*ḫa,* *-*ta,* *-*e* + *i*. This scenario was discussed at considerable length in the 1970s, and firmly rejected, by the late Warren Cowgill.[22] Cowgill's critique focused on two fundamental difficulties: the typological unnaturalness of the

[21] Otherwise Oettinger (433 and 1992: 229), who improbably takes *wewakk* - from an old present **u̯éu̯oK-ti*. Cf. §26.

[22] See Cowgill 1975*a* : 567–9 and 1979: 28–32, the former written without knowledge of Eichner's (and Risch's) specific proposals. Jasanoff (1979*a* : 80–1) is also sceptical.

analogical progression **dai-ḫa* 'I put (pret.)' ⇒ **dai-ḫai* 'I put (pres.)', and the rarity of word equations linking the *ḫi*-conjugation and the perfect even when the requirement of shared stative meaning is abandoned.

As Cowgill points out (1979: 30 ff.), the morphological developments assumed by Eichner (and, *mutatis mutandis,* Risch, Kurylowicz, and Oettinger) run directly counter to tendencies observable in the other branches of Indo-European. Many IE languages—Latin and Germanic, for example—prehistorically converted the perfect to a preterite. Nowhere outside Anatolian, however, did this development entail the creation of a new series of presents built to the preterite (< perfect) stem. The existence of a 1 sg. perfect **tetaga* (whence ultimately *tetigi*) 'I (have) touched' in pre-Latin did not lead to the replacement of **tangō* 'I touch' by a new ***tetagai, **tetagō* or ***tetagmi,* nor did the existence of a 3 sg. **(bhe)bhóide* >**baite* (> Go. *bait*) 'bit' in pre-Germanic lead to the substitution of a new ***baiteþi* (> Go. ***baitiþ*) or ***baitei* (> Go. ***baiti*) for the older present **bīteþi* (> Go. *beitiþ*) 'bites'. On the contrary, the tendency throughout the IE family was for new preterites to be created to presents, or (less often) new presents to preterites, by ablaut, affixation, or suppletion.[23] The contrast between the PIE primary and secondary endings is already purely facultative in most of the early IE daughter languages. Only in Indo-Iranian and Greek, among the non-Anatolian branches of the family, does the primary : secondary distinction still serve as a non-redundant marker of tense—and even here the functional role of the secondary endings has been greatly reduced through the spread of the augment **e-* (cf. Ved. *bhárati* 'bears', impf. *ábharat,* Gk. φέρει, impf. ἔφερε).[24]

To be sure, it may be countered that Hittite *is* a language which uses the primary : secondary contrast to mark the difference between inherited presents and imperfects, and that this contrast was on occasion actually *extended* to create new back-formed presents of the type *tēzzi* 'says' from root aorists of the type *tēt* (cf. §3). But it is one thing to assume that the productive pattern **-mi* : **-m, *-si* : **-s, *-ti* : **-t* was sometimes extended to stems which inherited the second member of each pair but not the first; it is quite another to suppose that a whole *new* productive pattern was created by adding the presential **-i* to a series of forms—the

[23] Thus, the unmarked past tenses of Italic, Germanic, Celtic, Slavic, Armenian, Albanian, and Tocharian are typically elaborations of the perfect or aorist and differ significantly in stem formation from the corresponding presents. Even the 'imperfects' of these languages, where there is one, generally contain suffixal material not found in the present proper. The expansion of formations like the weak preterite in Germanic and the *s* -preterite in (Insular) Celtic testify to the drift toward more, not less 'Zweistämmigkeit' in these branches of the family.

[24] The difference between the two sets of endings also remained contrastive on a small scale in Slavic, where old thematic presents of the type OCS *vedQ* 'I lead' (2 sg. *vedeši,* 3 sg. *vedetъ*) employ historical imperfect forms in the 2 sg. and 3 sg. of the sigmatic aorist (cf. 1 sg. *vĕsъ* < **u̯ēdh-s-(o)m,* but 2, 3 sg. *vede* < **u̯edhes, -et*).

preterites in *-*ḫa,* *-*ta,* *-*e*—which under the perfect theory must already have had serviceable presents in *-*mi* beside them. This is why Eichner, who parts company from Kurylowicz and (to a lesser extent) Risch in insisting on this point, attaches such importance to the analysis of *šăkk-* as a preterito-present. A healthy nucleus of non-back-formed stative pairs like **šāk-ḫai* (pres.): **šāk-ḫa* (pret.), if such forms had really existed, would have provided a usable model for the creation of additional presents in *-*ḫai* (e.g. **dai-ḫai*) from neoperfects in *-*ḫa* (e.g. **dai-ḫa*). But apart from the distinctly unhelpful case of *wewakk-*, the absence of credible word equations linking stative *ḫi*-verbs to stative perfects is total.

§11. Even the number of *non*-stative *ḫi*-verbs that can be plausibly connected with well-established perfects outside Anatolian is unimpressive. As Cowgill notes by way of comparison (1975*a*: 564 ff.), Hittite retains a significant number of athematic active *mi*-verbs with exact cognates in the other IE languages; the equations listed in §3 can be supplemented by Hitt. *(pā)izzi* (Luv. *īti*) 'goes' = Ved. *éti* = Gk. ἔϊσι; Hitt. *šešzi* 'sleeps' = Ved. *sásti*; and Hitt. *ekuzi* 'drinks' = Toch. B *yokäṃ*. Similarly, the Hittite deponents *eša(ri)* 'sits down', *kitta(ri)* 'lies', *wēšta* 'wears', *martari* 'disappears', and *arta(ri)* 'stands' have close formal and functional counterparts in Ved. *āste* (= Gk. ἧσται), *śáye* (= Gk. κεῖται), *váste* (= Gk. ἕστο), *amṛta* (aor.) 'died', and *árta* (aor.) 'moved' (≅ Gk. aor. ὦρτο 'arose'), respectively. But the only *ḫi*-verb cited by either Cowgill or Eichner that can be unproblematically compared with a well-established perfect elsewhere is Hitt. *ăr-* 'arrive' (cf. Ved. 3 sg. *ára* (: *ṛ-* 'move, go'), Gk. ὄρωρε 'has arisen, exists')—and even here the match is purely formal, not semantic. To this Eichner adds *išp(a)i-* 'become full, eat to satiety', even though the root '**speh*$_1$-' seems to have formed only a present in the parent language (cf. Ved. *sphāyate* 'grows fat', Lith. *spė́ti* (pres. *spė́ju*) 'be capable', OCS *spěti* (pres. *spějǫ*) 'be successful', OE *spōwan* 'prosper').[25]

Other non-stative *ḫi*-verbs that have been compared with perfects—on the whole even less felicitously—include *lăk-* 'bend', *wăk-* 'bite' and *išḫ(a)i-* 'bind'. Eichner rejects the comparison of *lăk-* with the isolated Greek perfect participle λελοχυῖα 'woman in childbed' (Hesych.; cf. λέχος 'bed'), preferring to take it as a 'tertiary' *ḫi*-verb based on the iterative-causative **logheu̯e/o-*, to which it corresponds in meaning (cf. above).[26] The somewhat parallel case of

[25] Indeed, the present '**spéh$_1$-ie/o* -' is needed even for Hittite, since it was from such a form, according to Eichner (1975: 86), that **-i* - was extended to the supposed perfect stem **spe-sp(ó)h$_1$i* - (see however §66, where the root is reconstructed differently). Eichner (ibid.) further cites *ăk(k)* - 'die' as a perfect-derived *ḫi* -verb that goes back to a perfect, but he gives no basis for this view.

[26] So too, in 1979, Oettinger 425; in 1992, however, he considers the possibility of an otherwise unknown present type **lógh-ti* (230). For the identification of *lăk* - as a perfect, which goes back to the early days of Hittite studies, see Tischler, *HEG* (henceforth 'Tischler'), s.v.

wăk-, which Risch (1975: 253) compares with the Greek stative perfect ἔᾱγε < **ʔέʔᾱγε* 'is broken' (pres. ἄγνυμι < *ʔάγνυμι 'I break') is not mentioned at all by Eichner, and is dismissed by Oettinger, who takes the *-kk-* of the Middle Hittite spelling 3 pl. *wakkanzi* as evidence for a root-final voiceless stop (445 f., note 113).[27] The oft-cited comparison of *išḫ(a)i-* with Ved. *siṣāya* and GAv. *hišāiiā* 'holds bound' (Sturtevant (1933: 246–8 *et passim*)) is questioned by Cowgill (1975*a*: 567) and rejected outright by Oettinger (461), who regards IIr. **siš̯āia* as a replacement of earlier **sasā(u)* < **se-sh$_2$óh$_1$-e* or **se-sóh$_2$-e*.[28] As the hesitation and uncertainty surrounding these forms suggests, their probative value for the perfect theory is virtually nil.

§12. Cowgill's criticisms do not exhaust the list of problems with the *ḫi*-conjugation : perfect identification. Even if the derivation of Hitt. *šăkk-*, *ăr-*, etc. from perfects were entirely straightforward, the Eichner–Risch– Kurylowicz model would be unable to tell us why certain groups of inherited presents and aorists were consistently transformed into *ḫi*-verbs while others retained their earlier *mi*-inflection (cf. §6). As we have seen, there is no obvious principle behind the Common Anatolian assignment of the iteratives in *-šš(a)-* (type *išš(a)-*, etc.; cf. also HLuv. 3 sg. *pipasai* 'gives repeatedly') to the *ḫi*-conjugation, or behind the consistent and opposite assignment of the iteratives in *-ške/a-* (*daške-*, etc.) to the *mi*-conjugation. Nor is it clear why the factitives in *-aḫ(ḫ)-* (*šuppiyaḫ(ḫ)-*, etc.) should have joined the *ḫi*-conjugation while the nearly synonymous causatives and factitives in *-nu-* (e.g. *tepnu-* 'make small' (: *tepu-* 'small')) remained *mi*-verbs. Eichner's ad hoc explanation of the 'tertiary' types *lăk-* and *tarna-* (cf. §8) will not stand scrutiny. His claim that iterative-causatives of the type **logh-ḗie/o-* were induced by their *o*-vocalism to become athematic, ablauting *ḫi*-verbs is literally incredible,[29] and falsified, *inter alia,* by his own brilliant derivation (1969: 31 ff.) of the *mi*-conjugation verb *waššezzi* 'clothes' from PIE **u̯os-éie/o-* 'wear, put on' (: Gmc. **waz̯jan,* NE *wear*).[30] As for the verbs

[27] The *wāki* : ἔᾱγε equation is also supported by Hollifield (1977: 193).

[28] In his later discussion of the problem, Oettinger (1992: 235) is better disposed to the *išḫāi : siṣāya* equation. For the reconstruction of the root as **sh$_2$eh$_1$* - or **seh$_2$* - see §58, with note 7.

[29] I know of no other case in an IE language in which the root vocalism of a morphological class was sufficient to trigger a wholesale switch in inflection and stem structure. The change of **logh-ḗie/o* -, a thematic stem with a 'heavy' suffix and no paradigmatic ablaut, into a suffixless ablauting *ḫi* -verb would have been comparable e.g. to the replacement of the Germanic weak verb **lagjan* 'lay' by a preterito-present **lag* : **lēgun* (or **lugun*). Even under the step-by-step scenario presented by Oettinger (1992: 229 ff.), it is simply beyond belief that so bizarre a remodelling of a large and productive class could have taken place in the Proto-Anatolian of the third millennium BC .

[30] For the phonology see Melchert 1984: 31 ff. and 1994: 176. The other striking example of a preserved iterative-causative in Hittite is *lukkizzi* 'sets on fire', correctly compared by Watkins (1971: 68 f.) with Ved. *rocáyati* 'causes to shine' and Latin *lūceō* in its rare transitive sense of 'ignite, light'. Oettinger's derivation of this form from a simple thematic present **léuketi* (277, following Hoffmann 1968*a*) is flawed on both phonological and morphological grounds. Phonologically, it is unsatisfactory because medial **-kk* - should have been lenited to **-k* - in Anatolian after an accented diphthong, giving Hitt. **lūkizzi.* Morphologically, it fails because the putatively cognate present in Indo-Iranian is deponent and intransitive (Ved. *rócate* 'shines').

in -*na*-, the supposed reinterpretation of 1 sg. pret. **tarnaḫḫ-un* as **tarna-ḫḫun* could only have taken place after the specifically Hittite remodelling of the ending *-*ḫa* to -*(ḫ)ḫun*. But forms like Luv. 3 sg. *ḫallinai* 'hurts' and the possible Palaic 3 sg. *šapawinai* 'purifies'(?) suggest that the *ḫi*-conjugation inflection of the type *tarna*- was a Proto-Anatolian, rather than a purely Hittite, feature.[31] There was no resegmentation of the stem-final laryngeal in the factitives in -*aḫ(ḫ)*-, or in *mi*-verbs like *tarḫ*- 'conquer', *weḫ*- 'turn' and *walḫ*- 'strike'.

A useful perspective on the perfect theory is furnished by the treatment of the PIE active root presents in Hittite. Anatolian, as we have seen, inherited seven roots that formed such presents in the parent language: **h₁es*- 'be', **h₁ed*- 'eat', **h₁ei*- 'go', **h₁egʷh*- 'drink', **gʷhen*- 'slay', **ses*- 'sleep', and **u̯eḱ*- 'wish'. If the perfect, or a perfect-based preterite, had been as productive as Eichner *et al.* assume, some of these might have been expected to develop new preterites of the type **āšḫa* (or **ešḫa*), **kuānḫa* (or **kuenḫa*), etc. in pre-Hittite, and thence to acquire *ḫi*-conjugation presents **āšḫi* (**ešḫi*), **kuānḫi* (**kuenḫi*), etc. In fact, nothing of the kind ever happened; the attested forms are all unaltered *mi*-verbs (*ēšmi, kuemi,* etc.). Some morphological property of these seven words must have been responsible for their stable membership in the *mi*-conjugation—a property evidently shared by the presents in *-*n(e)u*- and *-*ske/o*-, but not by the antecedents of the presents in -*šš(a)*- and -*aḫ(ḫ)*-. What could this property have been? The task of identifying the forces at work in the assignment of individual stem-types to the one conjugation or the other seems utterly beyond the reach of the perfect theory.

§13. We can end this phase of our discussion with an obvious but rarely discussed formal point. With the single exception of the stem **u̯(ó)id*- 'know', the perfect was reduplicated in PIE; the overwhelming majority of *ḫi*-verbs are not.[32] This stark disagreement between the two categories has traditionally

[31] Luv. *ḫallina* -, as Craig Melchert points out to me (p.c.), is probably of denominative origin and hence not directly comparable with Hitt. *tarna* -. Its absorption into the *ḫi* -conjugation, however, points to the influence of an inherited core of real *tarna* -type presents.

[32] The strong stem *ar* - 'arrive', which Eichner (1973: 54) takes from a reduplicated stem **h₁e-h₁or* -, is in fact wholly ambiguous. The reduplication of the perfect is sometimes said to have been optional or 'facultative' in PIE, but even if this were true (which is extremely doubtful; see especially §97 and, for **u̯(ó)id* -, App. 2), the difference between Hittite/Anatolian and the other early IE languages would need to be explained.

been dismissed as secondary, and by implication inconsequential, by scholars favourable to the *ḫi*-conjugation : perfect equation. Even Cowgill, hardly a supporter of the perfect theory, makes no mention of reduplication in his critique of the Eichner–Risch–Kurylowicz model.[33] Yet the nearly complete loss of reduplication in the perfect in Anatolian would not have been a trivial occurrence. Most of the other IE branches that retain the perfect as a finite tense—Indo-Iranian, Greek, and even Italic and Celtic—also maintain reduplication in the perfect with considerable regularity.[34] The only real exception is Germanic, where strong verbs of the 'normal' ablaut types (classes I–VI) have given up reduplication in the preterite completely (cf. Go. *beitan,* pret. *bait* < **(bhe)bhóide; niman* 'take', pret. *nam* < **(ne)nóme*; etc.). Anatolian, of course, could simply have done the same, suppressing reduplication throughout the nascent *ḫi*-conjugation. But the parallel between the two branches cannot be pressed too far. Late Proto-Germanic was spoken a few centuries before the beginning of the Christian era, a full two thousand years later than Proto-Anatolian. Nowhere among the 'classical' IE dialects was the perfect stripped of its reduplication with greater consistency than here; yet even here the tenacity of reduplication in the perfect is shown by the survival of nearly two dozen reduplicating strong verbs in Gothic alone (e.g. *letan* 'let', pret. *lailot; haitan* 'order', pret. *haihait,* etc.). If the *ḫi*-conjugation in fact grew out of the perfect, it would have to have given up its reduplication with a precocity unmatched in any other IE language.[35]

§14. The perfect theory is fully compatible with the classical PIE verbal system—the system which the Neogrammarians, lacking any knowledge of Hittite, reconstructed on the basis of Indo-Iranian, Greek, and the other

[33] He does discuss reduplication in connection with his own theory; see below.

[34] In Latin in particular, the loss of reduplication in the perfect was a late and sporadic process, closely linked to the presence or absence of a preverb (cf. e.g. OLat. *tetulī* 'I carried' beside *intulī,contulī,* etc.). The case of *(g)nōuī* 'I know', which otherwise matches Ved. *jajñáu,* is special. This verb is the only 'primary' *u*-perfect in Latin that goes back to an actual perfect; all the rest (*flāuī, -plēuī, strāuī,* etc.) are transformed root aorists that were never reduplicated at any time in their history. It was probably under the influence of these and other long-vowel 'perfects' of non-perfect origin (*uēnī, lēgī, tēgī,* etc.) that *(g)nōuī* was assimilated to the normal pattern.Two branches of the family in which the finite forms of the perfect have disappeared retain substantial traces of the perfect participle. Tocharian preserves many reduplicated forms of the type B *tetriku* 'confused', *kakautau* 'hewn', etc., with the etymological suffix **-u̯os-/-us-*. This morpheme was later also added to preterite stems of other types, giving rise to a second stratum of participles (e.g. *kärsau* 'known', *pälkau* 'seen') which were never reduplicated. **-u̯os-/-us-* was likewise productive in Balto-Slavic, but here the process went further: in descriptive terms, **-us-* is nothing more than a paradigmatic alternant of **-ent-* in a participle synchronically based on the infinitive or aorist stem (cf. Lith. *vẽdęs* 'having led', gen. *vẽdusio* = OCS *vedъša*). To say that such forms have 'lost' their reduplication would be quite inaccurate; they never had it.

[35] The stem *wewakk* -, of course, suggests that this is *not* what happened; cf. §9.

non-Anatolian languages. Herein lies its appeal: no traditional assumptions about the parent language have to be re-examined, no comparative grammars of Greek and Sanskrit have to be rewritten. But the 'comfortable old shoe' character of the perfect theory, though in itself a virtue, is only part of the picture. Against it must be set the almost surreal complexity of the developments that have to be attributed to Anatolian itself. Within the two millennia or so that separate dialectal Indo-European, a language of *c.* 4000 BC, from late Proto-Anatolian, the PIE perfect must be supposed, among other things, to have

(1) developed into a resultative preterite in 1 sg. *-*ḫa*;
(2) lost its reduplication;
(3) spawned a productive series of back-formed presents in *-*ḫai,* with or without analogical help from a purported preterito-present class; and
(4) spread, in its new guise, to an apparently arbitrary selection of inherited present stems.

Paradoxically, while this remarkable evolution was taking place, the nucleus of inherited forms that had served to set the whole process in motion was almost completely lost through lexical or morphological replacement. What finally emerged was the *ḫi*-conjugation as we know it: a large and varied form class with perfect-like endings and a healthy representation of *o*-grade roots, but no semantic ties to the perfect and few or no forms clearly traceable to perfects.

It is hardly surprising that this scenario has not met with universal approval. Sceptics have legitimately wondered whether the advantages of a basically nineteenth-century model of the PIE verbal system are sufficient to justify the chronological improbabilities, the typological anomalies, and the implausible coincidences to which the perfect theory is heir.

§15. A curious pendant to the perfect theory is the account of the *ḫi*-conjugation offered by Cowgill (1979: 33–9). Cowgill's verdict (cf. above) that the *ḫi*-conjugation could not have been *derived* from the perfect did not lead him to abandon the perfect : *ḫi*-conjugation equation as such. His own treatment starts from the premise that although the *ḫi*-conjugation cannot be a reflex of the PIE perfect in its classical form, the two categories must nevertheless go back to a common source. Finding no satisfactory evidence for the perfect in Anatolian, Cowgill concludes that the perfect as we know it had not yet come into existence at the time of the separation of Anatolian from the other languages. He therefore takes a frankly Indo-Hittite position, treating Anatolian as a sister to 'Indo-European Proper' (IEP). The Proto-Indo-Hittite (PIH) verbal system, he suggests, contained two kinds of forms, 'verbs proper', characterized by the familiar primary and secondary endings, active and middle, and 'nominal

verbs', which stood outside the regular system of tense and voice contrasts. Nominal verbs were based on a 3 sg. form of nominal origin (e.g. **dhóh$_1$-e* 'is a placer'); they had reduplicated counterparts, presumably originally iterative, which were specialized in a stative function in IEP and became the source of the classical perfect. The latter development, in his view, did not affect Anatolian, where the history of the verbal system took a quite different turn.

According to Cowgill, the aspectual system of Proto-Indo-European Proper (PIEP), in which imperfective (present) and perfective (aorist) stems were grammatically opposed, did not yet exist in PIH, but evolved separately in Anatolian and IEP. Both Anatolian and IEP assigned the basic root paradigm of originally 'telic' (i.e. terminative) verbs to the emergent aorist category: a verb like **dhéh$_1$-ti* 'places', pret. **dhéh$_1$-t,* thus became the PIEP and early Proto-Anatolian root aorist **dhéh$_1$-t* 'placed'. The ways in which such aorists were provided with new imperfectives, however, were different in the two major divisions of the family. While in PIEP the normal procedure was to take originally iterative, durative, or otherwise marked stems and allow their specific meaning to 'bleach' or erode (e.g. **dhé-dheh$_1$-ti* 'places' < 'places repeatedly'), in Proto-Anatolian new presents were supplied to telic roots by employing nominal verbs in the same role (**dhóh$_1$-e* 'places' < 'is a placer'). Anatolian later abandoned the present : aorist opposition altogether and generalized the present stem everywhere, thus creating a system in which originally imperfective, or atelic, verbs inflected according to the *mi*-conjugation, while originally telic verbs followed the *ḫi*-conjugation.

This scheme has several attractive features. From a typological point of view, the claimed evolution of nominal forms into statives in IEP and into ordinary presents and preterites in Anatolian has much to recommend it. A Semitic parallel, as Cowgill points out, is at hand in the Akkadian 'permansive' and the Hebrew and Arabic non-stative 'perfect', both of which are of nominal origin. The fact that a relatively large number of *ḫi*-verbs are built to roots which elsewhere form root aorists, and were thus presumably telic in the parent language (e.g. *ăr-*, *dă-*, *lăk-*, etc.), finds a straightforward explanation in Cowgill's system. So too does the fact that certain present-forming suffixes, such as **-ske/o-* and **-n(é)u-*, seem not to have lost their lexical meaning in Hittite as readily as in other branches of the family. Proto-Anatolian, in Cowgill's view, never needed to 'demote' these elements to the role of mere tense-aspect markers, having created the *ḫi*-conjugation instead.

§16. Nevertheless, the foundations of Cowgill's theory are inadequate to support so elaborate a structure. The all-important assertion that the PIE present : aorist opposition never existed in Anatolian is extremely doubtful. Hittite has clear

cognates of PIE root aorists (e.g. *tḗzzi,martari,artari*), which in Cowgill's scheme should have been replaced by nominal verbs long before the breakup of Proto-Anatolian.[36] Furthermore, the *ḫi*-conjugation 3 sg. preterite in *-š* (*-šta*) is almost certainly connected with the sigmatic aorist of the other IE languages (cf. Ch. 7); yet the sigmatic aorist, under Cowgill's *interpretatio indo-hethitica,* ought to go back to the telic preterite of a telic *s*-present, neither of which should have survived into Hittite.[37] Strong evidence against Cowgill's model comes from the cases in which a single Hittite verb is attested with two stems, one corresponding to an IE present and the other to an aorist. Thus, for example, Hitt. *tarḫuzzi* (*taruḫzi*) 'overcomes, is able' beside *tarḫzi* 'id.' seems to point to an original *u*-present **t(e)rh₂-u-* (cf. Ved. *tarute* 'conquers') beside a root aorist **t(e)rh₂-*, as correctly seen by Oettinger (220–3). Similarly, the pair *parkiya-* : *park-* 'rise' (root **bhergʰ-*) recalls the Vedic (and PIE) pattern *mányate* 'thinks' : aor. *amata* (GAv. *maṇtā*), *mriyáte* 'dies' : aor. *amṛta,* etc.; note also *karpiye/a-* : *karp-* 'lift', *karaššiye/a-* : *karaš-* 'cut', etc. According to Melchert (1997), some pairs of the latter type, both in Hittite and in Luvian, show the remains of a synchronic distribution in which the stem in **-ie/o-* was confined to the present indicative while the shorter stem was used in the preterite and imperative. If confirmed by further philological research, this pattern would virtually guarantee the existence of the standard PIE aspectual system for some stage of Proto-Anatolian.

Cowgill rightly criticizes the perfect theory on the grounds that a language which created the *ḫi*-conjugation on the basis of the perfect ought to have preserved clearer traces of the PIE forms that initially set the process in motion. He takes an unwarranted step, however, in drawing the further conclusion that the perfect never existed in Anatolian at all. There is a third possibility—that the perfect was inherited into Anatolian on a small scale *without* playing any special role in the creation of the *ḫi*-conjugation. This is not merely a logical quibble. We have already met (§9) the *ḫi*-conjugation stem *wewakk-*, which in meaning ('demand' < *'wish') and formal structure resembles nothing so

[36] These are presumably among the forms to which Cowgill refers when he says (1979: 37), '…I suspect that we are dealing not with anomalous preservation of the perfective aspect, but with a reassignment of aspect or a lexical shift entailing reassignment of Aktionsart in one branch or the other, comparable to what must be assumed for Sanskrit aorist *ájījanat* vs. Avestan present (3rd. pl.) *zīzanəṇti,* or the aorist value of the *-éx̂-/-x̂* suffix [i.e. **-éh₁ -/*-h₁* -] in Greek…versus its stative present value elsewhere'. Perhaps; but all this is special pleading that would not be needed under a standard model of the pre-Anatolian tense-aspect system.

[37] Cowgill (39) ignores the common identification of the 3 sg. pret. in *-š* with the **-s* - of the sigmatic aorist, suggesting that the proper comparandum may rather be the final -š of the peculiar Gathic Avestan 3 pl. form *cikōitərəš* '(they) appear(ed)'. But GAv . *-ərəš* (< IIr. **-ṛš*) can be shown to be a unitary ending with no internal morpheme boundary (see §24), and the restriction of *-š* to the 3 sg. in Hittite has a striking parallel in the *s* -preterite of Tocharian (§§101 ff.). *cikōitərəš* is discussed in §28.

much as a canonical IE perfect with *o*-grade, reduplication, and the perfect endings. The retained reduplication and irregular preterite of this verb make it an unsuitable point of departure for explaining the *ḫi*-conjugation as a whole; indeed, *wewakk-* may well be a perfect that does more to set back the perfect theory than to advance it.[38] But so long as it is interpretable as a perfect at all, it stands as a direct challenge to Cowgill's claim that the perfect was an innovation of Indo-European Proper.[39]

Some of the defects of Cowgill's theory, of course, are simply carried over from the perfect theory in its more traditional form. Since Cowgill too accepts the ultimate identity of the *ḫi*-conjugation and the perfect, he is no better able than Eichner and Risch to explain the *ḫi*-inflection of the verbs in *-aḫ(ḫ)-*, *-šš(a)-* and *-anna/i-*, which cannot originally have had anything to do with the perfect or with 'nominal verbs'.[40] A more fundamental weakness of the nominal verbs theory is its ad hoc and stipulative reliance on an overtly Indo-Hittite model. Many, perhaps most, Indo-Europeanists would be prepared to admit that Anatolian was the first IE branch to separate from the rest of the family; a mild form of the Indo-Hittite theory is no longer the revolutionary proposal it was fifty years ago.[41] Cowgill, however, opts for a 'strong' version of the theory—one that allows such wide latitude for speculation about the prehistory of 'Indo-European Proper' that it runs a serious risk of circularity. Having reconstructed a PIH category—nominal verbs—for which there is not the slightest direct evidence in either IEP or Anatolian,[42] he proceeds to

(1) situate the creation of the classical present : aorist opposition in IEP rather than IH, thus excluding Anatolian from the process;

[38] Although the possibility of taking *wewakk-* as the perfect corresponding to *wēkʷi, ʋáṣṭi,* etc. is obvious, neither Cowgill nor the advocates of the perfect theory have been eager to embrace this analysis. Eichner (1973: 81) takes *wewakk-* from a PIE reduplicated aorist; Oettinger (432 ff. and 1992: 229) makes it a reduplicated present.

[39] The case of *mēma/i-* 'say', another reduplicated *ḫi-*verb that can be argued to go back to a perfect, is discussed in §71.

[40] Cowgill (38) considers the possibility that some of the *ḫi-*conjugation suffixes, such as the 'factitive' *-aḫ(ḫ)-*, were inherently telic in PIH. Stems made with these suffixes would initially have yielded perfective forms—incipient aorists—in early Proto-Anatolian, and the *ḫi-*verbs attested in Hittite would then represent the regular imperfectives created in Anatolian to serve as the presents to these aorists. As Cowgill notes, however, an explanation of this kind would fail to account for the iteratives in *-šš(a)-* or the duratives in *-anna/i-*, both of which have extremely atelic meanings.

[41] I make no distinction here among those who use the old but slightly tendentious term 'Indo-Hittite', those who prefer to speak of 'Early Indo-European' or 'Frühindogermanisch', and those who eschew new terminology but who envisage an early separation of Proto-Anatolian from the rest of the family. For my own, generally 'weak' Indo-Hittite views see §120 and *passim* below.

[42] The idea that the PIE perfect was originally a noun or adjective is an old one, going back at least as far as Brugmann; see the references in Szemerényi 1996: 333 ff., where a fairly typical discussion is provided. Underlying the 'nominal' theory of the PIE perfect is the assumption, not always made explicit, that **-o-* in PIE was the vocalism *par excellence* of nominal stems, and that the appearance of **-o-* in a verbal category is an anomaly that somehow needs to be explained. (For the same reason, the Indo-Iranian aorist 'passive' in *-i* (e.g. Ved. ɛśrávi, GAv . *srāuuī* 'was heard', apparently < **ḱlóu̯-i*) is also often said to go back to a noun; cf. §89.) This preconception about the original role of *o* -grade, however, is no longer even weakly tenable. The dramatic morphological discoveries of the past few decades have shown that the workings of the PIE ablaut system were much more complex than previously believed, and that the alternation patterns proper to nominal and verbal stems were fundamentally the same. Cowgill's comparison (1979: 39) of the 3 sg. in **-e* with the thematic vowel of forms like Gk. *τόμός* 'cutting', *πομός* 'escort', etc. is likewise not compelling.

(2) posit the creation of a *separate* imperfective : perfective opposition in Anatolian alone; and
(3) do away with the new aspectual system in Anatolian after the end of its theory-internal usefulness.

The sheer complexity of this account, and its dependence on fine points of timing that cannot be independently motivated, are compelling arguments against it.

§17. A number of other attempts to explain the *ḫi*-conjugation, all more or less schematic, take the middle rather than the perfect as their starting point. As we have seen above, the reconstruction of the *ḫi*-endings with a final diphthong (*-*ḫai,* etc.) goes back to Rosenkranz (1953). Unlike Eichner, Risch, and even Cowgill, however, Rosenkranz connects the *ḫi*-conjugation with the middle. Rejecting the equation with the perfect on the usual functional grounds, he bases his own approach on the fact that many *ḫi*-verbs—more than half by his count—correspond in sense to verbs that inflect as middles elsewhere in the family, e.g. *ăḱ(ḱ)-* 'die': Lat. *morior; au(š)-* 'see' : Gk. δἐρκομαι; *Paḫš-* 'protect' : Lat. *tueor,* etc. The problem, of course, is that Anatolian already *has* a middle, which contrasts with the active in both *ḫi*-and *mi*-verbs. Rosenkranz therefore seeks to distinguish two varieties of present middle in pre-Hittite—one an oppositional mediopassive with '*r*-endings' directly ancestral to Hitt. 1 sg. *-(ḫ)ḫa(ri),* 2 sg. *-(t)tati, -(t)ta(ri),* 3 sg. *-a(ri), -(t)ta(ri),* etc., and the other a deponent type in *-*ḫa* + *i,* *-*ta* + *i,* *-*a* + *i,* which gave rise to the *ḫi*-conjugation. Phonologically, this analysis of the *ḫi*-endings is close to Eichner's; the only formal difference between the two, at least in the singular, is in the third person, where Eichner's *-*ei* presupposes the *-*e* of the perfect while Rosenkranz's *-*ai* contains the *-*o* of the middle.[43]

[43] In the plural, of course, the perfect and the middle endings were quite distinct, and the plural *ḫi* -conjugation endings are decidedly closer to those of the perfect than those of the middle. But a defender of Rosenkranz's position would doubtless reply that all the plural endings of the *ḫi* -conjugation, with the exception of the 3 pl. pret. in *-er,* were borrowed from the *mi* -conjugation.

The claim that *-*oi* could have given the *ḫi*-conjugation 3 sg. in -*i* has, to be sure, been contested. Some scholars (e.g. Puhvel 1970: 633, Cowgill 1975*a*: 566) have held that the extreme rarity of -*e* as a variant of -*i* in Old Hittite proves that the 3 sg. ending, unlike the 1 sg. in -*(ḫ)ḫi*/-*(ḫ)ḫe* < *-*ḫai,* goes back to a preform in *-*ei.* As we have seen, however, both *-*oi* and *-*ei* would probably have given OH -*e* in most environments; the consistency with which -*i* marks the 3 sg. in *ḫi*-verbs of all stem-types must be secondary. The 'advantage' of *-*ei* over *-*oi* lies simply in the fact that PIE **ei* yielded *i* after velar consonants as well as in hiatus, so that setting up *-*ei* in the 3 sg. would make it possible to derive forms of the type *šākki,* as well as forms of the type *dāi,* without recourse to analogy. Starting from *-*ei* would also help explain why the replacement of -*(ḫ)ḫe* by -*(ḫ)ḫi* in the 1 sg. lagged markedly behind the change from -*e* to -*i* in the 3 sg., even in non-contracted forms: in the 1 sg. the development would have been wholly analogical, in the 3 sg. only partly so.

The real objections to Rosenkranz's view are not phonological but morphological. The *o*-vocalism and perfect-like ablaut of many primary *ḫi*-verbs are not explainable on the basis of any ordinary PIE middle paradigm. Likewise, the 3 pl. preterite in -*er,* which must have originated in the *ḫi*-conjugation, suggests a connection with the perfect rather than the middle. Above all, however, the claim that deponents were originally marked by the *r*-less endings *-*ḫai,* *-*tai,* and *-*ai,* while oppositional middles and passives took the endings *-*ḫar(i),* *-*tar(i),* and *-*(t)ar(i)* (< PIE *-*h_2e-r,* *-*th_2e-r,* *-*(t)o-r*), is flatly contradicted by the comparative evidence. The familiar Hittite verbs *eš*- 'sit down', *ki*- 'lie', *wēšš*- 'wear', *mar*- 'disappear', and *ar*- 'stand' all correspond to roots which formed deponent presents or aorists in the parent language (cf. §11); yet all inflect as ordinary middles rather than as active *ḫi*-verbs. In the face of such facts, it is hard to see how a direct connection between the classical middle and the *ḫi*-conjugation can be maintained.[44]

§18. A similar but more convoluted theory was proposed by Kurylowicz in 1979. Rejecting Eichner's (and his own earlier) theory on semantic and typological grounds, Kurylowicz eventually came to see the *ḫi*-conjugation as a distinctively Hittite innovation based on the middle. In his last publication on the subject, he traces the nucleus of the *ḫi*-conjugation to a class of deponents which failed to replace the archaic ending *-*o* by *-*to* in the 3 sg. To these middles, he suggests, it

[44] Note further that Rosenkranz's attractive-looking equation of Hitt. *ūḫḫi* 'I see' and Ved. *uvé* (1958: 68) is an illusion. The Vedic form has an unambiguous zero grade, while *ūḫḫi* (as seen also by Eichner; cf. §9) stands for older **au-ḫai* (cf. 2 sg. *autti,* 3 sg. *aušzi,* 1 pl. pret. *aumen,* etc.), with the same monophthongization before *-*ḫ* - as in *tēḫḫi* 'I put' beside 2 sg. *daitti,* 1 pl. pret. *daiwen,* etc.

was occasionally necessary to provide contrasting actives, just as, for instance, in Greek, deponents like ἥδομαι 'I take pleasure' and ψεύδομαι 'I lie' were secondarily equipped with actives of the type ἥδω 'I delight' and ψεύδω 'I cheat'. The formal mechanism for creating such actives in Anatolian, according to Kurylowicz, was the addition of the particle **i,* already in use as a mark of the present active in the *mi*-conjugation, to the basic (i.e. *r*-less) endings of the middle. There thus arose a series of actives in **-ḫai, *-tai,* and **-ai*—forms which, although originally transitive and/or causative like ἥδω and ψεύδω, subsequently came to have a wider range of functions.

Kurylowicz does not, however, provide an explanation for why the addition of the diathetically neutral *hic et nunc* particle to a series of middles in **-ḫa, *-ta, *-a* should have yielded a series of oppositional *actives* in **-ḫai, *-tai, *-ai.*[45] Nor does he cite any individual verbs that might lend independent support to his scenario. As typical primary members of the *ḫi*-conjugation he mentions *šăkk-*, *ăk(k)-*, *wăk-*, *ăr-*, and *ašăš-/ašeš-* 'settle', but unlike Gk. ἥδω and ψεύδω, not one of these has a well-developed middle in Hittite from which an active could have been back-formed. In fact, in the majority of instances where an Anatolian verb can be shown to go back to an old deponent in **-o(r)* there are no active forms at all.[46] A genuine example of an inherited middle in **-o(r)* with a transitive *ḫi*-conjugation active beside it is *lagāri* 'bends (intr.)' (: act. *lāki*), which recalls the Greek root aorist λέκτο 'lay down' and presumably goes back directly or indirectly to a PIE deponent 3 sg. **lgh-ó* or **légh-o.* But neither **lgh-ó* + *i* nor **légh-o* + *i* could have yielded the *ḫi*-conjugation active *lāki,* with a *scriptio plena* (<*la-a-ki*>) that points to an accented, and for Kurylowicz unexplainable, *o*-grade.[47] Here and more generally, the presence of paradigmatic ablaut in the *ḫi*-conjugation is a fatal stumbling block to the 'middle theory'.

§19. Elements of the perfect theory, the middle theory, and the Indo-Hittite theory are combined in the basically similar treatments of the *ḫi*-conjugation offered by Meid and Neu (cf. Neu 1968: 123–60, Meid 1974: 35 ff., Meid

[45] This is not a trivial point; no such change of voice occurred when **-i* was added to the inherited middle endings in **-r,* giving rise to the familiar Hittite present middle endings *-(ḫ)ḫari, -(t)tari, -ari,* etc.

[46] The two most straightforward cases of inherited deponents in **-o(r)* in Anatolian are *eša(ri)* 'sits' and Luv. *zīyar , zīyari* (: Hitt. *kitta(ri)* for **kiya(ri)* ~ 'lies' ((infinity) Ved. ɛsáye ; cf. Melchert 1987: 195 f., Morpurgo Davies and Hawkins 1988: 177 f.)—both, of course, still *media tantum.*

[47] Kurylowicz's view (145) that *o* - and zero-grade fell together in Hittite is no longer tenable. Independent evidence for the ablaut difference between active and middle in the *ḫi* -conjugation can be seen e.g. in pairs of the type 3 sg. act. *ḫalzai* 'calls': mid. *ḫalziya(ri).*

1975: 215–17, Neu 1976: 248–50, Meid 1979: 173 ff.).[48] According to Meid's 1979 summary, the *ḫi*-conjugation was a sister category to the classical IE middle and perfect, all three going back to an Early IE ('frühindogermanisch') category which he denotes simply as 'Medium'. This undifferentiated proto- middle—Neu's 'Medio-Perfekt'—was subject over time to two formal renovations: (1) the introduction of a distinction between primary and secondary endings, the former being marked by the particle **i*; and (2) the introduction of endings containing **-t-* (**-to, *-toi,* etc.) in the third person. Each of these developments led to a two-way categorial split. Reflexes of the primitive 'Medium' that escaped both renewals survived as PIE perfects of the classical type, which, according to Meid, made no distinction between present and preterite/injunctive in the parent language. At the other extreme, reflexes of the 'Medium' that underwent both renewals became ordinary, productively formed middles. Intermediate between the two were forms that underwent the first renewal but not the second. These were reduced to a few remnants in most branches of the family, but preserved in a functionally attenuated role as *ḫi*-verbs in Anatolian. The *ḫi*-conjugation thus represents, in Meid's view, a kind of denatured or 'demedialized' middle—a way station, as it were, between the perfect and the middle proper.

Neu likewise sees the *ḫi*-conjugation as a middle *déclassé*. But unlike Meid, who links the split between the nascent *ḫi*-conjugation and the classical middle to the introduction of *t*-endings in the third person, Neu considers the central event in the separation of the two categories to have been the substitution of **-r* for **-i* in the primary endings of the 'true' middle. This departure from Meid's scheme makes it easier for Neu to explain the contrast between the *ḫi*-conjugation and the middle outside the third person (as e.g. in pre-Hitt. 1 sg. **-ḫai* (*ḫi*-conj.) vs. **-ḫar* (mid.)); it also accommodates the fact, somewhat problematic for Meid, that Hittite has dentalless 3 sg. middle forms (*-a, -ari, - ri*) alongside the familiar *-(t)ta* and *-(t)tari*. But the logic of Neu's analysis requires him to assign the creation of the Hittite *r*-endings to a period after the separation of Anatolian from the rest of the family. The resemblance between Hitt. *-(n)tari* and endings like Lat. *-(n)tur,* OIr. *-t(h)ar,* and Toch. *-(n)tär* is thus for him largely coincidental, the result of separate analogical developments after the breakup of 'Frühindogermanisch'.[49] The only present middle

[48] To which may be added, in the post-1979 era, Neu 1985 and Neu 1989. Supportive of the Neu–Meid approach is Tischler 1982.

[49] Specifically, Neu (e.g. 1968: 138–43) derives the Hittite endings in *-ri* from the 'Perfektum I' 3 pl. present in **-ar,* but takes the *r* -endings of Italo-Celtic and Tocharian from the corresponding (and equally conjectural) 3 pl. preterite in **-or.* He thus denies one of the most striking isoglosses between Hittite and the rest of Indo-European.

attributable to the common parent of Anatolian and the other IE languages, in Neu's view, was the type with added *-*i,* which gave rise to the *ḫi*-conjugation in Anatolian and to the familiar middle with diphthongal endings in Indo-Iranian, Greek, and Germanic.

§20. In order to assess these proposals, it is essential to distinguish Meid's and Neu's specific hypotheses about the perfect and middle from what might be called their 'philosophy' of the *ḫi*-conjugation. Both scholars set out to show how a single pre-PIE source category was gradually differentiated into the classical perfect and a variety of supposedly distinct 'middles'—the *i*-middle, the *r*-middle, the middle in 3 sg. *-*o,* etc. Much of this discussion is speculative and quite removed from any actual data. Thus, for example, Meid takes the *ḫi*-conjugation from an archaic (ablauting?) middle with primary endings in *-*i* and a *t*-less 3 sg., but he is sketchy about what such forms meant in the parent language, what roots made them, and how (if at all) they contrasted with middles of the other types. No word equations are given linking specific *ḫi*-conjugation verbs to middles—or, for that matter, to perfects or actives—outside Anatolian. The only *ḫi*-conjugation 'cognates' that Meid cites from elsewhere (Neu gives none at all) are OCS *vědě* 'I know' and ON *heite* 'I am called', neither of which is convincingly analysed. *vědě* is not a middle of any kind, but a continuant of the familiar 1 sg. perfect **u̯óid-a* < **u̯óid-h₂e,* with the late, purely Slavic addition of **i* as a *hic et nunc* marker (so already Pedersen 1938: 107).[50] ON *heite* < **haitōi* (or < *-*ai*?) is indeed a middle, but of the ordinary type with *-*t-* in the 3 sg. (cf. Go. 3 sg. *haitada,* OE *hātte* 'is called'); its only unusual feature is the preserved 1 sg. middle ending, which was otherwise replaced in Germanic by the 3 sg. in *-*aƀai* (cf. Go. 1 sg. (= 3 sg.) *haitada,* OE 1 sg. (= 3 sg.) *hātte*).[51] The epistemological status of the Meid–Neu account is thus quite different from that of a full-blown theory of the *ḫi*-conjugation like Eichner's, which predicts that *ḫi*-verbs should correspond to discoverable perfects in the non-Anatolian languages, and can be judged, in part, by how well this prediction is fulfilled.

On the other hand, the evolutionary perspective in which Meid and Neu view the problem of the *ḫi*-conjugation, and in particular, their analysis of *ḫi*-verbs as functionally weakened middles, is quite attractive. Since the perfect

[50] In his 1975 treatment of the problem, Meid (216) mentions Lat. *gnōuī* as a form of the same type as *vědě.* This is entirely correct: the PIE prototype of *gnōuī* was, like **u̯óid-h₂e,* a perfect (cf. note 34), and like all reflexes of the perfect in Latin, took the particle **i* to reinforce its value as the 'present' tense form within the perfect system.

[51] The Germanic 1 sg. forms are discussed by Cowgill (1968: 26).

and the middle endings probably *do* go back to a single undifferentiated set in the prehistory of the parent language (cf. §§37 ff.),[52] it is entirely possible that the *ḫi*-conjugation arose not from the classical perfect or the classical middle, but from some related formation distinct from both. The practical problem is that there are many ways that shifts in the form and meaning of 'primitive' categories could have taken place in the period before and after the separation of Anatolian from the rest of the family. The task of a theory of the *ḫi*-conjugation cannot therefore simply be to invent reasonable-seeming inner-PIE (or inner-PIH or inner-'Frühindogermanisch') scenarios; it must be to show how a particular reconstruction of the latest PIE/PIH system—with or without accompanying speculations on the prehistory of that system—can account for all the facts in all the daughter languages. This is precisely what Meid and Neu fail to do.

§21. Other than the perfect and middle, the only PIE formation with which the *ḫi*-conjugation has been seriously compared is the active of the thematic conjugation. As we saw at the outset, the comparison of the 1 sg. in *-(ḫ)ḫi* with the thematic 1 sg. in *-*ō* (**bhérō* 'I carry', **u̯éĝhō* 'I convey', etc.) was first tentatively suggested by Hrozný. Following the rediscovery of the laryngeal theory by Kurylowicz in 1927, the possibility of a connection between Hitt. *-(ḫ)ḫi* and the thematic *-*ō,* now reinterpreted as *-*o-h*$_2$ (*vel sim.*), occurred to a number of other scholars, beginning with Kurylowicz himself (1927: 103).[53] Best known for this view is Couvreur (1936), who took the PIE **bherō*-type as the sole source of the *ḫi*-conjugation, rejecting completely the already widely accepted link with the perfect. Couvreur's proposal was never widely accepted, but some of his ideas, independently formulated, found a more moderate expo- nent in Pedersen (1933: 311–15, 1938: 80–6). Pedersen was convinced that while the thematic conjugation could not in any sense have *produced* the *ḫi*-conjugation, the two formations must somehow be related. Pursuing a line of thought later modified and adopted by Gamkrelidze and Ivanov (1995: 254–67), Neu (especially 1989), and others, he speculated that there had been two conjugations in the parent language—a *mi*-conjugation, originally transitive, and an *H*-conjugation, originally intransitive. Significantly, he assigned not only the

[52] It is, of course, possible to take this position without accepting Neu's personal view (e.g. in Neu 1989) that the common ancestor of the perfect and middle endings denoted 'Zustand' as opposed to 'Handlung'—or indeed any other particular hypothesis (cf. below). A major authority on the PIE verbal system who expressly rejects the idea that the two sets were originally identical is Cowgill (cf. e.g. 1979: 36).

[53] Kurylowicz, it will be noted, took a wide variety of positions on the *ḫi* -conjugation over the course his career—an eloquent testimony to both the centrality and the difficulty of the problem. For yet another discussion, this time rather closely approaching Rosenkranz, see Kurylowicz 1964: 67.

perfect and middle but also the thematic active to the latter category, comparing the Greek thematic 3 sg. in -ει (φέρει, etc.) with the PIE 3 sg. perfect in *-*e*. His views on the thematic conjugation thus anticipated by more than three decades the work of Watkins (1969 *passim*), who explicitly compared the PIE thematic conjugation with the so-called 'thematic' *ḫi*-verbs of Hittite (type *waštaḫḫi* 'I transgress', 2 sg. *-atti,* 3 sg. *-(a)i,* etc.).[54] But Pedersen went one step further: he proposed that the ordinary *non-* 'thematic' *ḫi*-verbs of Hittite were simply the athematic counterparts of the **bherō*-type—quasi-active presents that took the *H*-series of endings in the parent language. There, until 1979, the matter rested.

The strong form of the 'thematic conjugation theory', as represented by Couvreur, is obviously untenable. Not even the attractive Pedersen–Watkins equation of Gk. φέρει with the perfect and *ḫi*-conjugation 3 sg. in **-e(i)* is problem-free: the evidence for a *t*-less thematic 3 sg. outside Greek is unconvincing, and the 'thematic' character of the Hittite type *wašta-* is in all clear cases secondary (cf. e.g. §48). But it is impossible to dismiss the comparison of the *ḫi*-conjugation with the thematic conjugation entirely. However we set up the thematic paradigm as a whole, the existence of preforms of the type **bhéro-h*$_2$ (= Watkins's **bhéro-e̯o*) 'I carry' in the protolanguage shows that at least one PIE ending of the '*H*-series' (or, as we should now say, the '*h*$_2$*e*-series') could under certain circumstances lose its original perfect- or middle-like force and take on ordinary active value. This, as Pedersen saw, is the very behaviour that defines the problem of the *ḫi*-conjugation.

§22. The rationale for the presence of two conjugations in Anatolian remains, then, a mystery. The perfect theory in its canonical form (Risch, Eichner, Oettinger, etc.) explains the endings and the *o*-grade vocalism of many *ḫi*-verbs, but fails to account satisfactorily for their eventive meaning, their lack of reduplication, or their affinity for a highly specific group of present-forming suffixes. Still less acceptable is the 'nominal verbs' approach (Cowgill), which depends for its credibility on a chain of speculative and largely unsupported hypotheses. Theories that take the middle as their point of departure (Rosenkranz, Kurylowicz (late), etc.), while successfully avoiding some of the standard objections to the perfect: *ḫi*-conjugation comparison, face a formidable range of other difficulties. What might be characterized as 'in-between' theories—theories that seek to derive the *ḫi*-conjugation from a known or unknown sister category to the perfect and the middle (Neu, Meid, Couvreur,

[54] A connection between Hitt. *-(a)i* and the Greek thematic 3 sg. in -ει is also apparently favoured in the obscure remarks on the *ḫi* -conjugation by Kronasser (1956: 187 ff. and 1966: 373).

Pedersen, etc.)—can so far scarcely be said to have advanced beyond the level of conjecture.

Different as they are, all the above approaches share a common method. All begin by comparing the *ḫi*-conjugation endings with the endings of some known or presumed PIE category (e.g. the perfect), and then trying to show how the category thus identified could have come to serve as a normal present/preterite active in Anatolian. This is a perfectly legitimate procedure as far as it goes, but like any tool, it must be discarded when it is no longer useful. As repeatedly stressed above, a proper theory of the *ḫi*-conjugation must do more than account for the active function of the *ḫi*-series of endings; it must also explain why certain verbs—both individual lexical items and whole stem-classes—came to be assigned to the *ḫi*-conjugation while others remained in the *mi*-conjugation. In practice, this second goal has traditionally been downplayed or ignored; scholars with a commitment to the perfect theory (or the middle theory or the thematic conjugation theory) have naturally wished to focus on those particular *ḫi*-verbs that have something in common with perfects (or middles or root thematic presents) and to ignore the rest. This is unfortunate, because while the number of *ḫi*-verbs that can actually be connected with (say) perfects in the non-Anatolian languages is very small, a much larger number correspond in root etymology and stem structure to *ordinary active presents of a variety of formal types*. The rare and doubtful word equations that have been cited in support of the various proposals surveyed above are far less satisfying, intuitively speaking, than pairings like Hitt. *newaḫ(ḫ)-* (*ḫi*-conj.) 'make new': Lat. *(re)nouāre* 'id.', Hitt. *išp(a)i-* (*ḫi*-conj.) 'become sated': OCS *spějǫ* 'be successful', and Hitt. *kǎnk-* (*ḫi*-conj.) 'hang (tr.)': Go. *hahan* 'id.'. Yet comparisons such as these, holding no obvious interest for approaches that take the perfect or middle endings as their point of departure, have been treated as virtual stepchildren.

It has been well said that the first and most important step in applying the comparative method is knowing what to compare.[55] The present study, elaborating on an idea originally proposed in Jasanoff 1979*a* and developed further in Jasanoff 1994, starts from the position that, given our current knowledge, more can be learned about the *ḫi*-conjugation by comparing words with words than endings with endings. The traditional endings-based approach has been taken as far as it will go; pursued in the usual way, it leads either to the straitjacket of the perfect theory or the speculative morass of Indo-Hittite and Frühindogermanisch. Our strategy in what follows, therefore, will be to focus

[55] I learned this maxim many years ago from my teacher, Calvert Watkins (see e.g. Watkins 1990: 300). It deserves to be better known.

on the lexical *realia* of the problem. If *newaḫ(ḫ)-* and *(re)nouāre, išp(a)i-* and *spějǫ,* and *kǎnk-* and *hahan* are really cognate—if they really go back to the same preforms in the parent language—then it ought to be possible to learn something about why *newaḫ(ḫ)-*, *išp(a)i-*, and *kǎnk-* are *ḫi*-verbs by applying the ordinary methods of comparative reconstruction.

2 Morphological Preliminaries: The Perfect and the Middle

§23. Since the problem of the *ḫi*-conjugation is inextricably bound up with the perfect, the middle, and to a lesser extent the thematic conjugation, it will be useful to begin with a brief review of these categories, paying special attention to their similarities and differences.

In the case of the perfect the surface facts are well known. Perfect stems were built directly to roots in the parent language; formally, they were normally characterized by *e*-reduplication, ⋆*o* : *zero* apophony, and hysterokinetic accentuation.[56] From a functional point of view, the great majority of perfects were presents that denoted a state—specifically, a state resulting from the completion of a process. Surviving examples of stative perfects are common; inherited cases include ⋆*memón-*/**memn-*' 'have in mind, remember' (Gk. μέμονα, Lat. *meminī,* Go. *man*) to **men-* 'bring to mind', **dhedhórs-*/**dhedhr̥s-*' 'dare, be bold' (Ved. *dadhárṣa,* Go. *ga-dars*) to **dhers-* 'summon courage', **ĝeĝnóh₃-*/**ĝeĝnh₃-*' 'know, have recognized' (Ved. *jajñau,* OIr. *ad géuin*) to **ĝneh₃-* 'recognize', and—with exceptional lack of reduplication—**u̯óid-*/**u̯id-*' 'know, have perceived' (Ved. *véda,* Gk. οἶδα, Go. *wait,* etc.) to **u̯eid-* 'perceive'. A smaller group of perfects had 'intensive' meaning in the parent language. Most of the relevant cases are verbs of speaking, roaring, etc. (cf. Ved. *áha* 'says' (= YAv. *āδa* 'id.'), Gk. βέβρυχε 'roars', μέμῡκε 'bellows', ἄνωγε 'orders'). A few of these forms show the same reduplication pattern as intensive presents (e.g. Ved. *nónāva* 'roars', *leláya* 'trembles' (= Go. *reiraiþ* 'id.'?)).[57] The quasi-preterital 'resultative' sense associated with the perfect in most of the IE daughter languages (cf. e.g. Gk. δέδωκε, Ved. *dadáu,* Lat. *dedit* 'has given, gave') is almost wholly a post-IE development.

[56] The term 'hysterokinetic' refers to the mobile stress pattern in which the accent alternated between the stem-final syllable and the ending (e.g. 3 sg. *h₁és-ti* 'is', 3 pl. **h₁s-énti* ; 3 sg. **u̯óid-e* 'knows', 3 pl. **u̯id-ér*). Most athematic verb paradigms that were not hysterokinetic in PIE were 'acrostatic', with the accent fixed on the initial syllable (e.g. 3 sg. **stéu-ti* 'praises', 3 pl. **stéu-n̥ti*).

[57] On the 'intensive' perfect, which has been variously judged, cf. Narten (1981), Schaefer (1994: 45), and Di Giovine (1990: 81 ff.). Tichy (1983: 69–71) takes perfects of the type βέρυχε from onomatopoetic reduplicated presents.

In addition to the *_o_ : _zero_ ablaut pattern of perfects like *_memon-_/*_memn-_, *_u̯oid-_/*_u̯id-_, etc., there is evidence for two other inherited ablaut types. The existence of a class of perfects with _ō_-vocalism is suggested by a small number of forms in Greek, including ἄνωγε, γέγωνε 'shouts', and εἴωθε 'is accustomed' (< *_sesu̯ōdh-_). To these can perhaps be added a handful of preterites in *-_ō_- in the other languages, such as OIr. 3 sg. _ráith_ 'ran' (< *_(re)rōte_; pres. _rethid_) and _táich_ 'fled' (< *_(te)tōke_ pres. _techid_).[58] The '_ō_-perfect', whatever its absolute antiquity, was probably originally associated with *_ē_ : *_ĕ_ ('Narten') ablaut in related nominal and verbal forms; cf. especially the Greek pair ἦθος = ἔθος 'habit', pointing to a noun *_su̯édh-s-_/*_su̯ĕdh-s-_ (J. Schindler, p.c.).

The basis for assuming a PIE '_ā_-perfect' is more substantial. Such forms were taken for granted by the Neogrammarians, who routinely attributed the ablaut of, for instance, Gk. λέλᾱθε 'is unnoticed' (: pres. λανθάνω), ἔᾱγε < *ʔέʔᾱγε 'is broken' (: (ʔ)ἀγνυμι), Lat. _scābī_ 'I scratched' (: _scabō_), OIr. _ro ·lámair_ 'dared' (: _ro ·laimethar_) and Go. _skōb_ 'scraped' (: _skaban_) to the parent language.[59] Later, with the advent of the laryngeal theory and the recognition of the secondary character of many apparent instances of PIE *_a,_ the hypothesis of a distinctive group of perfects associated with roots in *-_a_- naturally fell into disfavour. But the only real alternative to assuming an _ā_-perfect—and it is beset with difficulties—is to explain the _ā_-perfects of Greek, Italic, Celtic, and Germanic as independent creations on the basis of reduplicated perfects of the type *_h₂e-h₂oĝ-_/*_h₂e-hₓĝ-_ ('*_āĝ-_') to *_h₂eĝ-_ ('*_aĝ-_') 'drive'.[60] Given the apparently secure status of *_a_ and *_ā_ as PIE phonemes (cf. Mayrhofer 1986: 170 ff.) and the clear evidence for *_a_ : *_ā_ ablaut in other inherited grammatical categories (cf. e.g. Gk. (ʔ)ἄστυ 'city' < *_u̯ás-tu-_ beside Ved. _vā́stu,_ Toch. A _waṣt,_ B _ost_ 'house' < *_u̯ā́s-tu-_ (Klingenschmitt 1982: 260)), it is simpler to maintain the old view that the _ā_-perfect—with or without an opposition of strong and weak stems[61]—was a genuine PIE formation.

[58] Here too, conceivably, belong Lat. _fōdō_ (: _fodiō_ 'I dig') and the Germanic preterite type *_mōl_ (: *_malan_ 'grind'). But since these forms simply lengthen the vowel of the corresponding _o_ -grade presents, they could easily be analogical.

[59] Thus Brugmann, _Gr._ ii / 3. 436, 447 f. The fact that the *-ā- of Lat. _scābī_ is guaranteed by only a single passage in Lucretius is no reason to doubt its authenticity.

[60] Note that of the four branches just named, the only one in which roots beginning with *_h₂e_ - actually form 'ā-perfects' is Germanic, where Go. _uz-anan_ 'expire' (pret. _uz-on_), ON _ala_ 'give birth to' (pret. _ól_), and ON _aka_ 'drive' (pret. _óku_) illustrate the pattern. But the strong preterites *_ōn,_ *_ōl,_ and *_ōk_ could easily have been formed according to productive patterns within Germanic, and there is no independent evidence for perfects of the roots *_h₂enh₁_ - 'breathe', *_h₂el(H)_ - 'raise, nourish', or *_h₂eĝ_ - 'drive' elsewhere in the family. In connection with the root _h₂eĝ_ - in particular, note that the Latin perfect _ēgī_ is not the replacement of an unattested *āgī < *_h₂e-h₂(o)ĝ_ -, but a lengthened-grade preterite (< *_h₂ēĝ_ -, with 'Eichner's Law') of the same type as _lēgī_ 'I read', _rēgī_ 'I directed', etc. Cf. §112 and App. 1.

[61] Whether the ā- and ō-perfects had weak forms with a short vowel, as suggested by occasional forms of the type Gk. λελασμένος (:λέλᾱθε), is not clear. The absence of a Germanic pattern pret. sg. *_skōb_ : pl. *_skabum_ is striking but not decisive.

§24. The perfect indicative was characterized by special endings, which can be straightforwardly reconstructed in the singular as 1 sg. *-*h₂e,* 2 sg. *-*th₂e,* 3 sg. *-*e*.[62] The situation in the plural is less clear. In the 1 pl. Greek and Latin are uninformative, having extended -μεν (ἴδμεν) and -*mus* (*meminimus*), respectively, to all moods and tenses. Classical Sanskrit, which elsewhere distinguishes between primary -*maḥ* and secondary -*ma,* regularly shows -*ma* in the perfect (*vidma*). But while this ending also appears in the Rigveda, it is less common than the long-vowel ending -*ma*. The special affinity of -*mā* for the perfect cannot be explained by prosodic factors such as metrical lengthening, and suggests rather that the original 1 pl. perfect ending may have been *-*meH* or *-*moH,* distinct from the *-*me,* *-*mes,* *-*mos,* etc. of the other tenses.[63] Certainly a 'special' ending in the 1 pl. would accord well with the situation in the 2 pl. Here Vedic has -*á* (*vidá*), an ending so anomalous from a synchronic point of view that it can hardly represent anything but an archaism vis-à-vis Gk. -τε (ἴστε), Lat. -*(is)tis* (*meministis*), and Go. -*(u)þ* (*wituþ* 'you know'). The natural inference is that the PIE ending was a sequence of the type *-*(H)e,* perhaps reflected also in Paelign. *lexe* 'lēgistis' (cf. Prosdocimi 1994: 237 ff.).

The 3 pl. of the perfect had an *r*-ending. Three variants are found:

(1) *-*r̥s*: GAv. -*ərəš,* Ved. -*uḥ,* with apparent extension to the optative in forms of the type 3 pl. aor. opt. YAv. *jamiiārəš,* Ved. *gamyúḥ* (: *gam-* 'go'). For Ved. -*uḥ* < *-*r̥s* cf. gen. sg. *pitúḥ* 'patris' < *-*tr̥-s*.

(2) *-*r̥*: GAv. -*arə̄,* YAv. -*ərə*, also OIr. pret. 3 pl. -*(a)tar* < *-*ont-r̥* (cf. e.g. *lotar* '(they) went' < **h₁ludhónt* + *-*r̥)*. For IIr. *-*ar* < *-*r̥* cf. YAv. *yākarə* 'liver', Ved. *áhar* 'day'; *-*r̥* is further presupposed by the 3 pl. middle ending *-*ro,* on which see §38.[64]

(3) *-*ēr*: Lat. -*ēre* < *-*ēr-i,* parallel to 1 sg. -*ī* < *-*ai* < *-*a* + *i,* etc.;[65] almost certainly also Hitt. pret. 3 pl. -*er, -ir* (cf. Melchert 143). *-*ēr* is likewise implicit in the Younger Avestan type 3 pl. mid. *å̊ŋhāire* '(they) sit' < *-*ēro(i)* (§38).

[62] For the Vedic type *jajñau* and Latin *(g)nōuī* see §40 below.

[63] Cf. Arnold 1905: 112. The formula *-*meH* will be employed below, not so much to insist on any particular reconstruction as to register the probable distinctness of the 1 pl. perfect from the 1 pl. of the imperfect or aorist. Burrow's comparison (1961: 307) of Ved. -*mā* with the Lithuanian 1 pl. reflexive in -*mė -s* is possible but hardly compelling.

[64] Here too perhaps belongs the Toch. A 3 pl. preterite in -*är* (cf. *prakär* 'they asked', etc.), which could also, however, go back to *-*r̥s*.

[65] The surprising Old Latin (Lapis Satricanus) form *steterai* (for expected **steteri*) presumably represents -*ērai,* with -*ai* taken over from the 1 sg. (cf. Fal. *peparai*) and 2 sg. (*-*istai*).

The allomorphs *-*ēr* and *-*r̥* are apophonically related, recalling pairs like 3 pl. act. *-*ent* : *-*n̥t* and gen. sg. *-*es* : *-*s*. But the fuller form *-*ēr* is unique: nowhere else in PIE morphology does the unreduced variant of a desinence appear with lengthened-grade rather than full-grade vocalism. As I have argued elsewhere (most recently in Jasanoff 1994: 150 and 1997*a*: 120), this oddity can be neatly explained by supposing that the original form of the 3 pl. perfect ending was a pre-PIE sequence **-*ers*. In post-tonic syllables—as e.g. in perfects of the type with accented *ă̄*-vocalism (λελᾰ̄θε, *scābī,* etc.) and in full-grade forms like the anomalous Gathic Avestan 3 pl. *cikōitərəš* to be discussed below—this was reduced to the phonologically regular zero-grade *-*r̥s,* in exactly the same way that *-*ent* was reduced to *-*n̥t* after accented syllables in the 3 pl. active. Under the accent, however, **-*érs* gave *-*ă̆r* by the PIE rule, well known from the nom. sg. of liquid and nasal stems, by which sequences of the form *-*V́R-s* were converted to *-*V́R* in word-final position (cf. **ph*$_2$*-tḗr* 'father' < **-*tér-s,* **uks-ḗn* 'ox' < **-*én-s,* etc.; the process is discussed by Szemerényi 1996: 115 f. and Nussbaum 1986: 129 f.). The variant *-*r̥* is thus probably to be interpreted as a compromise between *-*r̥s* and *-*ēr,* or—what amounts to the same thing—as an analogical alteration of *-*r̥s* under the influence of *-*ēr*. There is no reliable evidence for a PIE 'normal' full-grade *-*ĕr*.[66]

Within Indo-Iranian, Avestan has reflexes of both PIE *-*r̥* (> -*arə̄, -arə*) and *-*r̥s* (> -*(ə)rəš*), while Indic preserves only *-*r̥s* (> -*uḥ*). An indirect trace of the missing pre-Indic 3 pl. perf. in *-*r̥* (> *-*aḥ*), however, can be detected in the corresponding dual ending. The Vedic 3 du. in -*atuḥ* (*jajñátuḥ* (: *jan-* 'beget'), etc.) and the Avestan 3 du. in -*atarə* (YAv. *yaētatarə* (: *yat-* 'move'),[67] etc.) both show the influence of the 3 pl., most obviously in their final *r*-sequences, which have simply been copied from the -*uḥ* and -*arə* of the plural. But the puzzling 'union vowel' *-*a-* probably goes back to the 3 pl. as well. Its source could only have been the inherited 3 pl. in *-*ar* < *-*r̥,* the *-*a-* of which was synchronically reinterpreted as a linking element and extended to the 3 du.[68] Proto-Indo-Iranian, like Proto-Iranian, clearly had both *-*ar* < PIE *-*r̥* and *-*r̥š* < PIE *-*r̥s,* distributed

[66] Early Lat. -*ĕrunt,* which could in principle represent an *nt* -extension of earlier *-*ĕr,* is in fact better segmented *-*i -ront,* with the union vowel *-*i* - (cf. -*i -mus, -i -stī, -i -stis*) followed by an *nt* -extended form of *-*r̥*. It will be noted that, *pace* Eichner (1975: 86) and more recent writers, there is no need to refer the *-ē- of Lat. -*ēre* and Hitt. -*er* to the 'stative' suffix *-*eh*$_1$ -, which is not otherwise known to have played any role in the PIE perfect system. The Venetic form *teuters* (Prosdocimi–Marinetti 1988: 114 ff.), if it belongs here, points either to *-*r̥s* or to a reconstituted neo-full grade *-*ers*.

[67] With graphic variant -*ātarə* ; cf. Kellens 1984: 411.

[68] The 2 du. in *-*athr̥(š)* (Ved. -*athuḥ*) is of course modelled on the 3 du. in *-*atr̥(š).* For the extraction of a union vowel from the ending of the 3 pl., compare e.g. the Gothic preterite endings 1 pl. -*um,* 2 pl. -*up,* 1 du. -*u* (< *-*u -w* -), and 2 du. -*uts,* all based on the 3 pl. in -*un* < *-*n̥t*.

according to a principle which will be investigated below. The complete replacement of PIIr. *-*ar* by *-*r̥š* (> -*uḥ*) was an innovation proper to Indic.

§25. It is a curious fact, the significance of which has never been sufficiently appreciated, that the modal and non-presential forms of the perfect were marked by the *active,* rather than the perfect, endings. Thus, the perfect optative was made in basically the same way as the optative of an athematic active present, with the mood sign *-*i̯eh*$_1$-/*-*ih*$_1$- followed by the endings *-*m,* *-*s,* *-*t,* etc. (cf. Ved. 3 sg. *vidyā́t, jagamyāt,* etc.; GAv. 3 sg. *vīdiiā̰t,* YAv. *hazdiiā̰t* (: *had-* 'sit'); Gk. 2 sg. εἰδεῖης (analogically reshaped from *(?)ιδῖης), ἑστα͡ῖης (:στᾱ- 'stand'), etc.).[69] This formal feature, although often taken for granted, is neither trivial nor self-explanatory. Since PIE presents which inflected as middles in the indicative also inflected as middles in the optative (e.g. 3 sg. **u̯és-ih*$_1$*-to* 'might wear', **dhugh-ih*$_1$*-ó* (> Ved. *duhīyá*[*t*]) 'might yield', etc.), the perfect optative might have been expected to show the perfect endings, with a paradigm of the type 1 sg. ***u̯id-i̯h*$_1$*-h*$_2$*e,* 2 sg. ***u̯id-i̯h*$_1$*-th*$_2$*e,* 3 sg. ***u̯id-i̯h*$_1$*-e,* etc. No such forms, however, are found, either in the optative or in the other moods. The perfect imperative is made like the imperative of an active root or reduplicated present, with a 2 sg. in *-*dhi* (cf. Ved. *viddhí, śuśugdhí* (: *śuc-* 'gleam'), Gk. ἴσθι, ἄνωχθι, ἔστα͡θι, etc.), and corresponding 2 pl., 2 du., and 3 sg./pl. forms in *-*te,* *-*tom,* and *-*(n)tu*/*-*(n)tōd,* respectively.[70] The perfect subjunctive was an active 'short-vowel' subjunctive of the usual kind (cf. Ved. 3 sg. *védati* (*-at*), YAv. *vaēδa̰t,* Gk. 1, 2 pl. εἴδομεν, -ετε, etc.).

In the indicative, there is considerable evidence to show that the perfect stem in PIE could be combined directly with the active secondary endings to yield a stative preterite—the so-called pluperfect—and an augmentless 'injunctive', used, for example, in inhibitive sentences with the particle **méh*$_1$ (Ved. *má́,* Gk. μὴ).[71] The injunctive construction is represented in the Rigveda by *má́(ki*ḥ*)* … *dadharṣīt* i. 183. 4, iv. 4. 3 (with *-īt* for *-*t*) and *má́* … *siṣet*VIII. 67. 8 (: *si-* 'bind',

[69] Here too belongs the preterite optative in Germanic (type Go. *munjau, -eis, -i*), which substitutes zero-grade *-ī- for full-grade *-*i̯ē* - in the singular but retains the active endings. In Italic, the Sabellic dialects have a perfect subjunctive in *-ē- (type Osc. *fefacid* 'fecerit', *fuid* 'fuerit'), which goes back, via a combination of sound change and analogy, to the perfect and root aorist optative in *-*i̯ē* -. See Jasanoff 1991*a* : 95–8.

[70] Cf. Ved. 2 pl. *jujuṣṭana* (: *juṣ* - 'enjoy'), 2 du. *vittā́m,* 3 sg. *babhū́tu* (: *bhū- 'become'*), etc.; equivalent Homeric forms are 2 pl. ἔστατε, 2 du. ἔστατον, and 3 sg. ἴστω. The perfect imperative is not attested in Avestan.

[71] My use of the term 'injunctive' is not intended to take a position on the important but controversial claim, due to Karl Hoffmann (1970: 533 ff.), that PIE made a distinction between augmented and unaugmented verbal forms—chiefly imperfects and aorists—in otherwise identical contexts. Whether or not there was an actual contrast between e. g. 'narrative' **é-gʷhen -s* and 'memorative' **gʷhén -s* (both meaning approximately 'you slew') in the parent language, it is clear that there were at least some environments, notably including inhibitive / prohibitive expressions of the type **méh*$_1$ *gʷhen -s* 'do not (continue) slay(ing)', where the augment did *not* occur. The forms used in such contexts can conveniently be described as injunctives.

perf. *siṣāya*). The use of the perfect injunctive in negative commands happens not to be attested in Avestan, and it is not, of course, found in Greek, where the injunctive no longer exists as a category. But it recurs, interestingly enough, in Germanic.

The Gothic Bible attests four instances of the expression *ni ogs þus* 'fear not!' The form *ogs,* from the preterito-present *ogan* 'fear' (: OIr. *ad·ágathar* 'fears'), is synchronically irregular. Negative commands in Gothic are normally made with the optative; the expected Gothic translation of Gk. μὴ φοβοῦ ought to have been **ni ogeis þus,* with *-ei-* [-ī-] representing the generalized zero grade of the PIE optative morpheme. According to the standard view, as represented, for example, by Streitberg (1920: 347), *ogs* goes back not to an optative, but to a 2 sg. subjunctive **āgh-e-s,* morphologically parallel to Ved. *védat* and Gk. εἴδομεν. But the subjunctive mood was not used for inhibitives or prohibitives in the parent language,[72] and there is no evidence, other than *ogs* itself, for its survival in Germanic. Strictly speaking, all that we know about the history of negative commands in Germanic is that the syntactic type **mē bheres* 'do not carry', with the injunctive, was eventually replaced by the type **mē bherois* (cf. Go. *ni bairais*), with the optative. Other things being equal, it would be simplest to suppose that the replacement was direct—i.e. that the optative simply took over the role of the injunctive when the injunctive became obsolete. The putative derivation of *ogs* from **āgh-e-s* has the disadvantage of requiring us to abandon the simple schema *injunctive* ⇒*optative* in favour of the more complex and otherwise unmotivated schema *injunctive* ⇒*subjunctive* ⇒*optative.* It is clearly preferable, therefore, to take *ogs* directly from a pre-Gmc. perfect injunctive **āgh-s.* Formally, **āgh-s* (phonetically [āks]) would regularly have given Go. **ohs,* with a voiceless cluster. But the theoretically expected **ohs* would almost inevitably have been remodelled to *ogs* under the influence of the rest of the paradigm, just as 2 sg. **maht* (: *magan* 'be able') was remade to *magt,* and nom. sg. **baurhs* 'city' (< **-ĝh-s*) was remade to *baurgs.*[73]

The pluperfect proper is securely attested in Vedic Sanskrit, as documented by Thieme (1929: 35 ff.). Although some pluperfects, e.g. 3 sg. *abibhet* 'was afraid' (perf. *bibhāya*), *ajāgar* 'was awake' (perf. *jāgāra*), and *aciket* 'saw, perceived' (perf. *cikāya*), are found only in the late tenth book of the Rigveda, others, e.g. 1 sg.

[72] For the situation in Vedic, see Hoffmann 1967*a* : 92 ff.

[73] The twice-attested use of *ogs* in positive commands is analogical: since preterito-presents regularly employed the optative as the normal command form, it was easy to set up a proportion *ni gakunneis* (*ni muneis,* etc.) : *gakunneis* (*muneis*) :: *ni ogs* : *X,* where *X* was solved as *ogs.*

avedam 'I knew', 2 sg. *adīdeḫ* 'you shone' (perf. *dīdáya*), and 3 sg. (also 2 sg.) *cākan* 'took pleasure in' (perf. 1 sg. *cākana*), are attested from the very beginning of the Vedic tradition. The pluperfect in *-*m,* *-s, *-*t* is in fact of Indo-Iranian date, as shown by the unique Gathic Avestan 3 sg. *urūraost* (: *rud-* 'hold off'; cf. YAv. perf. 1 sg. *urūraoδa*).[74] Similar forms are found in Greek. The most archaic type of pluperfect in Homer adds the active secondary endings to the perfect stem: cf. 3 du. ἐικτην < *ϝεϝικτᾱν (perf. ἔοικε 'resembles'), (ἐκ)γεγάτην (perf. γέγονε 'is born'), 1 pl. ἐπέπιθμεν (perf. 3 sg. πέποιθε 'obeys, is persuaded'), ἐδείδιμεν (perf. 1 sg. δείδω < *δέδϝοα 'I am afraid').[75] Only slightly more opaque are 3 pl. forms of the type βέβασαν (perf. βέβηκε 'is gone'), δείδισαν, ἔστασαν, ἴσαν (perf. οἶδε), μέμασαν (perf. μέμονε 'intends') and (ἀπο-)τέθναασαν (perf. τέθνηκε 'is dead'). The ending -σαν in the 3 pl. is evidently the replacement of older *-α[ν] < *-*n̥t* (cf. Schwyzer 1939: 777); its origin is probably to be localized in ἴσαν < *ϝίσαν, which supplanted earlier *ϝίδα[ν] under the influence of the other inherited second and third person forms (2 pl. *ϝίστε, 2 du. *ϝίστον, 3 du. *ϝίστᾱν, 2 sg. *ϝοίς < **u̯óid-s,* 3 sg. *ϝοίσ(τ) < **u̯óid-t*). From *ϝίσαν was in turn back-formed the 3 pl. perf. *ϝίσαντι (cf. Hom., Att. ἴσᾱσι, Dor. ἴσαντι (whence pres. ἴσᾱμι)), with a distribution that shows that, at least in this verb, -σαν goes back to the Common Greek period.[76]

§26. A reflex of the PIE pluperfect is also found in Hittite. As we have seen in §9, the *ḫi*-conjugation verb *wewakk-* 'demand' unmistakably recalls a perfect in reduplication, root vocalism, *ḫi*-inflection, and quasi-stative meaning ('demands' < * 'wishes'; cf. Skt. *váṣṭi* 'wishes, orders').[77] Eichner's analysis of *wewakk-* as a

[74] Cf. Kellens 1984: 411, where other alleged pluperfects are dismissed as 'illusoires ou douteux'.

[75] This is also the mode of formation of the pluperfect middle (cf. 3 sg. *εἵκτο,* εἵμαρτο 'it was fated', *πέπυστο* 'understood', etc.). Three other pluperfect formations are found in Greek: (*a*) the 'normal' 1-3 sg. type (with later extension to the plural) in -εα, -εας, -ει < –εε (e.g. 3 sg. ἐπεποίθει 'obeyed', ἑστήκει 'stood'); (*b*) the marginal thematic type, typical of 'intensives', in 1 sg., 3 pl. *-on,* 3 sg. -ε (*ἄνωγον* 'they called', γέγωνε 'shouted', etc.); and (*c*) the isolated preterite singular of the verb 'to know' (2 sg. Hom. ᾔδης, ᾔδησθα, 3 sg. ᾔδη, ᾐειδη(vs. Att. ᾔδει). Type (*a*), notoriously difficult, must somehow rest on an inner-Greek replacement of older **epépoith* -m̥, *-s, -t,* which would have yielded hypershort forms in the 2 sg. and 3 sg. (> *ἔποις, *ἐπέποισ(τ); similarly *ἐλέλοιψ, *ἐλέλοι(πτ), etc.). Type (*c*), as I have suggested elsewhere (Jasanoff 1997*a* : 125 n. 20), can be explained as a back-formation from the remade optative εἰδείη; the model was provided by intransitive aorist pairs of the type opt. 2, 3 sg. φανείη(ς) : indic. 2, 3 sg. (ἐ)φάνη (ς) 'appeared'.

[76] Ringe (1989) takes the frequent scansion ἴσσᾱσι to show that the 3 pl. forms originally contained a sequence **fl̥̂-σ-, but his arguments do not exclude a purely metrical explanation. As will be clear from the foregoing discussion, I cannot accept the account of the Greek pluperfect in Berg 1977, which starts from the incorrect premise that the pluperfect was a post-IE category. See now Peters 1997: 211 ff.*

[77] The only respect in which *wewakk-* differs from a canonical perfect is in the position of the accent, which, to judge from the preserved *-e -*, must have been on the reduplication syllable. As Craig Melchert points out to me, however, the accent was probably still on the root at the time of Eichner's second lenition rule, which would otherwise have taken **wéwakki* to **wéwaki,* with laxing or voicing of *-kk-* to *-k-* (= [g]; cf. Eichner 1973: 100 n. 86). Another probable example of an old perfect with leftward displacement of the accent is *mēma /i-* 'say', discussed in §71.

thematic reduplicated aorist (1973: 81), which attaches disproportionate importance to the Neo-Hittite thematized 3 sg. form *wewakkizzi,* is clearly unacceptable. Oettinger, who prefers to connect *wewakk-* with the Rigvedic hapax present *vavaś-* (2 sg. *vavákṣi,* viii. 45. 6), refers both to a PIE *o*-grade reduplicated present **u̯éu̯ok-ti*. Whether such forms actually existed in the parent language is in my view questionable (cf. §44, with note 8). But even if Oettinger's reconstruction were otherwise unexceptionable, a preform **u̯éu̯ok-ti* would not account for the *ḫi*-inflection of the Hittite verb or the accentuation of its supposed Vedic cognate.[78] The possibility of a formal link between *wewakk-* and the Vedic optative type *á vavr̥tyām, -yāt,* etc. (: *vr̥t-*), which Oettinger ponders in a footnote (433 n. 81), must remain an abstract question until the status of the Vedic forms is clarified.[79]

It is easy to understand Eichner's and Oettinger's reluctance to consider *wewakki* as the reflex of a 3 sg. perfect **u̯eu̯ók-e(i),* since, among other things, their theory of the *ḫi*-conjugation envisages a general Anatolian loss of surface reduplication in the perfect (cf. Eichner's *šākki* < **sesóh₂g-e(i)*). But the identification of *wewakki* as a perfect is strengthened by two further considerations. First, a perfect of the root **u̯ek-* is independently attested in the Rigveda, where the middle participle *vāvaśāná-* is found eleven times beside scattered indicative forms. Second and more important, the oldest 3 sg. preterite of *wewakki* is not **wewakkiš,* as would have been expected in a normal *ḫi*-verb (cf. *šākkiš* 'knew', *ákkiš* 'died', *wak(k)iš* 'bit'), but, as already mentioned in §9, *wewakta,* with the *mi*-conjugation ending *-t(a)* (KUB XLIII 23, 'mittelhethitisch oder spät althethitisch').[80] Given what we have learned thus far, it is hard to avoid the conclusion that this form is a reflex of the expected pluperfect **u̯eu̯ók-t,* standing in the same relation to the perfect **u̯eu̯ók-e(i)* as e.g. Ved.

[78] Oettinger, of course, reckons with a mechanical transfer of verbs to the *ḫi* -conjugation on the strength of their *o* -grade vocalism—a position that I find completely implausible (cf. Ch. 1 n. 29). In Oettinger's later treatment of the *wewakk* - : *vavaś* - equation (1992: 229–32), the accent of the supposed 'intensive' **u̯eu̯ok -ti* is left unspecified.

[79] The obvious default hypothesis is that á *vavr̥tyām, -yāt,* etc. is a perfect optative, secondarily transitivized like the corresponding indicative á *vavarta* (so already Thieme 1929: 50). If this is true, then the connection of *vav(a)rt* -, etc. to *wewakk* - would be clear enough: both would be ordinary perfects.

[80] Oettinger lists a second occurrence at KUB XIV 1 R̊ 88 (Madduwattas), but the passage, as Gillian Hart and Craig Melchert point out to me, is broken, and the correct reading is almost certainly *wewakki.* According to Oettinger (43 n. 34), 'Prät. Sg. 3 ú-*e* -u̯*a* -*ak* -*ta* statt zu erwartendem *ú-*e* -u̯*a* -*ak* -*ki* -*iš* zeigt, daB auch bei Stämmen auf Tektal die Endung Prät. Sg. -*ta* der *mi* -Konjugation ([*ḫarkta*] 'er ging zugrunde' < **ḫark -t*) schon früh übernommen werden konnte.' He cites no other early examples, however.

abibhet to *bibhāya,* GAv. *urūraost* to YAv. 1 sg. (= 3 sg.) *urūraoδa,* Gk. ἐδεἰδιμεν to δεἰδιμεν, and Go. *ogs* to (2 sg. pres.) **ogt.* As pointed out in Ch. 1, the existence of a pre-Hittite pattern **u̯eu̯ók-e(i)* 'wishes' : **u̯eu̯ók-t* 'wished' is incompatible with the hypothesis of a pre-Hittite preterito-present type **sagg-ḫai* 'I know' : **sagg-ḫa* 'I knew'.

Although *wewakk-* is an etymological perfect and *vavákṣi* is a present, Oettinger's comparison of the two forms may well be correct. *vavákṣi* is probably a back-formed present of the *bibhéti* type (see below), based on the perfect **u̯eu̯ók-* in the same way that e.g. the Rigvedic 2 sg. present *mamatsi* (IV. 21. 9) is based on the perfect *mamắd-* (: *mad-* 'rejoice').[81] The root accentuation of *vavákṣi,* unusual in a reduplicated present (contrast *dádāti* 'gives', *dádhāti* 'puts', etc.), simply reproduces that of the underlying perfect. Eventually, the stem *vavaś-* was modernized to *vivaś-* (3 sg. *vivaṣṭi* VII. 16. 11), with the more typical *i*-reduplication of a productively formed class 3 present.

§27. The facts just reviewed would seem to suggest that the PIE pluperfect was made from the perfect by substituting the active secondary endings for the perfect endings. There is an exception, however, that sheds unexpected light on the history of the perfect system as a whole.

It is an interesting fact that the 3 pl. of the Vedic pluperfect and perfect injunctive is characterized by *full grade,* rather than the expected zero grade, of the root syllable.[82] Thus, the root *dhī-* 'look, think' makes a stative perfect 1 sg. *dīdhaya* (RV III. 38.1, X. 32. 4; cf. YAv. 3 sg. *diδaiia*), 3 pl. *dīdhiyuḥ* (X. 40. 10), the preterite of which is the pluperfect 3 sg. *ádīdhet* (X. 98. 7; cf. inj. *dīdhet* X. 144. 3), 3 pl. *ádīdhu̯ayuḥ* (V. 40. 5, VII. 33. 5), with full grade. Similarly, the pluperfect corresponding to the perfect *vivyāca* (: *vyac-* 'encompass') is 3 sg. *ávivyak* (VII. 18. 8, 63. 1), 3 pl. *avivyu̯acuḥ* (X. 56. 4), again with full grade. The 'intensive' perfect *nónāva* (: *nu-* 'roar, praise'), 3 pl. *nonuvuḥ* (V. 45. 25) makes a full-grade 3 pl. pluperfect *anonu̯avuḥ* (I. 80. 9, VIII. 49. 4). *ámamu̯aduḥ* (VII. 18. 21) is the 3 pl. pluperfect corresponding to 3 sg. perf. *mamắda,* whose unaugmented 3 pl. is *mandúḥ* < **ma-md-* (VII. 33. 1, VIII. 12. 13), with the regular zero grade of the perfect proper. Post-Rigvedic forms of the same type include 3 pl. plpf. *acikayuḥ* (: *ci-* 'observe'; contrast 3 pl. perf. *cikyuḥ*) and 3 pl. plpf. *ábībhayuḥ* (: *bhī-* 'fear'; contrast 3 pl. perf. *bibhyuḥ*).[83]

[81] So, cautiously, Thieme 1929: 39.

[82] The discussion in this and the following sections recapitulates the argument of Jasanoff 1997*a.*

[83] Pluperfects in form but not in meaning are *áśiśrayuḥ* (: *śri* - 'direct, lay'; vii. 2. 5, etc.), *ácucyavuḥ* (: *cyu* - 'move, stir'; v. 53. 6, etc.), and *aśuśravuḥ* (: *śru* -'hear'; x. 94. 12). The latter two pattern functionally as reduplicated aorists.

One of the reasons why these forms have received relatively little attention is that from the standpoint of later Sanskrit they pattern not as pluperfects but as imperfects. From a purely formal point of view the pluperfect *ádīdhet, ádīdhayuḥ* can be associated synchronically with the innovated present participle *dīdhiat-* (itself the replacement of older **dīdhīvāṃs-*) and construed as the imperfect of an otherwise unattested class 3 present **dīdheti* (cf. YAv. *daiδiiaṇt-*, 3 sg. *diδāiti* for **diδaēiti*; cf. Insler 1971: 583 f.). Similarly, *ábībhayuḥ, acikayuḥ, avivyacuḥ,* and *ámamaduḥ* can be synchronically analysed as belonging to the fragmentary or mainly post-Rigvedic presents *bibhéti, cikéti, vivyákti,* and *mamátti,* respectively. That the 'imperfect' interpretation of these forms was in fact ultimately preferred by native speakers is shown by the Sanskrit grammarians' rule that the reduplicated presents of roots ending in *-ī̆-*, *-ŭ̆-*, or *-ṛ̆-* take *guṇa* before the *-uḥ* of the 3 pl. imperfect (cf. Whitney 1889: 243, 247). But with the sole exception of the 3 pl. impf. *áḫuhavuḥ* (: *hu-* 'pour'), which occurs twice in a single hymn in the tenth book of the Rigveda, all the early instantiations of the *guṇa* rule are simply etymological pluperfects that have been incorporated into secondarily elaborated present paradigms. The analogical creation of the presents *bibhéti, cikéti,* etc., which entailed not only the reinterpretation of pluperfects as imperfects but also the reinterpretation of perfect subjunctives, optatives, and imperatives as modal forms of the present, was described long ago by Wackernagel (1907).[84]

§28. An important consequence of the above observation is that we can now easily explain the irregular Gathic Avestan form *cikōitərəš,* which despite its abnormal ablaut and ending is normally taken to be a 3 pl. perfect and translated '(they) show themselves/appear/shine'. The passage (Y. 32. 11) reads as follows in the Kellens–Pirart edition:

taēcit mā mōrəṇdən jiiōtūm, yōi drəguuaṇtō mazbīš ***cikōitərəš***

aŋxʲhīščā aŋhauuascā, apaiieitī raēxənaŋhō vaēdəm

yōi vahištaṯ aṣaonō, mazdā rārəšiąn manaŋhō

Ils corrompent ma substance, les (mauvais) maîtres et maîtresses qui *se signalent* comme des partisans de la Tromperie par de grands (torts) …, s'éloignant ainsi, ô Mazdā, de la très divine Pensée et de l'Harmonie. (Kellens–Pirart 1988: 121)[85]

[84] Cf. also Cardona (1992), who documents the rise of the post-Vedic present *vedmi.* Parallel to Ved. *bibhéti,* but probably created independently, is Gmc. **bibaip,* OHG *bebēt* 'trembles'.

[85] Cf. Insler 1975: 47: 'Those deceitful ones who *appear* in grandeur as lords and ladies, even they have ruined this life by stealing the property of the (true) inheritor, (as well as those) who have tried to deflect the truthful from the very best thinking'; and Humbach 1959: 98: 'Fürwahr, das Leben verderben die Trughaften, die mit von ihnen so genannten groBen Dingen *glänzen,* mit der Wegnahme des Besitzes des Erbteils, diese angeblichen Lebensherrinnen und Lebensherren, die Wahrhaften vom besten Gedanken abspenstig machen, o Kundiger.'

Although *cikōitərəš* is conventionally rendered by a present tense in modern editions, it is obvious that nothing stands in the way of translating it 'showed themselves/appeared/shone' and treating it as a pluperfect.[86] This immediately explains the full grade of the root syllable, at least in Indo-Iranian terms: *(a)cikōitərəš* (with typical Avestan omission of the augment) is simply the Gathic equivalent of what in the Rigveda would have been a 3 pl. pluperfect **(á)ciketuḥ* (: *cit-* 'perceive, appear'), with the same root vocalism as *ádīdhayuḥ, avivyacuḥ,* and *acikayuḥ*. Just as the 3 pl. perfect corresponding to **(á)ciketuḥ* would have been—and is twice attested as—*cikitúḥ,* with the usual zero grade of the root, the 3 pl. perfect corresponding to *cikōitərəš* in Gathic Avestan would have been **cicitarə̄,* with zero grade of the root and the normal perfect ending *-arə̄* (= YAv. *-arə*).

Once it is correctly analysed, *cikōitərəš* provides an important insight into the original distribution of the endings *-*ar* < *-*r̥* and *-*r̥š* < *-*r̥s* in Indo-Iranian. Vedic Sanskrit, as we have seen, eliminated the contrast between the two variants, generalizing *-uḥ* < *-*r̥š* everywhere. Avestan, on the other hand, shows a principled system: *-arə̃* is confined to the perfect proper, while *-(ə)rəš* is employed as a kind of 'secondary' ending, both in the pluperfect itself and in 3 pl. optatives of the type *jamiiārəš, buiiārəš,* etc. This distribution, which cannot be motivated as an internal innovation within Iranian, must be old—at least as old as Proto-Indo-Iranian, and probably as old as late PIE itself.

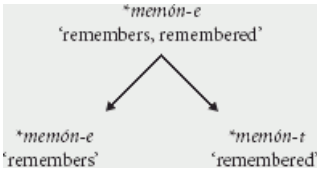
§29. The distinctive character of the Indo-Iranian 3 pl. pluperfect, with its special ending and unexpected full grade (< *e*-grade),[87] invites us to re-examine the nature of the perfect : pluperfect relationship. The singular of the pluperfect clearly had the same *o*-grade as the perfect proper; in synchronic terms, it was derived from the perfect singular by substituting the active secondary endings *-*m,* *-*s,* *-*t* for the perfect endings *-*h₂e,* *-*th₂e,* *-*e*. The all but inevitable inference, which many scholars have drawn, is that at some time in the prehistory of the parent language the ancestor of the perfect was indifferent to tense, representing present and past stative meanings alike. A form like 3 sg.

[86] Or simply translating it as a present and treating it as a perfect injunctive. The all-important fact is that the pattern *mōrəŋ̊dəm …cikōitərəš* is paralleled in the preceding verse by *mōrəŋ̊daṯ …aogədā,* with the augmentless imperfect *aogədā* 'says/said' occupying the structural position of *cikōitərəš*.

[87] If *cikōitərəš* and the corresponding Vedic forms had had *o*-grade of the root, we ought to have found forms of the type **acikāyuḥ, *ajuhāvuḥ,* etc., with lengthening of *-*o-* in open syllables by Brugmann's Law. The unpalatalized *-*k-* of *cikōitərəš* and *acikayuḥ* is no doubt analogical to the *-*k-* of the *o*-grade singular forms.In the wake of Schrijver 1995: 353 f., I would no longer claim (despite Jasanoff 1997*a*: 128 n. 30) to find indirect evidence for a 3 pl. pluperfect **u̯éid-r̥s* '(they) knew' in the apparent *e*-grade of MW *gwyr* 'knows'.

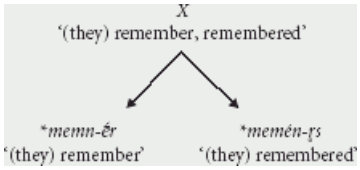
**memón-e* probably once meant both '(s)he remembers' and '(s)he remembered'. When it subsequently became necessary or desirable to mark the present : preterite distinction in the perfect system, the secondary active endings were introduced into the perfect to make up for the lack of a specifically 'secondary' set of perfect endings. The process can be schematized as in Fig. 2.1 below. Similar diagrams could be constructed for the 1-2 sg. and possibly, though the record is less clear, as we shall see, for the 1-3 du. and the 1-2 pl.

FIGURE2.1



At least in the 3 pl., however, the situation was different. Here the late PIE surface forms were the canonical perfect **memn-ḗr* (with variant **memn-r̥*?) '(they) remember' and the pluperfect **memén-r̥s* '(they) remembered', the latter with the *e*-grade root and unmodified zero-grade ending of *cikōitərəš, ádīdhayuḥ,* etc. For these too we may assume a common descent, as shown in Fig. 2.2:

FIGURE2.2



What, we must now ask, was *X* in this schema? The normal-looking **memn-é́r* and its immediate predecessor ***memn-érs* cannot be considered for this role; there is no known morphological process in PIE that could have replaced the zero-grade weak stem **memn-*' by the accented full-grade form **memén-*. On the other hand, a late PIE and early post-PIE tendency to replace *e*-grade by zero grade in morphologically 'weak' positions is well documented in a variety of stems of the acrostatic ablaut/accent type, including Narten presents (cf. Ved. 3 sg. *stáuti* 'praises' : 3 pl. *stuvánti,* replacing **stávati* < **stéu̯nti*), root nouns with **o* : **e* ablaut (the type **u̯óik-s* 'clan', gen. **u̯ik-és,* replacing **u̯éik-s*; cf. Schindler 1972: 32), and further formations to be discussed in the following chapters. Surprising as it may seem, therefore, the common predecessor of **memn-é́r* and **memén-r̥s*—the 3 pl. of the still undifferentiated pre-PIE perfect/pluperfect—was probably a form similar or identical to the pluperfect **memén-r̥s*.

We are thus inevitably led by the morphology of the pluperfect to confront the likelihood that the PIE perfect originally had not **o* : *zero,* but **o* : **e* ablaut. The pre-PIE paradigm can be envisaged as in Fig. 2.3:[88]

FIGURE2.3

sg.	1	**memón-h₂e*	pl.	**memén-meH* (cf. §24)
	2	**memón-th₂e*		**memén-(H)e* (cf. §24)
	3	**memón-e*		**memén-r̥s*

Sometime before the breakup of the parent language the primitive paradigm of the perfect underwent a formal split in response to two structural pressures: (1) the need to distinguish between present and past stative meanings, and (2) the language-wide pressure to specialize zero grade as the 'weak' vocalism *par excellence*. In the singular only the first factor was operative; the result was the creation of the pluperfect 1-3 sg. **memón-m̥,* **-s,* **-t,* with the active secondary endings. In the 3 pl., on the other hand, both forces came into play. In principle, more than one outcome would have been possible: **memén-r̥s* could first have given rise to an 'active' pluperfect **memén-n̥t,* for example, and the newly

[88] The forms of the dual are for obvious reasons omitted.

differentiated perfect and pluperfect could later—perhaps much later—have both been remade to zero-grade **memn-érs* (> **-ḗr*) and **memn-ént,* respectively. In fact, however, the apophonic correction took place first; the initial development was apparently the creation of **memn-érs* as a modernized synchronic variant of **memén-r̥s.* The result was a textbook environment for the operation of Kurylowicz's 'Fourth Law of Analogy':[89] in accordance with the well-known principle governing the distribution of relic forms, the newer **memn-érs* was specialized in the 'primary' value of the previously undifferentiated full-grade form—i.e. as a stative present—while the original **memén-r̥s* survived in its 'secondary' value as a stative preterite. There was no recourse to the active secondary ending **-(e)nt* because none was needed.

The late PIE vocalism of the other 'weak' forms of the pluperfect is not directly recoverable. Greek shows zero grade everywhere outside the singular (ἐἰκτην,ἐδεἰδιμεν, etc.), but this could simply reflect the influence of the perfect proper, as must be assumed in any case for the 3 pl. (ἴσαν, δεἰδισαν, etc.; cf. §25). In the Rigveda, the zero-grade 3 du. form *ávivikṭām* (X. 12. 4) is probably a pluperfect in origin (cf. 3 sg. perf. *vivyāca,* plpf. *ávivyak*); synchronically, however, it is an imperfect, possibly influenced by the corresponding present (3 du. *vivikṭáḥ* (III. 54. 8, VIII. 12. 24)).[90] On the whole, the facts are perhaps most compatible with the hypothesis that zero grade was extended to the 1-3 du. and 1-2 pl. of the pluperfect within the parent language itself, leaving the *e*-grade of *cikōitərəš,* etc. to survive as an archaism in the 3 pl. alone. Ultimately, however, the exact distribution of *e*-grade and zero grade in late PIE is unimportant. The essential fact—the result to which we will return in subsequent chapters—is that the familiar **o* : **ze̯ro* ablaut pattern of the perfect seems to have replaced an older, almost wholly vanished **o* : **e* pattern.

§30. Although the pluperfect and the modal forms of the perfect were morphologically active, the ancient semantic and derivational ties of the perfect are with the middle. Many examples can be found of originally stative perfects correlated with present and aorist middles. Thus, for example, Gk. ὄλωλα 'I am lost' is in functional terms the perfect of ὄλλυμαι 'I perish' (aor. ὠλόμην) rather than of ὄλλυμι 'I destroy' (aor. ὤλεσα); πέποιθα 'I trust' belongs with πείθομαι 'I obey, am persuaded' (aor. ἐπιθόμην) rather than with πείθω

[89] 'Quand à la suite d'une transformation morphologique une forme subit la différenciation, la forme nouvelle correspond à sa fonction primaire (de fondation), la forme ancienne est réservée pour la fonction secondaire (fondée)' (Kurylowicz 1949: 30).

[90] Full-grade 2 pl. forms in the Rigveda are *ajabhartana* (x. 72. 7), *ajagānta* (x. 155. 4), and *ajagantana* (x. 86. 22); all of these, however, are in the late tenth book and could have acquired their vocalism from the corresponding imperative forms, where full grade would have been quasi-regular. A 2 pl. imperative with zero grade is *á vavr̥ttana* (v. 61. 16).

'I persuade' (aor. ἔπεισα). So too in Vedic, where *mamára* and *sāsáha* are the perfects, respectively, of *márate* (*mriyate*) 'dies' and *sáhate* 'conquers'; and in Latin, where *(re)uertī* is the perfect of *(re)uertor* 'I turn (back) (intr.)'. From a very early date, however, the synchronic association of certain perfects (e.g. **ĝeĝn(ó)h₃-* 'know', Ved. *jajñau,* Lat. *gnōuī*) with morphologically active presents (cf. Ved. *jānáti,* Lat. *(g)nōscō,* etc.), together with the active inflection of the perfect outside the *hic et nunc* indicative, led to the rise of a new, specifically medial counterpart to the inherited perfect 'active'. The 3 sg. perfect corresponding to Ved. *jáyate* 'is born' (< **ĝn̥h₁-ié/ó-*) is thus not *jajána* (< **ĝeĝónh₁-e*), which means 'has given birth to', but *jajñé* (< **ĝeĝn̥(h₁)-ói*) 'has been born'; the original meaning of PIE **ĝeĝónh₁-e* is preserved in Gk. γέγονε, which is still intransitive (: pres. γίγνεται). Similarly, Ved. *mányate* (< **mn̥-ié/ó-*) 'thinks' has a medialized perfect **mamné* (2, 3 du. *mamnáth(e)*; cf. YAv. 3 sg. *mamne*), while Greek, Latin, and Germanic, where the deponent present **mn̥-ié/ó-* has been lost or semantically specialized (cf. Gk. μαίνομαι 'I rage'), retain the perfect active (Gk. μέμονα, Lat. *meminī,* Go. *man*).

The perfect middle is a regular category in Indo-Iranian and Greek, where it is made by adding the middle endings to the weak (zero-grade) perfect stem. An analogue of the perfect middle also underlies the deponent suffixless preterites of Old Irish—forms which, like their Indo-Iranian counterparts, conspicuously employ the archaic and otherwise unproductive ending **-or/*-oi* in the 3 sg. (OIr. *do ·ménair* < **memnór* ≅ YAv. *mamne* < **memnói*).[91] Outside Indo-Iranian, Greek, and Celtic, the PIE perfect is robustly attested only in Germanic and Italic. The fact that neither of these branches has an inflected perfect middle has been taken to show that the introduction of the active : middle opposition into the perfect system was an independent innovation of Indo-Iranian, Greek, and Celtic. But there can be no confidence on this point, since Germanic and Italic are languages in which the PIE middle has developed into a simple passive or oppositional intransitive (cf. Go. *af-lausjada* 'is released', Lat. *soluitur* 'is released, dissolves, etc.' vs. Gk. ἀπολύεται 'is released' but also 'releases in one's own interest, ransoms'). A pre-Germanic or pre-Italic perfect middle, if there *had* been one, would automatically have evolved into a perfect or perfective preterite passive, a grammatical function notoriously susceptible to replacement by participial paraphrases of the type that in fact serve as perfect passives in Germanic and Italic (Go. *af-lausiþs was* (*warþ*), Lat. *solūtus est* 'was/has been released'). Evidence *for* the one-time existence of the perfect middle in Germanic is supplied by the 3 sg. in **-dai* of the dental preterite (cf. Runic Norse 3 sg. *talgidai* 'carved'), which appears to have originated in constructions of the

[91] The palatalization pattern of the Old Irish forms (1, 2 sg. *do ménar,* 3 sg. *do ·ménair*) simply imitates that of the active (cf. e.g. 1, 2 sg. *memad,* 3 sg. *memaid* 'broke').

type **warm-ē dedai* (= Ved. perf. mid. *dadhé*) 'became warm, cal-ē factus est'.[92] On the Italic side, the Oscan inflected future perfect passive *comparascuster* 'consulta erit' suggests that in this branch too the fixation of the 'standard' periphrastic perfect passive may have been comparatively recent.

The perfect middle, then, was 'late' vis-à-vis the perfect active, but almost certainly had its beginnings in the parent language. OIr. *ménair* and YAv. *mamne,* with their 3 sg. in **-or*/**-oi,* are more than typological lookalikes; they have all the appearance of a genuine word equation. The middle **memn-ór* must have contrasted in the parent language with the older perfect active **memón-e*: the middle meant 'is in the state of having brought to mind', corresponding synchronically to the present **mn̥-ié-tor* (= Ved. *mánya*te, OIr. *moinethar,* etc.) and the root aorist **mén-to* (= GAv. *maṇtā*), while the active had the purely lexicalized meaning 'has in mind, remembers', without the normal implicit reference to the processual sense of the root **men-*. It is striking that the active perfects Gk. μέμονα, Lat. *meminī,* and Go. *man* are synchronically unmotivated in all three languages; none is the perfect 'of' anything else.[93]

§31. The middle-like function of the perfect in PIE is matched at the formal level by the well-known resemblance of the perfect and middle endings. Many of the basic facts have already been touched on in §§4 ff.; here we review the similarities and differences more systematically. A tabular summary is given in §37.

Since the middle was a category of voice rather than a tense, the middle endings in PIE were employed with a wide variety of present and aorist stems. As in the active, there were distinct primary and secondary forms, the difference between the two being marked, in the clearest cases, by a particle. In the active this particle was **i* (3 sg. primary **-ti* : secondary **-t,* etc.), an element in all likelihood identical with the **-i* of the locative singular (cf. Ved. *pitári,*

[92] A full account of the Germanic weak preterite (correcting, *inter alia,* Jasanoff 1978*a* : 91–3) will appear elsewhere. The key fact is that if, as seems likely, the source construction was a periphrasis involving the verb 'to do', the specific form of 'do' underlying the Proto-Germanic 3 sg. in **-dai* would have to have had preterital meaning but a primary middle ending. This could only have been the perfect middle **dedai* (< **dhedhh$_1$ -ói*), which here, as in Indo-Iranian and Celtic, had the dentalless ending **-or* / **-oi.* The perfect middle—though not, apparently, the perfect middle of 'do' itself—has figured prominently in the literature on the weak preterite since Collitz 1912. For the development of expressions meaning 'become' from passive or reflexive forms of 'make, do' compare e.g. Sp. *hacerse* (*se está haciendo oscuro* 'it's becoming dark'), Russ. *delat́sja* (*pogoda delajetsja xuže* 'the weather is getting worse'), or Lat. *factus est* itself.

[93] Other possible PIE perfect middles were **ḱeḱn̥d-ór* 'shines' (cf. Ved. 3 pl. *śāśadré,* ptcp. *śāśadāná-*, Gk. κέκασται 'excels'; see García Ramón 1988–90: 27–34) and **bhebhudh-ór* 'is aware (of)' (cf. Ved. ptcp. *bubudhāná-* 'awake', Gk. πέπυσται 'understands'). On the other hand, the formal agreement between Ved. *jajñé* and OIr. *( )génair* 'was born' is shown to be secondary by Gk. γέγονε, which still patterns synchronically as the perfect of γέγυετται. An obvious model for the post-IE creation of **ĝeĝn*(h_1)*-ór* would have been the inherited pair **mn̥-ié-tor* (pres.) : **memn-ór* (perf.).See further App. 2, where a case is made for the PIE antiquity of the perfect middles **dedrḱ-ór* 'appears', **ḱeḱluu̯-ór* 'is famed (as)', and **u̯id-ór* 'is known'.

Gk. πατέρι, etc.) and with the deictic stem of Ved. *áyam* 'this (nom. sg. masc.)', Lat. *is* 'this/that', Go. *is* 'he', etc. In the middle the particle that marked the primary endings was **r,* probably identical with the deictic element **-r* of pronominal adverbs like Go. *hwar, þar* 'where, there', Ved. *kárhi, tárhi* 'id.', etc. The languages that best maintain this distribution are Hittite and Tocharian, where *r*-endings appear in the present but not the preterite middle (cf. Hitt. 3 sg. primary *-(t)ta, -(t)tari* (< **-tor(i)*) vs. secondary *-(t)tat(i)* (< **-to* + **ti*),[94] Toch. B 3 sg. *-tär* (< **-tor*) vs. *-te* (< **-to*)). Italic and Celtic, which also have *r*-endings in the middle, are less conservative; here the distinction between the primary and secondary endings—or, rather, between the *inherited* primary and secondary endings—has been lost. Latin and Oscan employ *r*-endings, including the 3 sg. in Lat. *-tur,* Osc. *-ter* and the 3 pl. in Lat. *-ntur,* Osc. *-nter,* in both the primary and secondary tenses. Umbrian has *both -(n)ter* and *-(n)tur,* the former patterning as primary and the latter as secondary (cf. §36). Neither Latin nor the Sabellic languages retain any trace of *r*-less **-to* and **-nto,* the only evi- dence for which in Italic is provided by Venetic preterite forms of the type 3 sg. *donasto* 'gave'. On the Celtic side, *r*-less **-(n)to* is a relic as well, being confined in Old Irish to the diathetically neutral 3 sg. imperfect in **-to* (e.g. OIr. *no·bered* 'would carry' (active pres. *berid*), *ro·cluined* 'would hear' (deponent pres. *ro·cluinethar*)).[95] Notable in both Italic and Celtic is the absence of **-r* in the imperative (cf. Lat. 2 sg. *sequere* 'follow!' < **sekʷe-so,* OIr. *cluinte* 'hear!').[96]

The other IE languages that retain recognizable reflexes of the middle, notably Indo-Iranian, Greek, and Germanic, have primary endings in **-i* rather than **-r* (Ved. *bhárate,* Gk. φέρεται (Arcado-Cyprian -τοι, Myc. *-to* [-toi]), Go. *bairada* < **-aðai*). The extension of **-i* from the active to the middle in these languages was a simple case of analogical extension; it is impossible to tell whether it took place more than once independently or was a single event of the dialectal PIE period.[97]

[94] The fundamental discussion of the *r* -endings in Hittite is by Yoshida (1990; see esp. 103–19), who shows that (1) final non-syllabic **-r* was lost by regular sound change after unstressed vowels in Anatolian; (2) the accented primary middle endings, which retained their **-r* after the conditioned change in (1), were subsequently enlarged by the particle **i* ; and (3) the new sequence *-ri,* sporadically apocopated to *-r* in Luvian and Palaic, was optionally extended to all present middle forms, partly within the historical period. The inner-Anatolian origin of Hitt. *-ri* renders untenable the analysis of the *r* -middle in Jasanoff 1977.

[95] To which can probably be added the newly discovered Celtiberian 3 pl. *auxanto* (Botorrita III), drawn to my attention by Calvert Watkins.

[96] The influence of the imperative is no doubt partly responsible for the absence of **-r* throughout the second person in Latin (2 sg. *-re, -ris,* 2 pl. *-mini*) and in the 2 pl. in Old Irish (*-(i)d*).

[97] The late Jochem Schindler suggested to me in 1991 that the replacement of **-r* by **-i* in the primary middle endings was a shared innovation of the IE dialects that remained after the successive departure of Anatolian, Tocharian, and Italo-Celtic from the IE community. The Latin perfect endings **-ai, *-istai, *-ei* [*t*], of course, have nothing to do with the middle as such (cf. §20).

§32. Of the middle desinences proper, two—those of the 1 sg. (*-h_2e) and 2 sg. (*-th_2e)—are identical with the corresponding perfect endings. The 1 sg. in *-h_2e/*-h_2er/*-h_2ei [-h_2a/-$h_2$ar/-$h_2$ai] is directly preserved in Anatolian (Hitt. -*(ḫ)ḫa(ri), -(ḫ)ḫat(i)*), Tocharian (A 1 sg. pret. -*e* < *-*ai*), Indo-Iranian (Ved. -*e*), Italic (Lat. -*or* < *-*o-*h_2*er),* Celtic (OIr. -*ur* = Lat. -*or*) and Germanic (Runic Norse -*e*). Variants with analogical *-*m*- are found in Tocharian (B -*mar,* pret. -*mai*; A -*mār*) and Greek (-μαι;, -μᾱν); these are seen to be secondary from the *a*-colour of the following vowel. As clearly shown by Cowgill (1968: 28), there is no good evidence for a reduced 1 sg. middle ending *-h_2. The Indo-Iranian secondary ending *-*i* (Ved. *á*-*duhi* 'I milked', etc.) is an analogical creation, built according to the proportion 1 pl. *-*madhai,* 1 du. *-*u̯adhai* (primary) : 1 pl. *-*madhi,* 1 du. *-*u̯adhi* (secondary) :: 1 sg. *-*ai* (primary) : *X,* where *X* was solved as *-*i*. In the 2 sg., *-$th_2e(r)$ [-th_2a(r)] is preserved intact in Anatolian (Hitt. -*(t)tari* (rare), -*(t)tati, -(t)tat*) and Tocharian (A -*tār,* B -*tar*); here too, though with added material, belong Ved. -*thāḥ* and OIr. -*ther* (2 sg. deponent present), -*the* (2 sg. deponent imperative) and -*tha* (2 sg. imperfect). Competing with these *t*-endings are analogical *s*-forms, which are probably not of PIE date (Ved. -*se,* Av. -*he, -še, -šă̆,* Gk. -σαι, -σο, Lat. -*re* (-*ris),* Go. -*za* < *-*zai*). Note that neither in the 1 sg. nor the 2 sg. is there any basis for the assumption of variants *-h_2o or *-th_2o, with *o*-timbre of the desinential vowel.

At the other extreme from *-h_2e and *-th_2e stand those middle endings—notably the 1 pl. in *-$medhh_2$ and the 2 pl. in *-*dhu̯e* or *-*dhu̯e*—which bear no visible relationship to their perfect counterparts. The ending *-$medhh_2$ (: Ved. -*mahi,* GAv. -*maidī,* Gk. -μεθα) is presumably to be segmented into a core desinence *-*me* followed by an otherwise unknown particle *dhh_2; the synchronic reality of this analysis was responsible for the creation of Hitt. -*wašta* and Gk. -μεσθα, both apparently remade on the basis of the primary active ending *-*mes*/*-*mos*. It is not out of the question that *-$medhh_2$ had a primary counterpart *-$medhh_2$-*r* in the parent language. Such an ending is actually found in Toch. AB -*mtär* (with analogical *ä*-vocalism), and possibly also in Hitt. -*wašta,* which can as easily be derived from pre-Anatolian *-*wastar* as from *-*wasta*.[98] Elsewhere, Indo-Iranian attests the primary ending *-*madhai* (Ved. -*mahe,* GAv. -*maidē*), with analogical *-*ai* from the 1-3 sg. and 3 pl., while Greek, as always, ignores the primary : secondary contrast in the 1 pl. The Italic and Celtic ending is *-*mor* (Lat. -*mur,* OIr. -*mir, -mer,* archaic -*mor*), a characteristic innovation of these two branches.

[98] Cf. n. 39. The -*w* - is, as in the active, taken from the dual.

The 2 pl. middle ending is reconstructible as *-*dh̯ue,* with a Sievers variant *-*dhuu̯e*; the former underlies Gk. -σϑε, while the latter is responsible for GAv. -*duiiēⁱ,* -*dūm* < *-*duu̯əm* and for the extremely frequent disyllabic scansion of Ved. -*dhve, -dhvam*. No connection is discernible between the sequence *-*dh(u)u̯*- and any other ending or part of an ending in the PIE verbal system. It is not surprising, therefore, that *-*dh*- was analogically replaced by *-*t*- in Anatolian, where Hitt. -*dduma(ri)* and Luv. -*dduwar* point to an immediate preform *-*tuu̯or(i)*. The etymologically ambiguous dentals of OIr. -*(i)d* and Toch. A -*cär,* B -*tär* (pret. A -*c,* B -*t*) conceivably go back to *-*t*- as well. Outside Indo-Iranian and Greek, a clear reflex of *-*dh*- appears only in the Armenian aorist passive and imperative ending -*(a)ruk‘* < *-*dhuu̯e(s),* which shows the regular Armenian change of intervocalic *-*dh*- to -*r*- (cf. Jasanoff 1979*b*: 144 ff.).[99]

Distinct middle endings in the dual are almost entirely confined to Indo-Iranian and Greek. The Indo-Iranian 1 du. in *-*u̯adh(a)i* (cf. Ved. -*vahe, -vahi*), a transparent creation on the basis of the 1 pl. in *-*madh(a)i,* is of no independent value. In the second and third persons, Indo-Iranian shows *-*aithai* and *-*aitai* (Ved. -*et(h)e,* Av. -*aēⁱtēⁱ*) in thematic presents, with a diphthong that invites comparison with the -*ai*- of Toch. B 2 du. mid. impv. *pyamttsait* (unknown meaning). The corresponding secondary forms are less clear; the Vedic evidence points to *-*aithām* (> -*ethām)* and *-*aitām* (> -*etām),* respectively, while Avestan has only -*aēⁱtəm* (3 du.) < *-*aitam*. Athematic stems show not *-*ĭthai,* *-*ĭtai,* etc., as might have been predicted from the thematic forms, but *-*āt(h)ai* and *-*āt(h)ăm* (Ved. -*āt(h)e,* -*āt(h)ām,* Av. -*āitēⁱ,* -*ātəm*), with a long vowel that is probably to be identified with the -*ā*- of the Younger Avestan 3 pl. middle ending -*āire* < *-*ēroi* (cf. §38). There is little reliably inherited material in these forms, which reflect the effects of millennia of pressure from the active endings of the dual and the middle endings of the plural. The same is true for Greek, where the middle endings of the dual (primary 2, 3 du. -σϑον, secondary 2 du. -σϑον, 3 du. -σϑᾶν) are obvious modifications of the corresponding active forms under the influence of the 2 pl. middle in -σϑε.

§33. The 3 sg. and 3 pl. middle endings present a more complicated picture. In the 3 sg. we find both *-*o* (primary *-*or,* *-*oi*) and ‘renewed’ *-*to* (*-*tor,* *-*toi*), seemingly standing in the same formal relationship to each other as 1 sg. *-*h₂e(r)* to later *-*mar,* *-*mai,* etc., and 2 sg. *-*th₂e(r)* to later *-*sor,* *-*soi,* etc. But the pair *-*o* : *-*to* differs from the corresponding pairs in the 1 sg. and 2 sg. in two respects: (1) both terms—*-*to* as well as *-*o*—must be reconstructed for

[99] A less attractive alternative is offered by Klingenschmitt (1982: 20 f.).

the protolanguage; and (2) the *t*-less ending *-*o* has a different distribution, and for the most part a more restricted range of functions, than *-*to*. In Indo-Iranian a certain number of present stems appear with both -*e* (< *-*oi*) and -*te* (< *-*toi*) in the 3 sg.; in such cases the forms in -*e* are almost invariably passive, as e.g. in Ved. *bruvé* (= YAv. °*mruiiẽ*) 'is called' beside *brūté* (= YAv. °*mrūite*) 'invokes', *stáve* 'is praised' beside *stávate* 'is praised' *and* 'praises', and *sr̥ṇvé* 'is heard, is famed as' beside *sr̥ṇute* 'hears'. Passive value is likewise associated with the *t*-less 3 sg. middle ending in Old Irish, where -*a(i)r* is confined to the passive/impersonal of certain classes of strong verbs (e.g. *berair, ·berar* 'is borne', *tíagair, ·tíagar* 'one goes', *benair, ·benar* 'is struck'), while -*thir*/-*thar* is the 3 sg. ending in deponents (e.g. *seichithir, ·seichethar* 'follows', *midithir, ·midethar* 'judges').[100]

A thematic 3 sg. in *-*or*/*-*oi,* comparable to OIr. *·berar,* almost certainly also underlies the Gothic 3 sg. passive in -*ada* < *-*otoi* (type *bairada* 'is borne'). The paradigm of the Gothic passive is characterized by invariant *o*-colour of the thematic vowel: *-*o*- appears both where other IE languages have *-*o*- (1 sg. *bairada* ≅ Gk. φέρομαι, 1 pl. *bairanda* ≅ φερόμεθα, 3 pl. *bairanda* = φέρονται) and where other IE languages have *-*e*- (2 sg. *bairaza* ≠ φέρε[σ]αι, 3 sg. *bairada* ≠ φέρεται, 2 pl. *bairanda* ≠ φέρεσθε).[101] This phenomenon of 'persistent' *-*o*-, which has no counterpart in the active (cf. *baira, -is, -iþ,* etc.), can easily be explained on the assumption that the original pre-Germanic form of the 3 sg. passive was **bheroi*. The absence of a 3 sg. **bheretoi* from the emerging passive paradigm meant, in effect, that the *e*-variant of the thematic vowel was confined to the 2 sg. and 2 pl., where it was eventually replaced by the more solidly established *-*o*- of the first and third persons. Later, when speakers set out to replace the overshort dentalless 3 sg. **bheroi*/**berai* by a clearer structure consisting of the thematic stem and the productive dental variant of the middle ending, **bherotoi*/ **beradai* was the only possible choice.

The ending *-*o(r)* was not, however, confined to passives in the parent language. In Indo-Iranian and Celtic, as we have seen, *-*or*/*-*oi* was the regular termination of the 3 sg. perfect middle. *-*or*/*-*oi* must also be reconstructed for the PIE athematic oxytone deponent class represented by Ved. *duhé* 'gives

[100] The inherited character of the passive type *berair, ·berar* is contested by Cowgill (1983: 102), who takes the absence of syncope in forms like *do formagar* 'is increased' (: act. *do formaig* 'increases') to indicate that -*a(i)r* goes back to *-*ŗ* rather than *-*or*. But he has no convincing explanation for where this *-*ŗ* could have come from, and he is unable to rule out the possibility that the medial syllable of *·formagar* was restored or retained by analogy. The distribution of -*a(i)r* vs. -*thir*/-*ther* in the passive is another sign of its archaic status; see below.

[101] The 2 pl. ending, of course, has been remodelled to agree with the 3 pl. We might have expected *-*adu* or *-*adw* < *-*o* -*dh(u)e*.

(milk)', *cité* 'is seen, is noticeable', and Gmc. **dugai[þ]* (ON *dugir*) 'helps' (= Ved. *duhé*), **libai[þ]* (OHG *lebēt*) 'lives'; the same formation underlies Tocharian presents of the type B 3 sg. *lipetär* 'is left' < **lipótor* (for **lipór;* cf. Gmc. **libai[þ]*), *lyuketär* 'shines' < **lukótor* (for **lukór*).[102] Finally, a *t*-less 3 sg. must be assumed for the familiar PIE root deponent type with full (or lengthened) grade and accent on the root, even though **-o(r)* was unstable in this class and liable to be replaced by **-to(r)*. Thus, a PIE 3 sg. **ḱe̯i̯or* 'lies' is assured by Ved. *śáye* and Luv. *ziyar* 'id.' (cf. Ch. 1 n. 46), beside which Hitt. *kitta(ri)* and Gk. κεῖται are obviously secondary.[103] Similarly, a 3 sg. **h_1ḗs$_{tor}$* (or reduplicated **h_1é$h_1$sor*?) 'sits' is guaranteed by Hitt. *eša(ri)* 'sits down', despite the *t*-ending of Ved. *áste* and Gk. ἧσται. Even in the case of **u̯es-* 'wear', where there is no direct evidence for the dentalless ending (cf. Hitt. *wešta(ri),* Ved. *váste,* Gk. (plpf.) ἕστο), the parallelism with 'lie' and 'sit' and the productivity of **-to(r)* make a preform **u̯ésor* very likely.

§34. The need to assume both **-o(r)* and **-to(r)* for PIE, and above all the existence of passive : middle pairs like Ved. *bruvé* : *brūté,* have led some scholars, notably Oettinger (1976), Rix (1988), and most recently Kümmel (1996), to maintain that PIE had a 'stative' diathesis, distinct from the middle, in the third person. Terminological problems aside, this claim is too strong. The functional contrast between **-o(r)* and **-to(r)* was clearly restricted to certain stem types in the parent language. Athematic root deponents, as we have seen, probably originally had **-o(r)* everywhere. On the other hand, **-o(r)* seems not to have figured at all in the paradigm of the PIE derived thematic presents in **-sḱe/o-* and **-i̯e/o-* (including **-e̯i̯e/o-* and **-āi̯e/o-* < **-eh$_2$i̯e/o-*), where the longer ending **-to(r)* had both passive and middle value. Thus, in Hittite, where *t*-less *-a(ri)* is well attested in athematic stems, only *-(t)ta(ri)* is found in the *mi*-conjugation verbs in *-šḱe/a-* (3 sg. *-šḱitta(ri), -šḱatta(ri)*), *-ie-/-iya-* (3 sg. *-ietta(ri), -iyatta(ri)*), and *-āi-/-ā-* (3 sg. *-āitta(ri)*); the absence of forms in **-šḱa(ri), *-iya(ri),* or **-ā(ri)* is striking.[104] In Vedic, present stems in *-ya-* form 3 sg. middles in *-yate,* not **-ye,* even when they are semantically passive (cf. *mriyate* (= Lat. *moritur*) 'dies', *jā́yate* (= OIr. *gainethar*) 'is born', *vidyáte* 'is found', *dṛ́syate* 'is seen'). The antiquity of this distribution is strikingly

[102] The derivation of the Germanic third class weak verbs (3 sg. **-aiþ* < **-ai* + *-þ*) and the Tocharian class III presents (B 3 sg. *-etär,* A *-atär*) from athematic middles in 3 sg. **-or* is argued at length in Jasanoff 1978*a,* chs. 3 and 2, respectively. See §§91 ff., where the analysis is taken further.

[103] In Greek, where the dentalless ending no longer exists, the replacement of **-oi* by *-τοι (-τοι) would have been automatic.*

[104] The sequences *-i̯ya(ri)* and *-āri,* where they occur, are always from athematic stems: cf. *ḫalziya(ri)* 'is called' < *ḫalzi-* + *-ari, tuqqāri* 'is important' < *tuqq-* + *-āri,* etc.

confirmed by the situation in Old Irish, where the majority of strong verbs make *t*-less passives in *-a(i)r,* but where inherited *-i̯e/o-*presents like *gairid* 'calls', together with the weak verbs in *-ā-* (< *-āi̯e/o-*) and *-ī-* (< *-ēi̯e/o-*), make their passives with a dental ending (cf. *gairthir, ·gairther; ·mórthar* 'is praised', *·léicther* 'is left').

All this tends to confirm the widespread view of *-*to(r)* as a modernized form of *-*o(r),* typologically parallel to Gk. 1 sg. -μαι; beside Hitt. *-(ḫ)ḫa(ri)* and Gk. 2 sg. -σαι beside Hitt. *-(t)ta(ti).* The locus of the newer ending may well have been in the derived thematic presents in *-*ske/o-* and *-*i̯e/o-*, where the elimination of *-*o(r),* if it ever existed, was a *fait accompli* by the end of the PIE period. From *ske/o-* and *i̯e/o-*presents, *-*to(r)* was extended to other stem classes. In root deponents, which had no contrasting active forms, the replacement process was entirely straightforward: forms of the type **u̯ésor* 'wears' simply gave way, either within the parent language itself or in the early dialectal period, to the quasi-attested *u̯éstor,* etc. But in cases where the middle was opposed to an active, both the older form in *-*o(r)* and the newer form in *-*to(r)* sometimes coexisted in late PIE, the latter taking on the functions of a 'true' middle (i.e. reciprocal, self-benefactive, etc.) and the former surviving in the value of a passive or oppositional intransitive. Early PIE **bhéror,* originally meaning both 'bears (for) oneself' and 'is borne', thus came to be represented by two later daughter forms, *bhéretor* 'bears (for) oneself' (= Skt. *bhárate*) and *bhéror* 'is borne' (= OIr. *·berar*). Similarly, the root *steu- 'praise, proclaim' eventually made both a 3 sg. *stéu̯or* 'is praised, proclaimed' (= Ved. *stáve*) and a 3 sg. *stéutor* 'praises; vaunts oneself, boasts' (= Gk. στεῦται). The 3 sg. of the PIE 'stative' was thus a more or less transitory effect of the replacement of *-*o(r)* by *-*to(r)* in certain stem classes. There is no evidence for a fully developed PIE passive diathesis distinct from the middle.[105]

§35. The 3 pl. counterparts of *-*o* and *-*to* were *-*ro* (var. *-*ēro*) and *-*nto,* respectively. The synchronic association of the archaic ending *-*(ē)ro* with the 3 sg. in *-*o* is shown by the Vedic present forms *duhré* (impf. *áduhra*[*n*]) and *śére* (impf. *ásera*[*n*]; cf. YAv. *sōire* /*saēre*) beside 3 sg. *duhé* (impf. *áduha*[*t*]) and *śáye* (impf. *ásaya*[*t*]), as well as by the appearance of *-re* in the perfect middle (cf. *cikitré, jajñiré,* etc.).[106] The pattern is also seen in YAv. °*γnāire* 'are slain (?)'

[105] Oettinger (1993) appears to have edged toward this view.

[106] *-ran* (*-ram*) is also found in the so-called 'passive' aorist, where it serves as the plural counterpart to the 3 sg. in *-i* (cf. *ábodhi, abudhran* 'awoke'; *ásarji, ásṛgran,* 'was/were released'; *ápādi, apadran* 'went', etc.). As will be discussed at length in Chs. 6 and 7 (see especially §121), the *-i* of these forms is probably the replacement of older *-*o.*

(cf. Insler 1967: 259 ff.) beside 3 sg. °*ɣne,* and in °*mr(a)uuāire* 'are spoken' beside 3 sg. °*mruiiḗ,* with *-āire* (< *-*ḗro(i)*) standing in the same relation to the PIE 3 pl. perfect in *-*ḗr* as Vedic *-re* to the PIE 3 pl. perfect in *-*ɤ*. To judge from the limited attestation of *-*(ḗ)ro,* the generalization of *-*nto* in the parent language may have been further advanced than the similar generalization of *-*to* at the expense of *-*o*. In any case, the only direct evidence for *-*(ḗ)ro* outside Indo-Iranian comes from the unique Toch. B form *stāre* 'are, sunt', evidently representing the unstressed treatment of earlier **stare* < **sth*$_2$*-ró*. It is significant that the 3 sg. counterpart of *stare* is *ste* < **sth*$_2$*-ó,* the only verbal form in Tocharian to preserve the dentalless ending *-*o*. Surprisingly, neither *ste* nor *stare* shows the usual *hic et nunc* *-*r* of the primary middle endings. But *ste,* unlike *stare,* has a byform in *-r* before enclitic pronouns (cf. *star-ne* 'est ei', *starś* 'est tibi', etc. vs. *stare-me* 'sunt eis')—a fact which suggests that the lack of *-r* in the 3 sg. may have been taken over from the 3 pl., where the use of unextended *-*ro* for expected *-*ror* could have been due to dissimilatory avoidance or to actual phonetic dissimilation. The apparent substitution of *-*ro* for *-*ror* in Tocharian means that there is no direct reflex of the sequence *-*ror* in any IE language.[107]

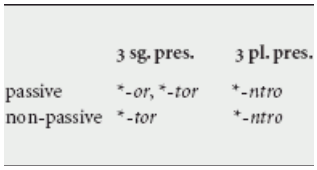
§36. The 3 pl. in *-*ro* also played a role in the far-reaching changes that affected the third person middle endings in Italic and Celtic. A fundamental innovation of 'Italo-Celtic' was the creation, through blending of an *nt*-ending with an *r*-ending, of a 3 pl. present middle in *-*ntro*.[108] Since this was specifically a primary ending, the two 'inputs' to the new hybrid should in principle have been the inherited primary ending *-*ntor* and the theoretically expected primary ending *-*ror*. These would have combined to produce *-*ntror,* from which *-*ntro* could be explained as a dissimilation product. But starting from *r*-less *-*ro,* as in Tocharian, rather than *-*ror,* permits a simpler and phonetically more plausible picture, with *-*ntor* and *-*ro* combining to give *-*ntro* directly.

The generalization of *-*ntro* as the all-purpose 3 pl. present middle ending, together with the restriction of the dentalless 3 sg. in *-*or* to passive and intransitive functions, yielded the Italo-Celtic distribution shown in Fig. 2.4.

[107] On *ste* and *stare* cf. Adams 1988: 58–60, with nn. 22–6. A very different view of these forms, due to Winter (1993: 203) and Hackstein (1995: 272 ff.), takes *ste* (*stär*) from **h*$_1$*s-sḱe -to(r),* aligning it with the alternative 3 pl. form *skente* (*skentär*) < **h*$_1$*s -sḱo -nto(r)* (cf. Gk. ἔσκε, OLat. *escit*). The phonology is impeccable, but the difficulty of accounting for *stare* in this scheme makes the derivation from **steh*$_2$ - preferable.

[108] I use the term 'Italo-Celtic' neutrally, without taking a position on whether the two branches go back to a unitary common language or merely represent different strands of a well-marked dialect cluster. The discussion in this section summarizes the argument of Jasanoff 1997*b,* where a fuller treatment is provided.

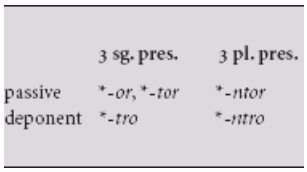
FIGURE2.4



	3 sg. pres.	3 pl. pres.
passive	*-*or*, *-*tor*	*-*ntro*
non-passive	*-*tor*	*-*ntro*

This system was exploited by the two branches in different ways. In Celtic, the existence of *-*ntro* prompted the creation of an analogical 3 sg. in *-*tro,* which spread at the expense of *-*tor*. The replacement, however, was not complete. *-*tro* was generalized in the middle proper, but the older ending *-*tor* was 'protected' in its passive function by the rhyming 3 sg. passive in *-*or*. The result was a functional split: *-*tro* became the regular ending of the 3 sg. middle proper, and eventually of the 3 sg. deponent, while *-*tor* not only survived in the passive, but engendered an analogical 3 pl. passive in *-*ntor* as well. Pre-Insular Celtic thus had the system shown in Fig. 2.5:

FIGURE2.5



	3 sg. pres.	3 pl. pres.
passive	*-*or*, *-*tor*	*-*ntor*
deponent	*-*tro*	*-*ntro*

The passive in *-*(n)tor* is directly continued in Old Welsh impersonal forms of the type 3 sg. *cephitor* 'is obtained' and 3 pl. *plantonnor* 'are dug', which go back to preforms in *-*(n)tor-es,* with the absolute particle *-*(e)s*.[109] *-*tor* and *-*ntor* also underlie the forms of the Old Irish passive, the susceptibility of which to medial-syllable syncope shows that a vowel originally stood between the dental and the *-r* of the endings (cf. *˙carthar,* absol. *carthair* 'is loved' < **k̨arātor,* absol.

[109] I follow Cowgill's classic analysis of the Insular Celtic verb (Cowgill 1975*b*), according to which both the absolute and conjunct endings rest on the PIE primary forms, with or without the addition of a particle **(e)s*.

**karātores*). By contrast, the Irish deponent endings *-thar* (conj.) and *-thir* (absol.) can only go back to preforms containing a **-tr-* cluster, as shown by the behaviour of the dental and the **-r-* as a single unit with respect to palatalization (*-thar* = [-ϑar], *-thir* = [-ϑ'ir']), and by the failure of the stem vowel preceding the endings to undergo syncope (cf. 3 sg. *˙gainet(h)ar* < **gan'iϑr* < **ganitro, gainithir* < **gan'iϑ'r'* < **ganitres,* like *arathar* 'plough' < **araϑr* < **aratron*).[110]

A new 3 sg. in **-tro* was eventually created in Italic as well. Here, however, the first step was probably the analogical extension of **-r* from the primary to the secondary endings (though see note 57). Thus, the 3 sg. secondary ending **-to* was replaced by **-tor,* the 1 pl. in **-mo* (*vel sim.*) was replaced by **-mor,* and—crucially for our purposes—the 3 pl. secondary ending **-nto* was replaced by **-ntor,* with the same mechanical substitution of the sequence **-or* for **-o* as in the 3 sg. The result was the pre-Italic pattern of Fig. 2.6:

FIGURE2.6

	3 sg.	3 pl.
primary	**-tor* (**-or*)	**-ntro*
secondary	**-tor* (**-or*)	**-ntor*

**-tro* was now introduced as a 3 sg. *primary* ending in imitation of the pattern **-ntor* (secondary) : **-ntro* (primary) in the 3 pl. Primary **-tro* and **-ntro* yielded Sabellic *-ter* and *-nter*; these still contrast synchronically with secondary *-tur, -ntur* < **-tor, *-ntor* in Umbrian.[111] The other Italic languages simplified the system in opposite ways. Oscan extended *-(n)ter* at the expense of *-(n)tur*; Latin (and apparently South Picene, to judge from the unique form *qolofítúr*; cf. Marinetti 1985: 182 f.) generalized the secondary endings *-tur* and *-ntur.*[112]

[110] Note also the 3 sg. of the *s* -subjunctive (*ro festar,* etc.), where the retention of the cluster *-st* - points to earlier **-str* - (Thurneysen 1946: 391). The third person absolute deponent endings, which ought in theory to have ended in **-(n)tro-s,* were apparently remade to **-(n)tres* in pre-Irish under the influence of the **-r-es* that appeared in the other deponent and passive endings.

[111] On the strength of the late (Latin alphabet) Umbrian spellings *herti, hertei* 'oportet' and *ostensendi* 'ostensi erunt', Meiser (1992: 300 f.) sets up Sabellic **-tə̣r* and **-ntə̣r* for the primary endings, which he traces—very improbably in my opinion—to **-(n)tir* or **-(n)teir.* Cf. Jasanoff 1997*b* : 151 n. 11.

[112] Many variations on this scenario are imaginable. One possibility—suggested by the fact that Celtic as well as Italic restricts the *r* -less secondary endings **-to* and **-nto* to forms that have been synchronically 'demedialized' (OIr. *no bered* 'would carry', Ven. *donasto* 'gave', etc.)—would be to date the creation of the new secondary endings with **-r* (**-tor* and **-ntor*) to the Italo-Celtic period. Another would be to assume that the early Italo-Celtic situation was retained beyond the Proto-Italic stage, so that Proto-Italic itself had primary **-or, *-tor, *-ntro* and secondary **-o, *-to, *-nto.* Starting from such a system, we could then assume that (1) **-tor* (**-or*) and **-ntro* were extended to the 'secondary' tenses and moods in the common ancestor of Sabellic and Latino-Faliscan, thus eliminating the primary : secondary distinction in the middle altogether; (2) Oscan created a 3 sg. *-ter* to match the 3 pl. in *-nter* < **-ntro,* eliminating the old **-tor* ; (3) Latin created an analogical 3 pl. in **-ntor,* eliminating the old **-nter* < **-ntro* ; and (4) Umbrian created *both* an analogical 3 sg. *-ter* and a 3 pl. **-ntor,* subsequently assigning *-ter, -nter* to presential, and **-tor, *-ntor* to preterital functions. The account given in the text seems less arbitrary.

§37. Our survey of the perfect and middle endings is now essentially complete.[113] The basic PIE forms were as shown in Fig. 2.7:

FIGURE2.7

	perfect	middle	
		secondary	primary
sg.	1 *-h_2e [-h_2a]	*-h_2e [-h_2a]	*-h_2e-*r* [-$h_2$ar]
	2 *-th_2e [-th_2a]	*-th_2e [-th_2a]	*-th_2e-*r* [-th_2ar]
	3 *-*e*	*-*o*; *-*to*	*-*o*-*r*; *-*to*-*r*
pl.	1 *-*meH* (?)	*-$medhh_2$	*-$medhh_2$(-*r*?)
	2 *-*(H)e* (?)	*-*dh(u)u̯e*	*-*dh(u)u̯e*(-*r*?)
	3 *-*er* (< **-*ers*), *-*r(s)*	*-*ero*, *-*ro*; *-*nto*	*-*(e)ro*(-*r*?); *-*nto*-*r*

The two sets were virtually identical in the 1 sg. and 2 sg., similar but not identical in the older ('stative') forms of the 3 sg. and 3 pl., and quite different in the 1 pl. (perf. *-*meH* (?) : mid. *-$medhh_2$) and 2 pl. (perf. *-*(H)e* (?) : mid. *-*dh(u)u̯e*). Our knowledge of the dual endings is too fragmentary to permit any definite conclusions.

How is the obvious relationship of the perfect and middle endings to be explained? Questions about the prehistory of a protolanguage are notoriously hard to answer, as the long and sorry record of attempts to investigate the

[113] The endings of the middle imperative will not be discussed here, save to note the curious point that the PIE shape of the basic 2 sg. form is unknown. The individual languages show dramatic differences among themselves in this paradigmatic position: Greek and Latin share the innovated secondary ending *-*so,* but Old Irish has -*the,* Hittite has -(*ḫ*)*ḫut,* and Indo-Iranian has *-*su̯a* / *-*su̯u̯a* (Ved. -*sva,* -*sua,* Av. -*huuā̆,* etc.), probably to be identified with the reflexive pronoun *-*su̯e/o* -. Cf. §§72, 106.

'origins' of the PIE nominal and verbal systems makes clear. Nevertheless, the similarities and differences between the perfect and the middle are of so particular a character that it would be remiss, in the context of an extended study of the *ḫi*-conjugation, not to extract as much information as possible from the facts at our disposal. This will be our goal in what follows.

§38. The most striking difference between the perfect and middle endings is the contrast between the 3 sg. perfect in *-*e,* with the same vowel timbre as in the 1 sg. in *-*h₂e* and 2 sg. in *-*th₂e,* and the archaic 3 sg. middle in *-*o,* with the same timbre as the 3 pl. in *-*(ē)ro* and the typologically later *-*to* and *-*nto.* This difference has been variously interpreted. A common view is that of Cowgill (1968: 25 ff.), who takes the vowels *-*e* and *-*o* to be meaningful elements representing the categories 'perfect' and 'middle', respectively. In the same spirit, Rix (1988: 110 ff.) sees the *-*o* of the middle endings as a reflexive pronoun. But like many other attempts to segment PIE desinences into independent submorphemes, this analysis fails on close inspection. As we have already seen, there is no evidence for an *o*-coloured 1 sg. middle in *-*h₂o(r)* or 2 sg. middle in *-*th₂o(r).* In the 1 sg., Greek (-μαι, etc.) and Tocharian (A -*mār,* B -*mar*) point unequivocally to an ending with *a*-vocalism, implying older *-*h₂e*-; to these can now be added the Lycian 1 sg. pret. middle in -χ*agã* (≅ Hitt. -(*ḫ*)*ḫaḫa*ri), which Melchert (1992: 190 ff.) has persuasively traced to a preform with two *a*-vowels. In the 2 sg., where there is less information to go on, Tocharian (A -*tār,* B -*tar*) again points to *-*a*-. Further afield in the paradigm, the 1 pl. in *-*medhh₂* and the 2 pl. in *-*dh(u)ue* show no sign of the supposed voice marker *-*o* either.

An altogether different interpretation of the endings in final *-*o* is suggested by the situation in the 3 pl. Here, contrary to the prediction of Cowgill's theory, there is no perfect in *-*re* beside the middle in *-*ro.*[114] As shown above, the original form of the 3 pl. perfect ending was **-*(é)rs,* which developed within the protolanguage to *-*ēr,* *-*r̥s,* and—by contamination of the two—*-*r̥*. The middle endings *-*ēro* and *-*ro* must therefore have been relatively late additions to the PIE inventory, made by appending the vowel *-*o* to earlier *-*ēr* and *-*r̥* at a time after the operation of the PIE '*ph₂ tḗr*-rule' (*-*V̄Rsg#* > *-*V̄R#*) and after the analogical creation of *-*r̥* from *-*ēr* and *-*r̥s*. The added *-*o* could only have been taken from the other third person middle endings—*-*o,* *-*to,* and *-*nto.* But since the 3 pl. in *-*nto* is apparently modelled on the 3 sg. in *-*to,* and since *-*to* is in turn a modernization of *-*o* (cf. §§33–4), we are left, in the last analysis, with the 3 sg. 'stative' in *-*o* itself. Of the four third person

[114] Recall (cf. n. 11) that the final vowel of Lat. -*ēre* is simply the *-*i* of the *hic et nunc.*

middle endings, it is only the 3 sg. in *-*o* that is neither the replacement of a more archaic middle ending nor an obvious recharacterization of the corresponding ending of the perfect. What emerges, therefore, is a pre-PIE picture in which the 3 sg. perfect and 3 sg. middle ended in *-*e* and *-*o,* respectively, but in which the other perfect and middle endings—excepting, as always, the 1 pl. and 2 pl.—were largely identical, not only in the 1 sg. and 2 sg., but in the 3 pl. as well. Far from attesting to a once universal middle marker *-*o,* the proliferation of third person middle endings in final *-*o* simply reflects the secondary spread of *-*o* from the one paradigmatic position where it was original.

There thus remain three primitive points of difference between the terminations of the perfect and middle:

(1) the middle had a 1 pl. in *-*medhh*$_2$ and a 2 pl. in *-*dh(u)u̯e,* both of which differed fundamentally from their perfect counterparts;
(2) the earliest form of the 3 sg. middle ended in *-*o,* while the 3 sg. perfect ended in *-*e*; and
(3) the middle, unlike the perfect, made use of the particle *-*r* to distinguish between a primary and a secondary set of endings.

Important as they are, none of these differences rules out the possibility that the perfect and the middle endings were originally identical. The most difficult of the three to understand in synchronic terms—and hence the likeliest to be old—is the discrepancy between the two sets in the 1 pl. and 2 pl., which leaves no doubt that the distinctness of the perfect and the middle as grammatical categories dates from an early period. On the other hand, the facts noted under (2) and (3) may be causally connected. As I have suggested elsewhere (Jasanoff 1994: 164), the *o*-timbre of the 3 sg. middle may have originated in a pre-PIE sound change that converted unaccented word-final *-*e-r* to *-*o-r* in the nascent primary ending. The operation of such a rule, limited to closed syllables and perhaps sensitive to the character of the following consonant, would also help explain phenomena like the post-tonic *-*o-* of PIE neuter *s*-stems (type *$\hat{g}$*énh*$_1$*os* < **-*es* 'race') and the *-*o-* of 'amphikinetic' nominative singulars (type *dhé$\hat{g}$h-ōm* < **-*om-s* < **-*em-s* 'earth'), as was pointed out to me by Jochem Schindler.[115] Once established before *-*r* in forms of the type *$\hat{k}$e$\u{e}$i-o-r*

[115] Schindler's classic study of PIE *s* -stems (1975*a*) traces the declension of the familiar *s* -stem type *$\hat{g}$énh$_1$ -*os* to an originally 'proterokinetic' nom.-acc. *$\hat{g}$énh$_1$ -*s* -ø, gen. *$\hat{g}$nh$_1$ -*és -s,* dat. *$\hat{g}$nh$_1$ -*és -ei,* etc.; the actual Greek, Latin, and Sanskrit forms (Gk. *γένος, γένος, γένεϊ* ; Lat. *genus, generis, generī* Skt. *jánaḥ, jánasaḥ, jánase*) point to an early levelling of *e* -grade in both the root and suffix syllables, with a secondary change of *-*e* - to *-*o* - in the nom.-acc. sg. In the amphikinetic declensional type (e.g. nom. **dhégh-om-s,* gen. *dhégh-m-és,* dat. *dhégh-m-éi,* etc.), an accent-conditioned rule taking *-*e* - to *-*o* - was long ago assumed by Hirt (1900: 156) to explain the well-known Greek alternation pattern πατήρ : εὐπάτωρ. Another suggestive set of facts comes from the distribution of *-*e* - and *-*o* - in thematic presents: 1 sg. primary *-*oh*$_2$, 1 sg. secondary *-*om,* 3 pl. primary *-*onti,* 3 pl. secondary *-*ont,* and the optative complex *-*oi(h*$_1$*)* - all show *-*o* - in a closed syllable; 2 sg. primary *-*esi,* 3 sg. primary *-*eti,* and 2 pl. *-*ete* have *-*e* - in an open syllable. Of the endings which violate this pattern, 2 sg. secondary *-*es* and 3 sg. secondary *-*et* can easily be explained as analogical to *-*esi* and *-*eti,* respectively, while the 1 pl. in *-*ome, *-*omes,* etc. could have acquired its *-*o* - from the other endings with *-*o* - before a nasal. There are also, of course, many exceptions to the *-*e* - > *-*o* - rule—showing that it was no longer synchronically active in late PIE.

'lies', an *-*o*- generated in this way would have been well positioned to replace **-*e* by analogy in the corresponding imperfect/injunctive **$k\underset{\frown}{e}\acute{i}$-*e* > *$k\underset{\frown}{e}\acute{i}$-*o* 'lay' and in oxytone forms of the type **dhugh-é-r* > **dhugh-ó-r* 'furnishes', impf./inj. **dhugh-é* > **dhugh-ó*. See further §84.

§39. The object of these speculations, it should be emphasized, is not to insist on a particular sequence of pre-PIE events as the first step toward an assumption-laden new theory of the *ḫi*-conjugation. Our goal is more modest: first, to show that there are several independent reasons to believe—and no strong reason not to believe—that the perfect and middle endings came from a single source; and second, to show that in the course of the progressive differentiation of the two sets of endings it was in almost every case the endings of the middle, and not those of the perfect, that were the locus of innovation. The latter observation is in perfect accord with the history of the middle in the post-IE period. The trend that began with the creation of the 3 sg. in *-*to* and 3 pl. in *-*nto* in the parent language was logically continued with the creation of the 1 sg. in *-*mar,* *-*mai* and the 2 sg. in *-*so,* *-*soi* in a number of IE daughter languages. And just as the particle *-*r* was added to the endings *-*h_2e,* *-*th_2e,* *-*e* within the protolanguage to help distinguish the middle *qua* present indicative from the perfect, *-*r* was extended to the *secondary* middle endings in Italic (cf. §36) to heighten the salience of the middle in its remaining, non-presential uses.

In contrast to the formally renewed and, one might almost say, constantly self-renewing endings of the middle, the endings of the perfect in late PIE present a static, almost relictal quality. Indeed, the term 'relic' can be appropriately applied to the perfect as a whole. The original sense of the perfect is obsolescent everywhere except in Homeric Greek. The perfect 'system', unlike the present system or the aorist system, contains stems of only one basic type—the classical perfect with *e*-reduplication and **o* : *zero* (probably continuing earlier **o* : **e*) apophony.[116] No other canonical IE verbal formation shows this ablaut pattern, which is all the more striking in view of the fact that the middle, despite its connection with the perfect, lacks paradigmatic ablaut altogether. The suppletive character of the perfect endings is likewise revealing. There are no

[116] Of which the minor types discussed in §23 can be considered variants.

secondary forms of the perfect corresponding to the secondary forms of the active or middle; in place of the expected secondary perfect endings late PIE employed the secondary active endings in the pluperfect (type 3 sg. **memón-t* 'thought') and the perfect optative (3 sg. **memn̥-ih₁-t*). It is thus incorrect to think of the perfect endings as somehow essential to the stative meaning of the perfect; the non-present and non-indicative forms of the perfect, which took the active endings, were semantically stative as well. Descriptively speaking, the perfect endings in late PIE had simply become positional variants of the primary active endings, taking the place of **-mi, *-si, *-ti,* etc. in the particular resultative stative (and occasionally 'intensive') presents known to us, for a variety of accidental reasons, as perfects. By the end of the PIE period, such presents had come to contrast with a formation based on the same stem but characterized by the renewed endings **-h₂ar, *-th₂ar, *-or,* etc.—the perfect middle.

We thus arrive at a tentative and partial model of the pre-PIE verbal system in which a single '*h₂e*-series' of endings, presumably at least broadly comparable in function to the middle endings of Greek or Indo-Iranian, had two different outcomes. When refurbished through processes like the addition of **-r* and the generalization of **-o,* these endings became the endings of the classical PIE middle, displaying a coherent range of 'internal' functions (reflexive, self-benefactive, passive, etc.) and freely combining with a variety of present and aorist stems. When not so renewed, the *h₂e-* endings lost their productivity and came to be confined to a specialized category, the perfect; here they sank into the role of mere allomorphs of the primary active endings. It is a typical story of morphological renovation and morphological decay.[117]

§40. The above framework is eminently well suited to explain another form whose status invariably arises in connection with the prehistory of the perfect and the middle, viz. the thematic 1 sg. in **-o-h₂.* Descriptively speaking, forms like **bhér-o-h₂* 'I carry' (= Ved. *bhárā*[*mi*], Gk. φέρω, Lat. *ferō,* OIr. *·biur* (conj.), *biru* (absol.), Go. *baira*) were simply present actives in PIE; the corresponding 1 sg. imperfect ended in **-o-m,* with the normal active ending, and the rest of the present paradigm included a straightforwardly active-looking 2 sg. **bhér-e-si* and 3 sg. **bhér-e-ti*. The validity of the reconstruction **bhéreti*

[117] The family resemblance of this picture to some of the hypothetical scenarios discussed and criticized in §§20–1 will be obvious. But the view taken here tries to avoid the pitfall of overspecification: no special assumptions are made about the original function of the *h₂e* -series, no succession of 'stages' is posited for the internal history of the protolanguage, and no grammatical categories are assigned to late PIE that are not in fact attested in the early daughter languages. The claim here is simply that *whatever* the *h₂e* -endings may have meant in pre-PIE, they came to have the value(s) we call 'middle' when modernized, and either active or non-contrastive value when not.

requires some emphasis in view of Watkins's attempt (1969 *passim*; cf. Pedersen 1938: 86–7) to show that the late PIE 3 sg. corresponding to **bhéroh$_2$* was a dentalless form **bhére,* with a final vowel related to the 3 sg. perfect in **-e.* The main direct evidence for **bhére* comes from Gk. φέρει (for expected *φέρετι or *φέρεσι), with an ending that has yet to be satisfactorily explained on the basis of the standard **bhéreti.*[118] But the additional forms adduced by Watkins to support a dentalless thematic 3 sg. can better be accounted for in other ways. Thus, the Old Irish conjunct 3 sg. *˙beir* almost certainly goes back not to **bere,* but to an apocopated **beret* < **bereti,* with the early Insular Celtic loss of **-i* described by Cowgill (1975*b*). A similar apocope underlies Lith. 3 p. *véda* 'lead(s)' and the Slavic 'short' 3 sg. *vede* (alongside *vedetь* and *vedetъ*) 'leads' (cf. Cowgill 1985: 105 f.).[119] Toch. A *āśäṣ* 'leads', referred by Watkins to a dentalless 3 sg. **ag̑e* with a following particle, is in fact the phonologically regular reflex of the normal 3 sg. **ag̑eti* (cf. Jasanoff 1987*b*: 110 f.).[120] Thus, the traditional **bhéreti* is much too firmly grounded in the comparative evidence to be abandoned lightly, even though, as we shall see later (cf. §85), forms of the type **bhére* may well have existed at an earlier stage of the parent language.

The use of φέρω, *ferō,* etc. in place of the expected 1 sg. ***bhéromi* is an anomaly, and evidently an old one. It is clear both from the phonological shortening of PGmc. **berō* to *baira* in Gothic (cf. also OHG *biru*) and from the operation of Saussure's and Leskien's Laws in Lithuanian (e.g. *vedù* < **vedúo*) that the desinential element incorporated in the *-ō* of the historical languages was **-h_2* rather than **-h_2e.*[121] The relationship of the abbreviated variant **-h_2* to the familiar **-h_2e* of the perfect and middle is probably not to be explained by

[118] A comparatively recent discussion is Hoenigswald 1986.

[119] In Baltic and Slavic, the distribution of **-ti* and apocopated **-t* ' came to depend on word length. Forms originally trisyllabic or longer generalized the shorter ending, as in thematic presents or (Baltic) *s* -futures built to di- and trisyllabic infinitive stems (type Lith. *galės* 'will be able' < **-ē-s-t',* subsequently extended to the shorter type *duõs* 'will give'). Originally disyllabic forms, on the other hand, retained **-ti* unshortened, as in Lith. *ēsti* 'is/are', *sniẽgti* 'snows', etc.; *-ti* was even extended to the historical optative in OLith. *bìti* 'was / were'. In Slavic, the shortening of **u̯edeti* to **u̯edet*' (> *-e, -etô*) had exact parallels in the shortening of 3 pl. **u̯edonti* to **u̯edont* ' (> *-Q, -Qtô*) and 1 sg. **u̯edāmi* (i.e. **u̯edō* + *-mi,* like Ved. *bhárāmi*) to **u̯edām*' (> *-Q*).

[120] The corresponding B form *āśäṃ,* however, remains a mystery.

[121] Both Germanic and Baltic originally distinguished ordinary 'bimoric' long vowels from hyperlong 'trimoric' vowels in final syllables. Bimoric longs normally arose from monosyllabic sequences of the type **-VH(C) #*, with laryngeal loss and compensatory lengthening; trimoric longs mostly arose from sequences of the type **-VHV(C) #*, with laryngeal loss followed by contraction. Bimoric **-ō* **-oH* was shortened to *-a* in Gothic, while trimoric **-ô* gave Go. (and OHG) *-o.* Etymological bimoric ('acute') vowels were also shortened in final syllables in Lithuanian (Leskien's Law; cf. Collinge 1985: 115 f.), where acute vowels had the further property of attracting the accent from a preceding short or non-acute long syllable (Saussure's Law; op. cit. 149 ff.). The attested 1 sg. *vedù* thus points unambiguously to **u̯édh-o-h$_2$* ; a preform **u̯édh-o-h$_2$e* would have given Lith. **vẽduo.*

ablaut, since vowels in absolute final position were not subject to the normal PIE rule of zero-grade formation.[122] The existence of *-h_2 beside *-h_2e does, however, strongly recall the alternants *-h_1e and *-h_1 in another ending, that of the masculine and feminine nom.-acc. dual. In consonant stems, the dual ends in -*e* < *-h_1e (cf. Gk. πόδε 'two feet', OIr. *da druid* (< *-*de*) 'two druids', OLith. *duktere* 'two daughters'), while in thematic nouns the desinence proper normally coalesces with the *-*o*- of the stem to give 'acute' *-$\bar{o}$ < *-*o*-h_1 (cf. Ved. *vṛ́kā* (before consonants) 'two wolves', Gk. λύκω (-ώ in oxytones) 'id.', Lith. *abù* 'both' < **abúo*). The obvious inference is that PIE had an apocope rule which shortened final sequences of the type *-*oHe* to *-*oH*. Unfortunately, the really convincing evidence for word-final *-*oHe* is limited to these two examples.[123]

Complicating the picture, albeit in an interesting way, is the fact that both the dual ending *-h_1*(e)* and the 1 sg. ending *-h_2*(e)* show a third variant of the form *-*Hu* or *-*H̯u̯*. The *u*-version of the dual ending can be seen in the familiar Sanskrit thematic -*au* < *-*o*-h_1u̯ (*vṛ́kau, vṛ́kāv* 'two wolves', largely prevocalic in the older parts of the Rigveda), which is matched by a diphthongal ending in Germanic (cf. Go. *ahtau* 'eight' = Ved. *aṣṭáu*). In the 1 sg. the *u*-form of the ending appears in the perfect of 'long-vowel' roots, where Ved. 1 sg. *jajñáu* and Lat. *(g)nōu*[ī] 'I know' both presuppose a surface form *$\hat{g}e\hat{g}nóH$u̯ (*$\hat{g}e\hat{g}nóh_2$*1*?), simplified by reduction of the laryngeal cluster from underlying *$\hat{g}e\hat{g}nóh_3$-h_2e. The same phonological sequence, with the morpheme boundaries differently situated, underlies the corresponding third person forms (Ved. *jajñáu,* Lat. *(g)nōu*[*it*] < *$\hat{g}e\hat{g}nóh_2$u̯ < *$\hat{g}e\hat{g}nóh_3$-*e*).[124]

The rationale for the appearance of *-*Hu̯* beside *-*He* and *-*H* is unknown. One possible explanation, speculative but typologically plausible, would begin by assuming that word-final sequences of the form *-*eHe* and *-*oHe* were respectively realized as *-*eHə* and *-*oHə* in early PIE, with partial 'absorption' of the final vowel by the preceding *-*VH*- sequence. Depending on the position of the accent and the onset of the following word, final *-*ə* could then

[122] This is clear enough from the perfect itself, where all three singular endings retain their final vowel, though they never bear the accent. Note also the enclitic particles *k^we, *u̯e, *i̯o, etc.

[123] A possible third example of a desinence of the form *-*He* is the directional ending *-h_2e, as in Gk. χαμαί (< *(dh)ĝhm̥-h_2e(i)) 'on, to the ground' and scattered adverbs elsewhere in the family. The ending of the directional (or allative) case in Hittite (e.g. *aruna* 'to the sea', *parna* 'to the house, home', etc.) may partly go back to a thematic sequence *-*o*-h_2, with apocope and subsequent Anatolian loss of the word-final laryngeal. Lat. *quō* 'whither, where', which probably belongs here as well, can equally well go back to *k^wo-h_2 or *k^wo-h_2e.

[124] The Latin *u* -perfect thus began its Italic history with an undercharacterized and synchronically irregular 1, 3 sg. in *-*ōu*. The reinterpretation of the *u* -element as a suffix in Latin was probably triggered by the remodelling of forms like 1 sg. *(*ge*)*gnōu* 'I know' to *(*ge*)*gnōu̯a* or *(*ge*)*gnōu̯ai,* with the normal ending directly added to the inherited form.

have been subject to further weakening and loss as follows:

(1) *-ə > *zero* when the preceding vowel was unaccented (**bhéro-h₂ə* > **bhéro-h₂*, **u̯ĺkʷo-h₁ə* > **u̯ĺkʷo-h₁*);
(2) *-ə > *zero* when the preceding vowel was accented and the following word began with a non-laryngeal consonant (**ĝeĝnóh₃-ə* (3 sg.) > **ĝeĝnóh₃-∅*, **d(u)u̯ó-h₁ə* > **d(u)u̯ó-h₁/_#C-*);
(3) *-ə > **i* or **u* when the preceding vowel was accented and the following word began with a laryngeal (or vowel?), the choice of **i* or **u* being determined by the accented vowel: *-éHə gave *-éHi* (no examples) and *-óHə gave *-óHu* (**ĝeĝnóh₃-ə* (3 sg.) > **ĝeĝnóh₃-u*, **d(u)u̯ó-h₁ə* > **d(u)u̯ó-h₁u/_#H-*).

Analogy would then have done the rest, producing new distributions of '*-ō' and '*-ōu' in the daughter languages. Phonetically, the late PIE sequence *-*oHu* was apparently realized as *-*oHu̯*, with non-vocalization of the word-final *-*u*. The treatment recalls the non-vocalization of *-*m* in PIE sequences of the type *-*VH-m* ('Stang's Law'; cf. Mayrhofer 1986: 163–4).[125]

§41. This is not the place to discuss the difficult question of the origin of the simple thematic conjugation, which will be broached later (cf. §85 and App. 1). For the moment it is sufficient to note this—that whether we think of the thematic conjugation as an activized *Ur*-middle (so Watkins) or simply envisage it as an ordinary active with an intrusive 1 sg. from a different paradigm (so e.g. Strunk 1988: 303 ff.), the 1 sg. in *-ō <*-o-h₂ <**-o-h₂e* clearly contains an ending of the *h₂e*-series that is synchronically active. This fact, which is incontestable and theory-independent, comports perfectly with what we know already about the prehistory of the perfect and middle. The pre-PIE *h₂e*-endings had two basic treatments in the later history of the protolanguage—formal renewal, which eventually led to the productive middle endings; and non-renewal, which led, at least in the one case we have explored thus far, to the denatured, semantically colourless endings of the perfect. Seen in purely formal terms, the PIE 1 sg. **bhéro-h₂* 'I carry' clearly falls within the second tradition: the phonetically eroded (apocopated) *r*-less ending *-*h₂* was reinterpreted as active in the parent language, and eventually came to contrast with the renewed ending of the 'true' middle 1 sg. **bhéro-h₂er* (> Lat. *feror,* Gk.

[125] This formulation is an improved version of the account of 'excrescent *-u*' given in Jasanoff 1988*c* : 73–4, where I assumed (wrongly as I now believe) pre-PIE **-o* and **-h₁o* for the earliest preforms of the endings here given as *-*e* and *-*h₁e*. The Hittite 1 sg. preterite ending *-(ḫ)ḫun,* which I traced to a *u* -ending *-*h₂u* in 1988, is probably better explained as in §6 above (see, however, Melchert 52). Lat. *hū-c* 'hither' can as easily be taken from a locative **ĝho-i* as from a directional **ĝho-h₂u*.

φέρομαι, etc.). The typological affinities of the thematic 1 sg. active and middle are thus with the perfect active and middle. The 1 sg. present **bhéro-h_2* and the 1 sg. perfect **memón-h_2e* 'I have in mind' have much in common: both forms are relics, and both, from a synchronic structural point of view, could and 'should' have ended in **-mi*.[126] The parallelism between the thematic present active in **-o-h_2* and the perfect active in **-h_2e* has not always been appreciated, since the stative meaning of the perfect provides a quasi-rationale for the middle-like perfect endings, while the paradigmatically isolated thematic 1 sg. tends to be dismissed as an isolated aberration. That it is no mere aberration, but part of a submerged synchronic pattern, is shown by the forms that make up the *ḫi*-conjugation in Anatolian.

[126] As indeed they eventually do in some cases: Sanskrit develops presents of the type *bibhemi, vedmi,* etc., and OCS replaces *vědě* by *věmь.* Thematic forms of the type Ved. *bharāmi,* Arm. *berem,* MIr. *berim,* etc. are a commonplace in the later IE languages.

3 The *h*$_2$*e*-conjugation: Root Presents

§42. Notwithstanding the conflicting claims that have been made for the perfect, 'nominal verbs' (§§15–16), or the Neu–Meid 'Medium' (§§19–20) as the source of the *ḫi*-conjugation, it is a descriptive fact that the majority of *ḫi*-conjugation stems with visible counterparts outside Anatolian correspond simply to *presents* in the other IE languages. This is obvious in the case of *ḫi*-verbs that contain a derivational suffix: the Hittite type *iyanna/i-* 'get underway' matches the Vedic type *turaṇyáti* 'rushes'; Hitt. *newaḫḫ-* 'make new' forms an equation with Lat. *renouāre* and Gk. νᾶν 'id.'; Hitt. *īšš(a)-* < **i̯i-h*$_1$*-s-* (*vel sim.*) 'perform, carry out' has the same structure as the Vedic type *cíkitsati* 'desires to know'; Hitt. *išpai- /-iya-* 'be satisfied' recalls OCS *spějǫ, spěti* 'be successful'. But even 'root' *ḫi*-verbs (i.e. *ḫi*-verbs whose stem contains no affix other than the variable and secondary 'thematic' extension *-a-*) correspond in significant numbers to active presents outside Anatolian. In keeping with the 'one-word-at-a-time', lexically-based approach envisaged in §22, we will begin our detailed study of the *ḫi*-conjugation with an examination of the verbs of this latter type, taking them as our point of departure for an investigation—and ultimately a general theory—of the *ḫi*-conjugation as a whole.

§43. The PIE root **melh*$_2$*-* 'grind'[127] is represented in Hittite by the verb listed in the *Chicago Hittite Dictionary* (*CHD*) as *malla/i-*, *malliya/i-* 'mill, grind'. As so often in Anatolian, the original inflectional pattern is concealed beneath a welter of secondary forms. The stem-variant *malliya/i-* is clearly unoriginal; its only real support is the Neo-Hittite 3 sg. *malliyazzi* (KBo XIV 75 i 8), beside which the absence of even a single occurrence of the corresponding 3 pl. **malliyanzi* (alongside more than thirty instances of *mallanzi*) is telling. The remaining forms point either to a *mi*-conjugation verb 3 sg. with *mallezzi* (*-izzi*) and 3 pl. *mallanzi,* or to a *ḫi*-verb with 3 sg. *mall(a)i* and 3 pl. *mallanzi*. Oettinger (277 ff.) favours the former analysis, placing '*malle-*' without serious

[127] On the identity of the laryngeal, which is guaranteed by Luv. *mālḫ* - and *mammalḫu* - 'crush' see Melchert 1988: 215–16. The *-e* - of Myc. *me-re-ti-ri-ja* (= μελετριαι for expected *μελατριαι) is either due to assimilation or to contamination with the more usual *ἀλέω* 'grind' (< **h*$_2$*elh*$_1$ -); cf. Barton 1996: 23.

discussion in his historically and descriptively dubious 'einfach thematische Klasse'. As noted by Melchert (1984: 16 ff.), however, the earliest unambiguous attestation of the *mallezzi* paradigm is in a Neo-Hittite copy of a Middle Hittite text, while the earliest instance of a *ḫi*-conjugation form occurs in a Neo-Hittite copy of an Old Hittite text. Significantly, the *ḫi*-form in question is the archaic hapax 3 sg. *malli* (KUB VII 1 ii 1), which differs from the normal *ḫi*-conjugation 3 sg. *mallai* in adding the ending *-i* directly to the root rather than to the synchronic stem *malla-*. The existence of the form *malli* virtually guarantees the priority of the *ḫi*-conjugation paradigm. The 3 sg. ending *-i* in 'thematic' verbs is unproductive and unstable in Hittite;[128] throughout the history of the language, *ḫi*-verbs with synchronic stems in *-a-* tend to replace the 3 sg. in *-i* by *-ai,* as, for example, in NH *gangai* 'hangs' beside OH *kānki,* or NH *waštai* 'sins' beside OH *wašti.* Further militating against Oettinger's hypothesis of an inherited stem *malle-* (< *-*e*/*o*-) are the infinitive *malluwanzi* and the verbal noun *malluwar,* both of which show the addition of a nominalizing suffix in *-w-* to the bare root *mall-*. The philological evidence thus points to an originally athematic *ḫi*-verb with 3 sg. *malli* and 3 pl. *mallanzi.*[129] From *mallanzi* was extracted the enlarged stem *malla-*, which in turn gave rise to the remodelled 3 sg. *mallai* and the back-formed *mi*-conjugation forms 3 sg. *mallezzi,* 3 sg. pret. *mallet,* and 1 sg. pret. *mallanun.*

§44. PIE *$melh_2$- also underlies a series of presents outside Anatolian. In most cases these are primary thematic forms with either *o*-grade (Lith. *malù,* inf. *málti*; Go. *malan*), *e*-grade (OIr. *melid,* OCS *meljǫ* (with *-*i̯e*/*o*-), inf. *mlěti*), or zero grade (Arm. *malem* (?),[130] Umbr. 3 sg. impv. *kumaltu,* MW *malu*) of the root. Lat. *molō, -ere* belongs to this family as well, although the rules of Latin phonology make it impossible to tell whether the underlying vocalism was *-*o*- or *-*e*-. Only Vedic Sanskrit, with the rare nasal present *$mr̥ṇáti$* (impv. 2 sg. *$mr̥ṇīhi$*; otherwise only thematized *$mr̥ṇá$-*) clearly departs from the general pattern.[131] No IE language offers any evidence for an old perfect or a well-established middle paradigm.

How are these facts to be explained? Primary *o*-grade presents like Lith. *malù,* Go. *malan,* and (perhaps) Lat. *molō* were the focus of a 1905 Breslau

[128] I follow Watkins 1969 (73 ff. and *passim*) in using the term 'thematic' to describe *ḫi* -verbs in stem-final *-a* -, even though there is no etymological connection between this *-a* - and the PIE thematic vowel *-*e*/*o* -.

[129] So, in agreement, Tischler, *HEG* (s.v.).

[130] Arm. *mal* - is taken from *o* -grade *$molh_2$* - by Barton (1996: 24); the purported phonological rule is discussed by Kortlandt (1983: 10; 1987: 61).

[131] If, indeed, these forms do not rather go back to *$merh_2$* - 'crush' (: OIcel. *merja,* etc.). An uncertain parallel to the Vedic nasal present is found in Toch. B *mällastär* 'oppresses' (Adams 1989: 10–11), probably reflecting older *$mḷ$-nu-sḱ* -. Gk. *μύλλω* "βυέω" is often ranged with *molō, malan,* etc. (see e.g. Vine 1999: 565 f., and compare §50 below, but the phonology, semantics, and derivational history (< μύγη 'mill'?) are all open to question.

dissertation by P. Gärtchen. This work, though hopelessly dated, is still useful for its collection of data, of which a selection will be given in §§49–50. Gärtchen found that *o*-grade thematic and *ie/o*-presents were far more common in Germanic and Balto-Slavic than elsewhere, and concluded that they were a post-IE innovation. More particularly, he suggested that the *o*-grade of Gmc. **malan* or—to use his own example—**gangan* 'go' (:Lith. *žengiù* 'I step') had been taken over from the corresponding thematic action nouns of the *o*-grade 'τόμος' type. The motivation for this development, according to Gärtchen, came from the well-known *figura etymologica* construction in which the noun served as inner object to the verb: **ĝhónghom ĝhéngheti,* lit. 'goes a going' (cf. Ved. *yā́mam yāti*), became by contamination **ĝhónghom ĝhóngheti,* whence Go. *gaggiþ,* OHG *gengit,* etc. Gärtchen's idea was criticized a few years later by Brugmann (1913), who rightly found it too far-fetched to be credible. Brugmann's own account, however, depended on a crucial contamination as well: for him it was the iterative **ĝhonghéieti,* rather than the verbal abstract **ĝhónghom,* that imposed its vocalism on the *e*-grade present **ĝhéngheti*. Brugmann's opinion, despite an important dissenting voice to be discussed below, became the standard view for the next fifty years.

Today, from the vantage point of nearly a century later, Brugmann's approach seems every bit as inadequate as Gärtchen's. The *o*-grade of Gmc. **malan* and Lith. *málti* has very much the look of an inherited feature; if the PIE present of the root **melh₂-* had simply been **mélh₂e/o-*, with *e*-grade, it would be impossible to explain why **mélh₂e/o-* was remade to **mólh₂e/o-* in *both* Germanic and Baltic, while the *e*-grade of well-established thematic presents like **bhére/o-* (Go. *bairan,* not **baran*), **u̯éĝhe/o-* 'convey' (Go. *ga-wigan,* not **-wagan*; Lith. *vežù,* not **važù*), and **pékʷe/o-* 'cook' (Lith. *kepù* (for **pekù*), not **kapù*) was never so altered. The difficulty was seen by R. Hiersche, whose 1963 study of the '*molō*-type' marked the first article-length re-examination of the problem of *o*-grade presents in nearly half a century. Hiersche speculated that PIE had thematic presents of the type **mólh₂e/o-* [my notation—JJ], **ĝhónghe/o-*, etc. , which survived in forms like **malan* / *málti* and **gangan,* but were normalized or replaced by etymologically unrelated forms with *e-* or zero grade in the other languages. In the aftermath of Hiersche's article, athematic *o*-grade presents were proposed as possible preforms as well. Karl Hoffmann, starting from Delbrück's early identification (1869: 125) of Gmc. **faran* 'go; convey' (< **por-*) with Ved. *píparti* 'brings across', compared the *o*-grade presents of Germanic and Balto-Slavic with reduplicated presents in Indo-Iranian.[132] Following Hoffmann's lead, Klingenschmitt (1982: 146) identified

[132] See e.g. the discussion by Lühr (1984: 65).

**malan* / *mál̥ti* with the Vedic present 3 sg. impv. *ma(r)martu* (RV II. 23. 6), while Rasmussen (1989: 247 f., n. 3) set up an ablauting intensive with 3 sg. **mḷ-mólh-ti* and 3 pl. **mél-mḷh-n̥ti*. Mottausch (1996: 94–5) argues for an ablauting stem **mí-m(o)lh*$_1$- with 3 sg. **mí-molh*$_1$*-e*.[133]

These proposals, while clearly an improvement over Gärtchen's and Brugmann's ideas, are obviously unsatisfactory as well. Hiersche's apophonically invariant **mólh*$_2$*e/o*- necessitates a host of extra assumptions to explain the *e*-grade of OIr. *melid* and OCS *mel*$\jmath$*ǫ* and the zero grade of MW *malu* and Umbr. *kumaltu*. The Hoffmann-inspired reduplicated approach is more flexible in this respect, but faces a different set of objections. To begin with, it is far from clear that PIE reduplicated presents had **-o*-, rather than **-e*-, as their 'strong' vocalism; the hypothesis of *o*-grade receives modest support from Gmc. **dōn* (< **dedōn*) 'make, do', but is flatly contradicted by Gk. τίθημι, πί(μ)πλημι, etc. and by indirect evidence from Balto-Slavic.[134] Above all, however, it is simply not credible that an inherited present **mí-m(o)lh*$_2$- or **mé-m(o)lh*$_2$- would have lost its reduplication across the length and breadth

[133] Cf. further Hackstein 1995: 317, with additional references.

[134] While Gk. τίθημι, -εμεν could perhaps have replaced earlier *τίθωμι, -εμεν (**-dhh*$_1$-) in imitation of the pattern of δίδωμι, *-ομεν* (**-dh*$_3$-), the Balto-Slavic forms are harder to explain away. For 'put' Lithuanian has *ded-* (3 p. *dẽda,* OLith. *desti*), which is clearly old; for 'give' Lithuanian has *duod-* (3 p. *dúoda,* OLith. *duosti*) and OCS has *dad-* (3 sg. *dastъ,* 3 pl. *dadętъ*), both pointing to Balto-Slavic **dōd-*. As seen by Kortlandt (1977: 323), the difference in quantity between the **-e-* of **ded-* and the *-ō- of **dōd-* can only be explained by 'Winter's Law' of lengthening before PIE voiced (but not voiced aspirated) stops; the earlier preforms were **dhedh-* and **dod-*, respectively. These, of course, were generalized weak stems, originally confined to the plural and dual. In the case of **dod-*, the corresponding strong stem must have been **dodō-*, representing earlier **dedō-*, with morphological assimilation of the reduplication vowel **-e-* to the *o*-timbre of the root. But in that case the strong stem corresponding to **dhedh-* would have to have been **dhedhẽ-* (< **dhedheh*$_1$-), with *e*-grade, since an *o*-grade preform **dhedhō-*, had it existed, would surely have undergone the parallel assimilation to **dhodhō-* (> Lith. **dad-*). Gmc. **dedō-* remains a problem. But just as we can reconstruct a strong stem **dhedhoh*$_1$- and still account analogically for the apparent *e*-grade of τίθημι, it is possible to reconstruct a strong stem **dhedheh*$_1$- and account analogically for the *o*-grade of OE 1 sg. *dōm,* OHG *tuom,* etc. Although the root **deh*$_3$- 'give' was eventually dropped from the Germanic lexicon, pre-Germanic must once have had a present stem **dedō-*/**ded-* 'give' (: Ved. *dad(ā)-*, pre-Balto-Slavic **ded(ō)-*, Gk. δίδω- / δίδο-) and an associated preterite (> perfect) stem **dedō-*/**dẽd-*. Under the traditional '*e*-grade' theory of reduplicated presents, the corresponding forms of **dheh*$_1$- 'put' would have been **dhedhẽ-* / **dhedh-* (pres.) and **dhedhō-* / **dhẽdh-* (pret.; cf. OHG 1 sg. *teta,* pl. *tātum*). Outside the present singular, therefore, the two verbs would have differed exclusively in their consonantism: the forms of 'do' were mostly derivable from those of 'give' by substituting **dh-* (> Gmc. **d-*) for **d-* (> Gmc. **t-*). Nothing would have been simpler in this situation than for the strong present stem **dhedhẽ-* to be remade to **dhedhō-* on the model of **dedō-*. For a typological parallel, compare e.g. Ved. 2 pl. impv. *dhattá* 'put!' (for expected **daddhá*), made from 2 pl. impv. *dattá* 'give!' by substituting *dh-* for *d-*.None of this, of course, excludes the *possibility* that *e*-reduplicated presents of the *dád(h)āti-*, τίθημι-type had **-o-* as their strong vocalism. But in view of the apparent canonization of this assumption in *LIV* (16 and *passim*), it must be emphasized that the only direct evidence for *o*-grade *in any such present* is a single, potentially analogical Germanic form. See further Ch. 5 n. 12.

of the IE family—including specifically in Anatolian, where reduplication is in general extremely well preserved.[135]

§45. Long before Hiersche and Hoffmann, the need for a non-ad hoc treatment of presents of the **malan/málti* type was seen by Meillet (1916). In a prescient article written just one year before Hrozný's *Sprache der Hethiter,* Meillet conjectured that the three ablaut variants **molh$_2$-*, **melh$_2$-*, and **mlh$_2$-* all belonged to a single apophonically complex root present in the parent language. No individual daughter language, in Meillet's view, preserved this present unchanged; each language generalized one ablaut grade or another, simultaneously thematizing the paradigm with **-e/o-* or **-ie/o-*. The relationship among the various *o-*, *e-*, and zero-grade presents of **melh$_2$-* was thus for Meillet comparable to that between, say, Go. *digan* 'knead' (< **dhigh-e/o-*) and Arm. 3 sg. aor. (< impf.) *edēz* 'piled up' (< **dheigh-e/o-*), both abstracted from an athematic paradigm **dhéigh-ti,* pl. **dhigh-énti* (= Ved. *degdhi,* pl. *dihanti*).

Meillet's suggestion was an exceedingly bold one for the time, and he failed to develop it fully, never specifying, for example, the exact distribution of the three allomorphs **molh$_2$-*, **melh$_2$-*, and **mlh$_2$-*. It is hardly surprising, therefore, that ablauting root presents with **o* : **e* : *zero* apophony were not immediately accepted into the IE canon. But a great deal has been learned about PIE morphology since 1916, much of it highly favourable to Meillet's approach. In particular, Narten's discovery (1968) of a PIE acrostatic present type with **ē* : **ĕ* ablaut (the type **stéu-ti* 'praises', pl. **stu-nti*) was significant for the problem of *malan/molō* in two ways: (1) it established the principle that root formations in the parent language might have more than one ablaut pattern, and (2) it showed that the PIE *e*-grade, which patterned as the 'strong' vocalism in paradigms of the familiar **h$_1$és-ti* : **h$_1$s-énti* type, could also pattern as a 'weak' vocalism under suitable morphological conditions. Complementing Narten's demonstration was Schindler's discovery of an **o* : **e* acrostatic ablaut pattern in a variety of PIE nominal formations, including both root nouns (e.g. **pód- / *péd-* 'foot' (Schindler 1972)) and suffixed consonant stems (e.g. **nókʷ-t- /*nékʷ-t-* 'night', **u̯ód-r/*u̯éd-n-* 'water', **dór-u/ *dér-u-* 'wood' (Schindler 1967, 1975*a*, 1975*b*)). As a corollary to these results, both Narten and Schindler showed that the weak *e*-grade of their reconstructed paradigms was everywhere subject to analogical replacement by zero grade, the only productive weak vocalism in late PIE. Thus, for instance, the 3 pl. corresponding to Ved.

[135] Note that a distantly related reduplicated verb *mammalḫu - / mammalw -* 'crush, break', from the *u* -extended root form **melh$_2$-u -*, is actually attested in Luvian (cf. n. 1). Hittite retains the reduplicated noun *memal* 'groats'.

stáuti is actually attested as *stuvánti,* not **stávati* < **stéu̯-u̯ti,* and the gen. sg. of Ved. *dáru* < **dór-u* 'wood' is *dróḫ* < **dr-éu-s,* not **dáruḫ* < **déru-s.* Although the implications of these facts for the present of **melh₂-* were not instantly appreciated, their effect was to transform Meillet's **molh₂-*/**melh₂-*/**mḷh₂-* from mere speculation into an attractive and potentially explanatory hypothesis.

§46. The problem of reconstructing the present of the verb 'to grind' can now be treated as an exercise in the comparative method. On the one hand, we have the evidence of the non-Anatolian languages, which points, as Meillet in effect suggested, to an acrostatic root present with a strong stem **mólh₂-* and a weak stem **mélh₂-*. Other things being equal, it would be natural to reconstruct a PIE paradigm **mólh₂-mi, *-si, *-ti,* pl. **mélh₂-me, *-te, *-u̯ti,* with a tendency for the plural to be renewed as **mḷh₂-mé, *-té, *-énti* in the dialectal period. But we also have the testimony of Hittite. Here there is likewise reason to believe that the paradigm of the verb 'to grind' was originally athematic (cf. §43), and thus that the original inflection of *mall(a)-*, despite the apparently stable vocalism of the attested forms (see below), was characterized by paradigmatic ablaut. But we can go further: since virtually all root verbs of the *ḫi*-conjugation that show ablaut have *-ā-* < PIE **-o-* in their strong forms (cf. 3 sg. *šākki* 'knows' : 2 pl. *šaktēni,* 3 pl. pret. *šekkir*; 3 sg. *āri* 'arrives' : 3 pl. *aranzi*; 3 sg. *lāki* 'bends' : 3 sg. mid. *lagāri,* etc.), the probability is high that the 'missing' ablaut variant in the paradigm of *mall(a)-* was **māll(a)-*, representing PIE **mólh₂-*. The hypothesis of an athematic paradigm with **o* : **e* apophony is thus basically confirmed by Hittite.

Hittite does not, however, corroborate the reconstruction **mólh₂-mi, *-si, *-ti,* etc. Such a present could only have yielded a *mi*-verb, with a 3 sg. that would probably have appeared in Hittite as **mălḫzi,* **mălzi,* or **măllaz(z)i,* depending on the timing and extent of secondary analogical changes. Yet *mall(a)-* is a *ḫi*-verb, with an archaic 3 sg. *malli* that points, directly or indirectly, to a pre-Hittite 3 sg. **mólh₂-e(i).* It is almost inconceivable that this **mólh₂-e(i)* could have replaced a still earlier 3 sg. **mólh₂-ti*; no case is known in which a PIE root present in **-mi, *-si, *-ti* was transferred to the *ḫi*-conjugation in Anatolian (cf. §12).[136] There remain only two possibilities: either the present **molh₂-*/**melh₂-* of the non-Anatolian languages and the probable **molh₂-*/**melh₂-* of pre-Hittite are historically unconnected, or the reconstruction of the present **molh₂-*/**melh₂-* is valid for the whole family but the reconstruction of the

[136] This is reason enough to disbelieve the possibility, seriously entertained by Oettinger (1992: 230), that factitive/causative *o* -grade *ḫi* -verbs of the type *lâk* - 'bend' go back to *mi* -presents of the type **lógh-mi, -si, -ti,* etc. As remarked earlier (see Ch. 1 n. 29), the strategy of making the *o* -vocalism of a given stem responsible for its transfer to the *ḫi* -conjugation is simply not a viable approach to the problem.

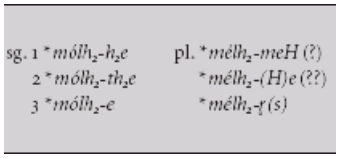
endings as *-*mi,* *-*si,* *-*ti,* etc. is incorrect. Since the first choice is hardly thinkable, the second must be pressed to its logical conclusion. Strictly speaking, the non-Anatolian languages tell us nothing at all about the endings of the athematic present *$molh_2$-/*$melh_2$-, which has everywhere been thematized and provided with the conventional thematic terminations. If, contrary to the conventional wisdom, the athematic present of 'grind' had inflected with the *perfect* endings, we would have no way of recovering this fact from languages like Latin or Germanic, where the quasi-attested thematic paradigm *$mólh_2$-oh_2, *-*esi,* *-*eti* could just as easily have replaced a PIE *$mólh_2$-h_2e, *-th_2e, *-*e* as a 'standard' athematic present *$mólh_2$-*mi,* *-*si,* *-*ti*. Several preconceptions have traditionally stood in the way of pursuing the possibility of a paradigm with the endings *-h_2e, *-th_2e, *-*e,* the most important being the belief that a verb which inflected with the perfect endings ought to have *been* a perfect, with the stative meaning originally appropriate to the perfect. But this view, as we have now seen, is unfounded. The perfect endings were never inherently stative; they are simply the petrified, functionally attenuated continuants of a set of pre-PIE terminations whose productive, formally renewed representatives are the endings of the middle (cf. §§38 ff.). We have met at least one case—the 1 sg. of the thematic conjugation (*$bhéroh_2$ < *$bhéro$-h_2e, etc.; cf. §40)—in which a 'perfect' ending has become so un-perfect-like and un-middle-like in meaning that it is, descriptively speaking, simply a byform of the normal active ending *-*mi*. And it is also a descriptive fact, however we choose to explain it, that the perfect endings have acquired a purely active role in the *ḫi*-conjugation itself. Most investigators have considered the latter state of affairs to be an Anatolian innovation; I suggest that it was not.

§47. Since 1979 I have advocated the position that the root *$melh_2$- had a late PIE present paradigm of the type shown in Fig. 3.1.[137] The post-IE treatment of these forms was perfectly straightforward. Outside Anatolian the inflection was completely modernized; the preponderance of simple thematic reflexes in the daughter languages (*malan, molō, melid,* etc.) suggests that the 3 sg. in *-*e* was directly remade to *-*e-ti,* in much the same way that, for example, the 3 sg. imperfect *á*śaya* 'lay' was remade to *á*śayat* in Vedic Sanskrit, or the 3 sg. perfect in *-*e(i)* was remade to *-*ei-t(i)* (> -*ĕt*) in Latin.[138] Hand in hand with the

[137] This reconstruction (anticipated by Vaillant 1966: 77) is only an approximation— 'ideal' in the sense that it makes no effort to specify, e.g., the possible ways in which presents like *$molh_2$- / *$melh_2$- might have been analogically influenced by active presents of the competing *mi*-type within the parent language itself. We shall return to this point in §§54–5, where some tentative refinements will be introduced.

[138] Cases of this kind are legion; compare also the replacement *paršiya* 'breaks' ⇒*paršiyazi* in Hittite (Watkins 1969: 102), *dugai* 'aids' ⇒*dugaiš* in Germanic (cf. below), 3 pl. *á*duhra* 'gave milk' ⇒*á*duhran, á*duhrata* in Vedic, 3 pl. Lat. -*ēre* ⇒ -*ērunt*. As will be suggested in §§54–5, the creation of forms of the type *$molh_2$-*eti* may have been mediated by a 3 sg. imperfect / injunctive *$molh_2$-*et*.

FIGURE3.1



thematization of *$molh_2$-/*$melh_2$- went the levelling of ablaut differences: *o*-grade was generalized in Germanic and Baltic, *e*-grade in Old Irish and Slavic, and zero grade, reflecting an innovated weak stem *$mḷh_2$-, in Middle Welsh, Umbrian, and (perhaps) Armenian. Only in Anatolian was an appreciable trace of the original inflection retained. Here, at least in the present tense proper (cf. §§54–5 for the preterite/imperfect), the endings of the 1-3 sg. were extended by the *-i* that characterized the other primary endings, giving pre-Anatolian *-*ḫai,* *-*tḫai,* *-*ei* and Hitt. -*ḫḫi* (OH -*ḫḫe*), *-tti, -i* (OH -*e*). In the plural the endings *-weni, -tteni,* and *-anzi,* or their historical predecessors, were taken over from the *mi*-conjugation. Ablaut differences were eliminated, and the stem-form *mall(a)*-, extracted from the 3 pl. *mallanzi* (< virtual *$mélh_2$-*ṇti*) was generalized to all positions in the paradigm.[139] For the phonological development of antevocalic *-*eRH*- to *-*aRR*- in Hittite see Melchert 79, 84 (with references).

It must be emphasized that the form 1 sg. *$mólh_2$-h_2e, under this proposal, meant 'I grind', not 'I grind for myself', 'I engage myself in grinding', 'I have begun to grind and hence am grinding', or anything else that might have distinguished it semantically from an ordinary active present. It is perfectly possible that some such special sense attached to the forms *$mólh_2$-h_2e, *$mólh_2$-th_2e, etc. at a remote stage of pre-PIE, just as it may well be, for example, that the 1 sg. *$bhéro$-h_2 once meant something like 'I carry for myself' or 'I engage myself in carrying'. It can be taken for granted that the use of the h_2e-series of endings was originally functionally motivated in *some* way, and it is not uninteresting to speculate on what this may have been (see §84). But the essential

[139] Or so, at least, it appears. As Craig Melchert reminds me (p.c.), the use of *scriptio plena* to distinguish long from short *-a-* —and hence, in the present case, to distinguish the reflex of PIE *$mólh_2$- from that of *$mélh_2$- —is never obligatory in Hittite. *mall(a)*- could thus in principle also stand for *$māll(a)$- (< *$mólh_2$-), or even for *$māll(a)$- / *mall(a)*-, with -ā- (< *-*o*-) in the singular and -ă- (< *-*e*-) in the plural, as in *kə̂nk*- 'hang' (see below). But neither of these possibilities seems very likely. *ḫi*-verbs whose stem ends in the 'thematic' extension *-a*- rarely show *scriptio plena* of the root vowel (cf. e.g. *ḫărra*- 'smash', *wăšta*- 'sin', *šănna*- 'conceal')—a fact which suggests that 'thematization', when not purely graphic, entailed generalization of *e*-grade of the root, as well as generalization of the stem vowel *-a*-, from the 3 pl. The thematic stem form *malla*- is thus much likelier, in my view, to rest on the root form *$melh_2$- than *$molh_2$-. Nothing in what follows will depend crucially on this point.

point is that by the late protolanguage the motivation for the *h₂e*-endings was purely historical. It was a descriptive fact of late PIE, I suggest, that some roots, such as **gʷhen-* 'slay' and **h₁ei-* 'go', made active root presents of the type in **-mi, *-si, *-ti,* while others—**melh₂-* is our first example—made active root presents in **-h₂e, *-th₂e, *-e.*

In effect, then, the above reconstruction embodies the claim that *the* ḫi- *conjugation was a PIE category.* For want of a better expression, we will use the term '*h₂e*-conjugation' to refer to the PIE inflection of verbs which, like **melh₂-*, made use of the traditional 'perfect' endings to form their active presents.

§48. Another root which lends itself naturally to a *h₂e*-conjugation analysis is **ḱenk-* 'hang', represented in Hittite by the well-attested *ḫi*-verb *kăṅk-* 'hang (tr.)'. In Old Hittite *kăṅk-* is athematic and shows ablaut: the stem is *kānk-* (< **ḱónk-*) in the singular (cf. 3 sg. *kānki,* 1 sg. *gāngaḫḫe* (with graphic or epenthetic *-a-*)), but *kank-* / *gank-* (as if < **ḱn̥k-*; see below) in the plural and other weak forms (3 pl. *kankanzi,* ptcp. *gangant-*, etc.). In the later language a 'thematic' stem *ganga-* was extracted from the 3 pl. (3 sg. *gangai,* mid. *gangattari* 'hangs (intr.)', etc.), but the secondary character of the stem-final *-a-* is shown by the persistence in Neo-Hittite of the verbal noun *gankuwar,* like *malluwar* (cf. §43). The attested forms thus conform perfectly to Oettinger's class II 1 b, the class of consonant-final *ḫi*-conjugation stems with *ā* : *ă* apophony.

Outside Hittite, important cognates are found in Vedic Sanskrit and Germanic. Ved. *śaṅkate* 'worries, hesitates', a form first attested in the śatapathabrāhmaṇa, is a thematic middle, with a preserved root-final velar that makes an earlier athematic paradigm likely (the etymological root vocalism, of course, is unknown).[140] The most informative reflexes of the root **ḱenk-*, however, are found in Germanic. Here we have, first of all, an *o*-grade strong verb **hanhan* (3 sg. **-iþ*) 'hang (tr.)' with representatives in all the major languages (cf. Go. *hahan,* OHG *hāhan,* OE *hōn,* etc.). In addition, Gothic and Old High German preserve a class III weak verb with a 3 sg. in **-aiþ* (Go. *-aiþ,* OHG *-ēt*); the sense is 'hang (intr.)', which matches that of the Neo-Hittite middle *gangattari* and closely approaches that of Ved. *śaṅkate.* The agreement of Gmc. **hangaiþ* with middle forms in Hittite and Vedic is significant, because the Germanic 'stative' 3 sg. in **-aiþ* is ultimately based on an older 3 sg. athematic

[140] The preservation of the velar is otherwise explained by Goto (1987: 304), who attributes it to the influence of the derived noun *śaṅkā́* 'worry'. If this were true, however, we might have expected genuinely old thematic presents like *pā́cati* 'cooks' (< **pékʷ-e* -) and *rócate* 'shines' (< **léuk-e* -) to be remade to **pā́kati* and **rókate* under the influence of nominal forms of the type *pakvā́* - 'cooked, ripe' and *rokā́* - 'light'.

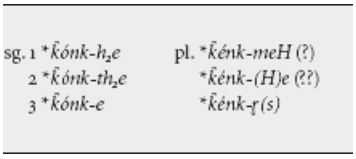
middle in *-*ai* (< *-*oi*), with *-*þ* analogically added from the active (cf. Jasanoff 1978*a*: 73 ff. and §§91 ff. below). A form like OHG *hang***ē***t* 'hangs (intr.)' thus presupposes a pre-Germanic 3 sg. middle **ḱonkói* 'hangs (intr.)', perhaps regularized from earlier **ḱn̥kói*. Despite the apparent levelling of ablaut differences, the underlying accentual contrast between OHG transitive *hāhan* (< **ḱónk-*) and intransitive *hang***ē***n* (< **ḱonk-*') adds further weight to the assumption of an originally athematic paradigm.[141]

The case of the root **ḱenk-* is thus basically similar to that of **melh*$_2$-, though with interesting differences. The Germanic material, supplemented by the testimony of Vedic, points to an athematic present with *o*-vocalism in at least some of its forms. The facts of Hittite likewise imply an athematic paradigm with *o*-grade. The possibility of starting from a perfect is out of the question; a PIE perfect **ḱeḱónke* 'hangs (intr.)', had it not simply become a preterite, would have given a preterito-present ***hanh* (> Go. **hah,* OHG *hāh*) in Germanic.[142] A paradigm **ḱónk-mi, *-si, *-ti,* which would have given a *mi*-verb in Hittite (3 sg. **kānk(a)zzi*), is likewise impossible. The only remaining candidate for the PIE inflection is a *h*$_2$*e*-conjugation present with the paradigm in Fig. 3.2 below. The 3 sg. **ḱónk-e* in this paradigm meant 'hangs' in the transitive sense; the meaning 'hangs (intr.)' was rendered by an athematic middle in 3 sg. *-*or*. The ablauting stem **ḱonk-*/**ḱenk-* was modernized in different ways in the IE daughter languages. Indo-Iranian lost the active and thematized the middle, giving Ved. *śaṅkate*. Germanic thematized the active and transformed the middle into a class III weak verb with 3 sg. **hangaiþ*. The only language in which the **ḱonk-*/**ḱenk-* paradigm remained synchronically athematic was Old Hittite. Here the strong forms were preserved more or less unchanged from late PIE (1 sg. *gāngaḫḫe* < **ḱónk-h*$_2$*e+i,* 3 sg. *kānki* < **ḱónk-e+i*). The weak stem, however, was replaced by **kănk-*, which, if phonologically 'correct', could only have come from a secondarily created **ḱn̥k-*, with substitution of zero grade for *e*-grade as in MW *malu* and Umbrian *kumaltu* (PIE **ḱenk-* would have given **ḱink-* in Hittite; cf. Melchert 139). But here an important methodological caveat is in order. Since the *ā* : *ă* ablaut pattern clearly enjoyed a period of productivity in Hittite, it is neither necessary nor desirable to

[141] The Gothic counterpart of OHG *hang***ē***n* is *haban, -aiþ,* with typical loss of Verner's Law-conditioned *grammatischer Wechsel*. As discussed in §33, a *thematic* middle in 3 sg. *-*oi* would have given Go. **habada,* with the morphology of a passive.To the same lexical family as Hitt. *kānk-*, Ved. *śaṅk-*, and Gmc. **hanh/g-* belongs Lat. *cunctārī* 'delay', a frequentative of the productive type in *-(i)tāre* (cf. *iactāre* 'throw', *cantāre* 'sing', etc.). The derivational basis may have been **ḱonketo-*, the participle of an iterative-causative **ḱonk-ei̯e/o-*.

[142] The Germanic reduplicated preterite **hehanh* (> Go. *haihah,* OHG *hiang*), of course, is productively built to the present **hanhan.* Melchert's tentative characterization of Hitt. *kănk* - as an 'unreduplicated perfect' (139) is hard to reconcile with his *h*$_2$*e* -conjugation interpretation of *mall(a)* - and other *ḫi* -verbs.

FIGURE3.2



trace every case of a plural or middle with *ă*-vocalism to a phonological source. The vocalism of 3 pl. *kankanzi* is probably not phonological at all, but analogical to that of forms like *mallanzi,* where *-ă-* was the phonological reflex of **-e-* (cf. §53).

§49. The examples just seen show how the '*molō*-type'—the PIE present class with **o* : **e* ablaut—yielded two kinds of reflexes in Hittite: (1) seemingly non-apophonic, optionally 'thematic' *ḫi*-verbs with graphically invariant vocalism, like *mall(a)-*; and (2) athematic *ḫi*-verbs with visible *ā* : *ă* ablaut, like *kănk-*. Both patterns are well represented in the Hittite lexicon. Outside Anatolian, however, the evidence for *molō*-presents is comparatively modest, and the number of cases with precisely the *molō* profile—thematic or *e̯/o*-presents with *o-* and *e*-grade both directly attested—is relatively small. The best such examples, other than **molh$_2$-/*melh$_2$-* itself, are the following:[143]

> **bhodh(h$_1$)-/*bhedh(h$_1$)-* 'dig, poke':[144] OCS *bodǫ, bosti* 'stab', Lat. *fodiō, -ere* (OLat. pres. ptcp. *fodentēs*) 'dig' (*o*-grade); Lith. *bedù, bèsti* 'implant' (*e*-grade).[145]

[143] As already noted, the basic corpus of *o* -grade presents from the non-Anatolian branches of the family, including many examples that have since been rejected and/or explained in other ways, is to be found in Gärtchen 1905. The present list is based on the inventory in Jasanoff 1979*a,* with the omission, *inter alia,* of the following items: (1) **ĝheu* - / **ĝheu* - 'pour', posited on the strength of Gk. χόω 'heap up' (better taken as a denominative in *-όw* from *χοῦς* *(< *χό*(f)os*) 'heap') and Toch. B subj. *kewu* 'I will pour' (better referred to an aorist; cf. §§117, 122); (2) **g$^{\text{ʰ}}$hodh* -/**g$^{\text{ʰ}}$hedh* - 'ask', posited on the strength of OIr. *guidid* 'prays' (better taken from **g$^{\text{ʰ}}$hedh-e̯/o* -, with labiovelar-induced rounding of **-e* - to **-o* -; cf. Cowgill 1980: 68); (3) **g$^{\text{ʰ}}$hor* -/**g$^{\text{ʰ}}$her* - 'burn, posited on the strength of Lith. *gariù* and OCS *gorjǫ* 'be on fire' (unproblematically referrable to a perfect); (4) **ḱeu̯* - / **ḱeu̯* - 'move', posited on the strength of Arm. aor. *ĕ'ogay* 'I went' (better taken from an imperfect **ḱéu-to, *ḱéu̯-n̥to* (: Ved. *cyáθāna* - 'moving', Gk. σεῦται 'rushes'), with **-eu̯* - to **-ou̯* - by regular sound change; cf. Klingenschmitt 1982: 277); (5) **nos* -/**nes* - 'return', posited on the strength of Toch. A *nas* -, B *nes* - 'be' (better taken from a Narten stem **nēs* - > **ñes* - (cf. lengthened-grade participle A *nāṃtsu* < **nonōs* -)), with secondary depalatalization as in other frequently used unstressed forms; see further App. 1); (6) **sḱok* - / **sḱek* - (or **skoḱ* - / **skeḱ* -) 'go off', posited on the strength of OIr. *scuichid* 'departs, ends' (better taken from an iterative-causative **skok-e̯/o* -).

[144] For the reconstruction of the root with a final **h$_1$* see §50 with note 36.

[145] As is their wont in such cases, the editors of *LIV* adopt (51) the ad hoc expedient of setting up both a reduplicated **bhébh(o)dh* - and a thematic **bhédh-e/o* - to account for the co-occurrence of *o* - and *e* -vocalism.

**bhorH-/*bherH-* 'hit, cut': OIcel. *berjask* (< **barjan*) 'fight' (secondarily weak), Lith. *barù, bárti* (OLith. 1 sg. *barmi*)[146] 'scold', OCS *borjǫ (sę), brati (sę)* 'fight' (*o*-grade); Lat. *feriō, -īre* 'strike' (*e*-grade).[147]
**dhou-/*dheu-* 'run': Ved. *dhā́vati* 'runs, rushes', OIcel. *deyja,* pret. *dó* (< **dawjan, *dōw*) 'die' (*o*-grade); Ved. *dhávate* 'runs', Gk. θέω, θεῖω 'run' (*e*-grade).[148]
**ĝhongh-/*ĝhengh-* 'stride, go': Go. *gaggan,* OHG *gangan,* etc. 'go' (*o*-grade); Lith. *žengiù, žeñgti* (OLith. *žengmi*) 'stride' (*e*-grade).[149]
**ghrobh-/*ghrebh-* 'dig': Go. *graban* 'dig' (*o*-grade); Latv. *grebju, grebt* 'hollow out', OCS *po-grebǫ, -greti* 'bury' (*e*-grade).[150]
**h₂u̯os-/*h₂u̯es-* 'abide, spend the night': OIr. *foaid* 'overnights (with)', Arm. *goy* 'is, exists' (*o*-grade); Go. *wisan,* OHG *wesan* 'be', Ved. *vásati* 'abides' (*e*-grade).[151]
**sor-/*ser-* 'watch': Gk. *ἐπὶ ὄρομαι* 'watch over', ὄρει· φυλάσσει (*o*-grade); YAv. *haraiti* 'watches' (*e*-grade).[152]

To these can be added an *s*-present:

**h₂u̯og-s-/*h₂u̯eg-s-* 'grow': OHG *wahsan,* OIcel. *vexa* < **wahsjan* 'grow' (*o*-grade); Gk. ἀ(Ϝ)έξω, -ομαι 'increase (tr. and intr.)' (*e*-grade)[153]

and a similar inner-Greek example:

**gʷol-s-/*gʷel-s-* 'want': βούλομαι, Dor. βώλομαι 'want' (*o*-grade); Dor. δήλομαι, Thess. βέλλομαι 'id.' (*e*-grade). Cf. Hom. βόλομαι 'id.' < **gʷol-*.[154]

[146] Note that the existence of an Old Lithuanian 1 sg. pres. in *-mi* in no way precludes the possibility of a PIE 1 sg. **bhórH-h₂e*. OLith. *-mi* (reflexive *-míe-s*) goes back to Common Baltic **-mai* (cf. Old Prussian *asmai* 'I am', etc.). The Baltic 1 sg. in **-mai* is a compromise between the **-mi* of 'normal' athematic presents and the **-ai* (< **h₂e* + *i*) of the *h₂e* -conjugation; the Greek 1 sg. middle in -μαι is a typological parallel (§32).

[147] The *LIV* solution, again, is to set up a reduplicated **bhé(r)bh(o)rH* - (64 f.); Lat. *feriō* is said to be secondary.

[148] *LIV* (128) sets up a Narten present **dhēu* - / **dheu* - to account for *dhā́vati,dhávate,* etc., while assuming an iterative-causative **dhou̯-éie/o* - to account for Gmc. **dawjan.* But **dawjan* is a primary *-ie/o* -present with a strong preterite, suggesting that the long root vowel of *dhā́vati* is better taken from **-o* - by Brugmann's Law.

[149] *LIV* (153 f.) sets up **ĝhégh(o)ngh* - and **ĝhéngh-e/o* -.

[150] *LIV* (179 f.) sets up **ghéghr(o)bh* - and **ghrébh-(e/o-).*

[151] The *o* -grade forms are dismissed without satisfactory explanation in *LIV* (260 f.).

[152] The absence of digamma in Mycenaean *o-ro-me-no* (ptcp.) makes this equation preferable to the traditional derivation of ὄρομαι, ὁράω, etc. from **u̯er* - 'perceive' (: OHG *wara* 'attention', Toch. B *were* 'smell', etc.). *LIV* (484) quotes with approval Rix's view (1994: 77–80) that the *o* -grade of the Greek forms is a secondary import from the nominal stems **soró* - and **sorá* -.

[153] The more common present αὐομαι probably goes back to a *-ie/o* -present **h₂u̯g-s-ie/o* - (: Av. *uxšiia* -), as correctly stated in *LIV* 257 f. But the *LIV* editors' decision to label *ἀ(ϝ)έξω, -ομαι* a 'Neubildung' is surprising, and their analysis of Gmc. **wahs(j)an* as an iterative-causative in **-éie/o* - seems clearly wrong.

[154] According to a common view (represented e.g. by Frisk, *GEW* 1: 259), most of the forms of this verb go back to an *s*-aorist subjunctive **gʷélse/o-*, the regular *e*-grade of which was retained in δήλομαι, etc., but replaced by *-o-* (taken from the perfect **βέβολα*, the noun *βουλή* (< **βολᾰ́*) or the *s*-less *o*-grade present βόλομαι) in Att. βούλομαι. None of this seems very likely. Since *βούλομαι* is not otherwise associated with an *s*-aorist, there is no reason to invent one for the sole purpose of accounting for a set of forms that can more simply and elegantly be explained on the basis of an *s*-present of the type **h₂u̯og-s-* / **h₂u̯eg-s-*. Likewise needlessly complex is the *LIV* account (186), which, in part following Peters (1986: 310 f.), sets up the root as **gʷélh₃-*, explains the present βολε- by metathesis from **βελο-*, and assumes a nasal present with multiple analogical vocalizations to account for βούλομαι, δήλομαι, and βέλλομαι. The relationship of the present **gʷol-s-* / **gʷel-s-* to the non-sigmatic *molō*-present **gʷol-*/ **gʷel-* (βόλομαι) strongly recalls that of OHG *wahsan* to Go. *aukan* 'increase' (< **h₂ou̯g-* / **h₂eu̯g-*?).Another inner-Greek example of *o-* and *e*-vocalism in the same verb is suggested by the Hesychian gloss εἴχεται· οἴχεται ('be gone, rush along'), but the philology is suspect (cf. Latte 1966: 239). The *LIV* reconstruction of the root of οἴχεται as **h₃eigh-* (263) sidesteps the need for an *o*-grade present, but at the cost of ruling out the standard etymology with Lith. *eigà* 'motion'.

In a number of further verbs there is evidence for an *o*-grade present in more than one language, but no unambiguous reflex of the *e*-grade weak stem. **ḱonk / *ḱenk-* is such a case. Others are **h₁loiĝ-/*h₁leiĝ-* 'leap' (Go. *laikan* 'leap', Ved. *réjate* 'trembles'), **kolH-/*kelH-* 'strike' (Lith. *kalù, kálti* 'strike', OCS *koljǫ, klati* 'stab, sacrifice'), **(s)kop-/*(s)kep-* 'chop' (Gk. κüπτω 'chop', Alb. *kep* 'I chop'), and **u̯olHg-/*u̯elHg-* 'roll' (OE *wealcan* 'roll', Toch. B *woloktär* 'rests' (='turns in'), Ved. *válgati* 'jumps').[155] In addition, almost every IE language offers more or less isolated examples like Go. *stautan* 'push' (< **(s)toud-*), Go. *faran* 'go' (< **por-*),[156] Lat. *lūdō* 'play' (< **loid-*),[157] Gk. κǫόω 'strike' (< **krous-*),[158] Ved. *kampate* 'trembles' (< **komp-*), Lith. *kasù, kàsti* 'dig up' (< **kos-*),[159] and others. To refer such cases, even indirectly, to reduplicated presents or perfects flies in the face of common sense.

A high percentage of these words are of an 'expressive' character, which partly accounts for their restricted distribution. As noted by both Gärtchen and Hiersche, the majority fall into two semantic groups: verbs of motion ('go', 'stride', 'roll'), and verbs of vigorous or violent activity ('grind', 'dig', 'strike',

[155] The absence of a laryngeal reflex in *válgati* (< **u̯olHg-*) is due to Saussure's law of laryngeal loss in the vicinity of **-o-*; note further the preservation of the velar, as in *śaṅkate* (cf. n. 14). The phonology of Toch. B *woloktär,* to the root *walāk-* (cf. *koloktär* 'follows', root *kalāk-*), is more difficult. PIE **u̯olHg-*, with the laryngeal retained or restored despite the Saussure effect, would probably first have yielded pre-Toch. **wolak-*, whence Toch. B pres. ***walāktär or **wālaktär.* It is just possible that the actually attested *woloktär* goes back to a metathesized pre-Tocharian root **walok-*.

[156] Perversely consistent with their habit of referring *o*-grade presents to otherwise unattested reduplicated stems, the editors of *LIV* (425) actually separate Gmc. *faran,* which they take from a wholly fabricated PIE **pé-por-ti,* from Ved. *píparti* 'carry across', which they take from a preform **pi-pér-ti.* In so doing they discard the best potential example, flawed as it is, of a Germanic *o*-grade present with an attested reduplicated cognate elsewhere in the family.

[157] With unambiguous *o*-grade in the derived noun OLat. *loedus.*

[158] Identified as a *molō*-present by Peters (1987: 289).

[159] Possibly from the same root as OCS *česati,* pres. *češǫ* 'comb', but not from the same paradigm: pre-Slavic **kes-i̯e/o-* is the replacement of an ordinary root present in *-mi,* which surfaces in Hitt. *kišẓi* 'combs'.

'push', 'chop').[160] Such meanings lend themselves naturally to expression by iterative formations of various kinds—a fact which suggests that the type as a whole may have had some such origin (see §84). A prehistoric derivational relationship between *molō*-presents and the better attested *o*-grade iterative-causatives in *-*e̯ie*/*o*- is quite possible, although the precise character of the relationship is impossible to spell out in detail.[161]

§50. Thus far, the only *ḫi*-verbs that have been specifically identified with *molō*-presents outside Anatolian are *mall(a)*- and *kăn̆k*-. But there are other *ḫi*-verbs whose original status as *molō*-presents is confirmed by evidence from elsewhere in the family.

The best such case is *padd(a)*- 'dig' (3 sg. *pád-da-i,* OH 1 sg. *pád-da-aḫ-ḫi,* etc.), which is obviously cognate with Lat. *fodiō,* OCS *bodǫ,* and Lith. *bedù* (see above). Formally, the treatment of the ablauting present is essentially the same as in *mall(a)*-, with levelled -ă- throughout the paradigm and 'athematic' forms like 3 sg.mid. *páddār'i* and inf. *pattuanzi*. The consistent *-dd*- of the Hittite forms is probably best accounted for by setting up a root-final laryngeal; a cluster *-*dhH*- would have given a descriptive geminate in Hittite, as in *titti*- 'suckle' < **dhi-dhh*$_1$*-i*- and (*mutatis mutandis*) *mekki*- 'much' < **meĝ-h*$_2$*-i*-.[162] The treatment of the dental cluster in Lat. *fossus* suggests that the laryngeal was **h*$_1$, which was lost between obstruents in non-initial syllables in the parent language.[163]

[160] It is thus legitimate to regard etymologically isolated but semantically 'appropriate' words like Gmc. **hlaupan* 'leap', **swaipan* 'sweep', etc. as potential *molō* -presents as well; cf. below.

[161] Such a connection was already suspected over a half century ago by Stang (1942: 39 ff.).

[162] All intervocalic stop +laryngeal clusters yielded graphic geminates in Hittite, but their phonetic and phonological interpretation is not always clear. According to the view taken here, sequences of the type *-*TH* - (i.e. voiceless stop +laryngeal) fell together with plain *-*T* -, both giving a phonetic geminate [-TT-], while original *-*DH* - (i.e. voiced or voiced aspirated stop +laryngeal) and *-*D* - remained distinct from each other and from *-*T(H)* -, giving [-DD-] and [-D-], respectively. *šākki* 'knows' (< **sókH-ei*) and *lukkizzi* 'kindles' (< **louk-ĝie-ti*) thus had [-kk-] in my opinion, while *mekki* (< **meĝ-h*$_2$*-i* -) had [-gg-] and *wāki* 'bites' (< **u̯āĝ-ei*) had [-g-]. Melchert, by contrast, interprets the graphic gemination effect as genuine devoicing and limits it to **h*$_2$; under his assumptions, *mēkki* stands for [mAkki] (77). The apparent laryngeal gemination in reduplicated forms like *titti* - < **dhi-dhh*$_1$*i* - is seen by Melchert as analogical devoicing induced by the phonological devoicing of **d(h)*- to *t* - word-initially (Melchert 19, following Eichner 1980: 160).

[163] The clearest illustration of the rule is furnished by the behaviour of the desiderative (> future) morpheme *-*h*$_1$*s* -, which retains its laryngeal after liquids and nasals (cf. Gk. τεϑ- 'stretch', fut. τενέ [σ]ω; Ved. *kṛ* -, fut. *kariṣyati*) but loses it after stops (Gk. γραφ- 'write', fut. γράψω; Ved. *vac* - 'speak', fut. *vakṣyati*); cf. §78, with n. 16. The same phenomenon is probably responsible for the 'missing schwa' in the weak present forms of Ved. *dhā* - (< **dheh*$_1$ -) and (analogically) *dā* - (< **deh*$_3$ -): cf. 2 sg. impv. *d(h)ehí* < **d(h)a(d)zdhi* < **d(h)ed(h)H-dhi,* 2 pl. impv. *d(h)attá* < **d(h)ed(h)H-té,* etc. Note also Hitt. *zikk* - 'put repeatedly' < **dhh*$_1$*-sḱ* -, perhaps originally a compositional form.

Likewise assignable to a *molō*-present is *warš-* 'wipe, pluck' (3 sg. *warši* (OH *war(a)šše*), pret. 3 sg. *war(a)šta,* 3 pl. *waršer*), for which a root etymology with Lat. *uerrō* (OLat. *uorrō*) 'sweep' and RCh. Sl. *vbrxu,* inf. *vrěšti* 'thresh' is standardly assumed. Oettinger (429) takes *warš-* from an iterative-causative **u̯ors-é̯ie/o-*, but there is no comparative evidence for such a stem, which would in any case have given Hitt. **waršezzi*. The vocalism of OLat. *uorrō,* which could in theory go back to either **u̯ors-* or **u̯r̥s-*, is ambiguous. *LIV*[2] (631) opts for the second choice, positing a present **u̯r̥s-é/ó-* on the strength of the Slavic form. The extreme rarity of *tudáti*-presents in Latin, however, argues for **u̯ors-*.[164] Wherever the truth lies, the Latin, Slavic, and Hittite facts taken together point to a present **u̯ors-/*u̯ers-*. The Hittite apophonic treatment is the same as in *mall(a)-*, with at least graphic generalization of -ă-.

Hitt. *išpă̄nt-* 'libate' (OH 1 sg. *išpantaḫḫe,* 3 sg. *išpanti, šipānti, šip(p)anti,*[165] 3 pl. *išpantanzi,* etc.) is cognate with Gk. σπένδω 'pour, libate'. Despite the absence of *o*-grade primary forms in any third language, the Greek and Hittite forms together point to a *molō*-present **spond-/*spend-*. The only other close relative is Lat. *spondeō* 'vow' (< **spond-é̯ie/o-*), the extra-presential forms of which (perf. *spopondī,* ptcp. *spōnsus,* 2 sg. subj. *spōnsīs*) suggest the possible former existence of a primary **spondō*.[166]

Greater scepticism is indicated in the case of *iškalla-* 'tear' (< **skelH-*; cf. Lith. *skélti* 'split', etc.), which has the right meaning for a *molō*-present and even a possible *o*-grade cognate in Gk. σκὐλλω (< **skólH-i̯e/o-*) 'flay, rend, snatch violently' (cf. Vine 1999: 566).[167] The *ḫi*-conjugation membership of this verb, however, is not secure; the Old Hittite paradigm is deponent, with a puzzling 3 sg. 'stative' *iškallāri*.[168]

No further word equations are quotable. But a fair number of root *ḫi*-verbs, e.g. *ānš-* 'wipe off', *ărk-* 'cut off', *ārr(a)-* 'wash' (:Toch. A *yär-* 'bathe'; root **h₁erH-*), *ḫarra-* 'crush', *iškă̆r-* 'implant', *išpă̆r-* 'tread under' (: Ved. *sphuráti* 'push away', Lith. *spìrti* 'kick away', etc.; root **sperH-*), *ištāp- / ištapp-* 'shut up',

[164] Note that the same ambiguity surrounds the supposed *tudáti* -present *currō* 'run', which could equally well go back to an *o* -grade **korse/o* -. The Latin change of *uorrō* to *uerrō* is discussed by Leumann (1977: 47–8).

[165] With unexplained variation between *išp* - and *šip* -. I am not persuaded by Forssman's attempt (1994: 102 ff.), ingenious though it is, to derive the spellings with *šip* - from a dissimilated form of the reduplicated stem **spe-spond* -.

[166] The same possibility presents itself in the case of *tondeō* (*totondī, tōnsus*) 'shear' and *mordeō* (*momordī, morsus*) 'bite', which fall semantically into the 'violent activity' class and could, at least in principle, have replaced primary *o* -grade presents **tondō, *mordō.*

[167] For the phonology compare μῦλλω (cf. n. 5) and also perhaps σὺ ρω 'drag' (< **tu̯or* -?), which Vine (570 f.) explains in the same way.

[168] The curious mismatch between the middle inflection and active semantics of *iškalla* - recurs in the case of *ḫatta* - 'chop' (3 sg. *ḫatta(ri)*).

mārk- 'cut up' (: Ved. *marcáyati* 'damages'; root **merk-*), *măld-* 'speak solemnly' (: Lith. *meldžiù* 'I ask, pray'; root **meldh-*), have characteristic *molō*-type semantics.[169] It would be surprising indeed if at least some of these did not go back to the same formation as *mall(a)-*, *kănk-*, *padd(a)-*, and *warš-*.

§51. It emerges, then, that a considerable number of *ḫi*-conjugation root verbs can be explained—and a few *must* be explained—as inherited *molō*-presents. Inevitably, the question arises whether this analysis can be generalized to *all* root *ḫi*-verbs—whether all root *ḫi*-verbs, so to speak, are *molō*-presents. The answer will depend in part on how we assess the major remaining class of such verbs, the small but conspicuous type represented by *šăkk-* / *šekk-* 'know'.

šākk- / *šăkk-* / *šekk-*, with not two but three stem variants, is the flagship representative of Oettinger's class I 1 c. The Old and Middle Hittite forms (mostly only indirectly observable from later copies) are well documented in Oettinger's survey (54–5): *šākk-* is the strong stem, proper to the singular indicative and imperative (1 sg. *šākḫi,* 2 sg. *šākti,* impv. *šāk,* 3 sg. *šākki,* impv. *šākku*); *šăkk-* is the stem of the present plural indicative (2 pl. *šāktēni*) and participle (*šakkant-*); *šekk-* is the stem of the preterite plural and plural imperative (2 pl. impv. *šekten,* 3 pl. indic. *šekkir,* impv. *šekkandu*). The contrast between the two weak stems is most dramatically displayed in the difference between *šaktēni* (OH, OH+),[170] with accented primary ending and ă-vocalism, and *šekten* (OH+), with unaccented secondary ending and *e*-vocalism. In later Hittite *šăkk-* gave way to *šekk-*, so that *šaktēni, šakkant-*, and 3 pl. **šakkanzi* were replaced by *šekteni, šekkant-*, and *šekkanzi,* respectively.

A number of other verbs also show the -ā-/-ă-/-ē-[171] alternation pattern. *ḫāš-*/ *ḫăšš-* / *ḫēš-* 'open' appears in Old Hittite manuscripts with a 3 pl. present in -ă- (*ḫaššanzi*) and a 3 pl. preterite in -*ē*- (*ḫēšer*); the expected 3 sg. *ḫāši* is attested in Middle Hittite. In an altered and less consistent form, the pattern recurs in *ḫăn-* / *ḫēn-* 'draw (water)', *karăp-* / *karip(p)-* 'eat (of animals), fressen', and the weakly attested *šarap-* / *šarip(p)-* 'sip', all of which show the partial spread of *e*-vocalism, as in *šăkk-* / *šekk-* itself, from the preterite and imperative plural to

[169] The relevant etymological literature is summarized by Puhvel, *HED* (henceforth 'Puhvel') and Tischler, s.vv. For the *o* -grade of *măld* -, a verb of speaking, compare perhaps Lith. *tariù* 'I utter', Gmc. **swar(j)an* (Go. *swaran,* OE *swerian*) 'swear, answer', OHG *lahan* 'blame', etc.

[170] The standard practice is here followed of using 'OH +' to indicate an Old Hittite text preserved in a Middle Hittite manuscript, 'OH++' to indicate an Old Hittite text preserved in a Neo-Hittite manuscript, and 'MH +' to indicate a Middle Hittite text preserved in a Neo-Hittite manuscript. I am indebted to Craig Melchert for helping me navigate the philological complexities of the *šăkk-/šekk* - class.

[171] Since there is no contrast between long and short -*e* - under the accent in Hittite, our practice here will simply be to write -ē- or -*e* - according to the more common or revealing older spelling.

the rest of the paradigm.[172] An interesting side effect of the productivity of *-e-* was the creation within Neo-Hittite of the 3 pl. preterite forms *erir* (: *ăr-* 'arrive') and *ekir* (: *ăk(k)-* 'die'), replacing older *arir* and *akir*.

How is the three-way ablaut pattern of these verbs—or more precisely, the contrast epitomized by the pairs 2 pl. *šaktḗni* (pres.) : *šekten* (pret. / impv.) and 3 pl. *ḫaššanzi* (pres.) : *ḫḗšer* (pret.)—to be explained? The prehistory of *šăkk- / šekk-*, as discussed in Ch. 1 (§§8 ff.), has been the object of considerable speculation. The root was almost certainly **sekH-* 'cut, divide' (:Lat. *secāre,* etc.), with the same semantic development ('divide into parts' > 'distinguish the parts of' > 'come to understand') as in Toch. AB *kärs-* 'know' (:Hitt. *karš-* 'cut', Gk. ἀκερσεκόμης 'with unshorn hair'), and—probably also from **sekH-*—Lat. *sciō, -īre* 'know' (< **skH-i-*; cf. *LIV*[2] 475). Although the stative meaning 'know' has tempted many scholars to assume an original perfect like Gk. οἶδα or Ved. *jajñau,* the absence of reduplication in *šăkk- / šekk-*, together with the utter absence of any evidence that the root **sekH-* formed a perfect in PIE, makes this extremely unlikely.[173] The possibility of a *molō*-present **sokH-*/**sekH-* would seem more attractive *a priori*; the stative meaning 'know' could then have evolved from 'come to understand' by a kind of pragmatic anticipation ('I am learning/getting to know French'=I know some French already). Examples of this semantic development in verbs of knowing and perceiving, as noted earlier (Ch. 1 n. 20), are legion; cf. Fr. *connaître,* It. *conoscere,* etc. 'know' < Lat. *cognōscere* 'recognize, get to know'; further Alb. *njoh* 'I know' (< **ĝnḗskō*), Ved. *jānáti,* and Eng. *know* (< Gmc. **knḗjan*), all with the formal structure, and presumably the functional history, of presents.[174] It is a disquieting fact, however, that supporting evidence outside Anatolian for an inherited *molō*-present—evidence that might have come, for example, from a present of the type **sokH-e/o-* or **sokH-ie/o-* in Germanic or Balto-Slavic—is altogether lacking. The only present reconstructible for the root **sekH-* in PIE is the Narten present **sḗkH-*/**sekH-*, the main support for which comes from OCS *sěkǫ* 'I chop'. On the strength of the Latin perfect *secuī* (< **sekă-wai*) and the

[172] The spread of *-e* - at the expense of -ă- was completed prehistorically in the case of the morphologically obscure causative *ašāš- /ašḗš* - 'settle (tr.)', although the expected 'second' weak stem *ašăš* - is still preserved in the Old Hittite iterative *ašašk* -. Nothing useful can be said about the irregular *ḫamank-/ḫamenk* - 'bind' (OH ptcp. *ḫamengant* -), the synchrony and diachrony of which remain completely obscure.

[173] Once again, it cannot be emphasized too strongly that the lack of reduplication in the PIE perfect **u̯oid* - / **u̯id* - 'know' is a unique feature. The fact that the root **u̯eid* - 'catch sight of' made an irregular perfect in the parent language does not license the assumption of such a perfect for other verbs. The special history of **u̯oid* - / **u̯id* - is discussed in App. 2.

[174] So too Ved. *śṛ́ṇóti* 'hears', OIr. *ro·cluinethar,* etc.

not infrequent association of Narten presents with root aorists, *LIV* (475) sets up both a Narten present **sḗ̆kH-* and a root aorist **s(e)kH-*.

karăp- / karip(p)- and *šarap- / šarip(p)-*, the only other verbs of the *šăkk-/šekk-* class whose etymology is secure, likewise lack the Indo-European 'profile' of typical *molō*-presents. *karăp- / karip(p)-* is probably best taken, with Risch (1975: 253), from PIE **ghrebhh$_2$-* 'seize', which forms a root aorist and nasal present in Indo-Iranian (cf. Ved. *ágrabhīt, grbhṇấti,* etc.) and an apparent Narten present in Lithuanian (*grébiu,* inf. *grębti* 'snatch, rake').[175] *šarap- / šarip(p)-* uncontroversially goes back to PIE **srebh-* 'sip up', which, like **ghrebhh$_2$-*, shows lengthened-grade forms in Lithuanian (*srebiù,* inf. *srẽbti* 'drink up') and otherwise appears to have formed an old root or thematic aorist (cf. Arm. *arbi* 'I drank' < **s̥rbh-e/o-*; *LIV* 534).[176] Taken together, the three verbs *šăkk- / šekk-*, *karăp- / karip(p)-*, and *šarap- / šarip(p)-* unmistakably pattern together, not only in their shared apophonic behaviour, but also in their extra-Anatolian connections. All have lengthened-grade counterparts in Baltic or Slavic, and none have *o*-grade cognates of the type expectable from canonical *molō*-presents.

§52. The contrast between -ă- in the present plural (*šaktḗ̆ni, haššanzi*) and *-e-* in the preterite plural (*šekten, ḫḗ̆šer*) has yet to be addressed. It is important to recall at the outset that this pattern is not confined to the *ḫi*-conjugation. In the *mi*-conjugation, ablauting verbs are regularly 'strong' in the preterite plural and 2 pl. imperative, giving rise to such contrasts as 3 pl. pret. *ešer,* 2 pl. impv. *ḗ̆šten* (MH) vs. 3 pl. pres. *ašanzi* (: *ḗ̆š- / aš-* 'be'); 3 pl. pret. *ḗ̆ppir,* 1 pl. *ḗ̆ppwen* vs. 3 pl. *appanzi* (:*ḗ̆pp- / app-* 'take, grasp'); 3 pl. pret. *ekuir* vs. 3 pl. pres. *akuanzi,* 1 pl. *akweni* (:*eku- / aku-* 'drink'); 3 pl. pret. *še*[*šir*], 2 pl. impv. *šešten* vs. 3 pl. pres. *šašanzi* (MH) (: *šeš- / šaš-* 'sleep'); 3 pl. pret. *eter,* 2 pl. impv. *ḗ̆zten* (MH) vs. 3 pl. pres. *adanzi,* 1 pl. *atweni* (: *ḗ̆d- / ad-* 'eat').[177] The match between the distribution of *ḗ̆š-*, *ḗ̆pp-*, *šeš-*, *ḗ̆d-* vs. *ăš-*, *ăpp-*, *šăš-*, *ăd-* in the plural of the *mi*-conjugation, and the distribution of *šekk-*, *ḫḗ̆š-* vs. *šăkk-*, *ḫăšš-* in the plural of the *ḫi*-conjugation, is surely not accidental.

[175] This etymology is semantically preferable to the connection with **ghrebh* - 'dig', favoured in Jasanoff 1979*a* : 86. The editors of *LIV* (179), following *EWAia* i. 506, set up the root as **ghrebh$_2$* - and attribute the Lithuanian long vowel to Winter's Law before PIE *-b- (cf. n. 8 above). The idea smells too strongly of the lamp to be convincing.

[176] The only present from the root **srebh* - in Greek is the iterative-causative ῥοφέω (ῥοθφέω) 'sop up', with nominal derivatives ῥοφῆμα; and *ῥοφητός.* The latter forms imparted their vocalism to the parallel deradical forms ῥόμμα and *ῥοφητός,* from which in turn was abstracted an artificial simplex ῥόφως, known from the late grammatical literature.

[177] Unless otherwise specified, all forms are OH or OH +. Fuller documentation of the distribution of *-e* - and *-a* - is given by Hart (1980: 51 ff.).

In the *mi*-conjugation, the pattern *ešer, šešir, eter* (pret.) : *ašanzi, šašanzi, adanzi* (pres.) is an Anatolian innovation with a complex history. The verb 'to eat' originally had a Narten paradigm with full grade (*$h_1$éd-*) throughout the plural; the vocalism of the 3 pl. *adanzi* must therefore be analogical to the functional zero grade of properly mobile (hysterokinetic) forms like *ašanzi* and *šašanzi*. The -ă- in these latter cases can be explained in a variety of ways—by extension of 'schwa secundum' (*šašanzi* < *s_es-énti*; cf. Oettinger 98), by transfer from zero-grade forms of the type *tarḫanzi* (< *trh_2-énti*) 'they conquer', or (least likely) by generalization of a vocalized laryngeal reflex (*ašanzi* < *h_1s-énti*).[178] The surprising fact is that the zero-grade vowel -ă-, whatever its ultimate source(s), was *not* introduced into forms like the 3 pl. pret. *eter* or the 2 pl. impv. *ēzten*. Indeed, zero-grade vocalism seems actually to have been *eliminated* from the theoretically expected 3 pl. forms **ašer* 'they were' and **šašer* 'they slept', which were remade to full-grade *ešer* and *šešir*. Descriptively speaking, the preterite plural of ablauting *mi*-conjugation root verbs in Hittite is uniformly 'strong'. To understand the reason for this we must go back to the system of conjugation in the parent language itself, where two reconstructible apophonic peculiarities anticipate the situation in Hittite:

(1) The root aorist indicative, unlike the present and imperfect, was characterized by *e*-grade everywhere outside the 3 pl. This pattern is normal in Indo-Iranian (cf. Ved. 1 pl. *(á)karma, (á)ganma, (á)dāma,* etc., 2 pl. *(á)karta, (á)ganta, (á)dāta,* but 3 pl. *(á)kran, (á)gman, (á)duḥ*), and is confirmed by Greek examples of the type 1 pl. ἔστημεν 'we stood (still)', ἔφθημεν 'we came first', etc., 2 pl. ἔστητε, ἔφθητε, but 3 pl. ἔσταν, *ἔφθαν (ἔφθησαν).[179]

(2) The 2 pl. imperative was characterized, at least optionally, by *e*-grade—not only in the root aorist (cf. Ved. *kárta* (also *kṛta*), *gánta (gata), dāta,* śróta (*śruta*), etc.), but also in athematic presents (cf. *éta* beside *itá* 'go!', *hantana* 'slay!',[180] *juhóta* beside *juhuta* 'pour!'; *kṛṇóta* beside *kṛṇutá* 'make!' *yunákta* 'yoke!'). Lat. 2 pl. impv. *este* 'be!' is a probable Italic comparandum, as observed by Watkins (1969: 32–3).

[178] The three possibilities are not, of course, mutually exclusive. The origin of the Hittite (and Proto-Anatolian) zero grade in -ă- is discussed by Melchert (66–7), who cites the broadly similar views of Eichner and Kimball.

[179] Cf. Hoffmann 1968*b* : 7 f. As argued in Jasanoff 1991*b* : 106 ff., the synchronically irregular-seeming full grade of the 1, 2 pl. and 1-3 du. was analogically imported into the optative in late PIE, producing forms like 1 pl. **dhéh$_1$ -ih$_1$ -me* and 2 pl. **dhéh$_1$-ih$_1$-te* (: **dheh$_1$* - 'put'), whence Gk. θεῖμεν, θεῖτε and Ved. *dhe* [*yá* -].

[180] To which may be added the particle *hánta* 'come on!' (< * 'strike!').

These facts are no doubt related. They can be combined by supposing that the PIE 1 pl. and 2 pl. active, along with the entire dual, were originally 'strong' in *all* categories that took the secondary endings—the imperfect as well as the aorist, imperative, and 'injunctive'.[181] If so, then the 1 pl. and 2 pl. imperfect corresponding to the presential root **gʰhen-* 'slay' would originally have been **gʰhén-me* and **gʰhén-te,* just as the 1 pl. and 2 pl. aorist corresponding to the root **ḱleu-* 'hear' were **ḱléu-me* and **ḱléu-te.* But the imperfects **gʰhén-me* and **gʰhén-te* were correlated with zero-grade present forms **gʰhn̥-mé(s)* and **gʰhn̥-té* in the parent language, while no such presents existed beside the aorists **ḱléu-me* and **ḱléu-te. *gʰhén-me* and **gʰhén-te,* therefore, but not **ḱléu-me* and **ḱléu-te,* would have been subject to analogical pressure to adopt the zero grade and oxytone accentuation of the corresponding present forms (**gʰhén-me, *gʰhén-te* ⇒**gʰhn̥-mé, *gʰhn̥-té*). The result was the situation that we find in Indo-Iranian and Greek: the imperfect indicative is weak throughout the dual and plural, while the root aorist indicative retains its inherited full grade everywhere outside the 3 pl. In Indo-Iranian the 2 pl. imperative preserves its full grade alongside newer zero-grade forms.[182]

The *e*-vocalism of the 1 pl. and 2 pl. preterite of the *mi*-conjugation is thus at least in part a direct inheritance from the parent language. **-e-* is clearly inherited in Narten presents (e.g. ***ēd-*** / *ad-*) and in aorist-based *mi*-verbs (e.g. ***tē-*** 'say'), as well as in the 2 pl. imperative generally (***ēzten, tētten, ēšten,*** *šešten*). Non-Narten preterite forms of the type 1 pl. *ešwen, šešwen,* 2 pl. ***ēšten,*** *šešten* are open to more than one historical interpretation: the full grade could in principle go back to a stage of the parent language when the 1 pl. and 2 pl. of the imperfect were still strong,[183] but it could also be analogical. In either case—and this is the important point—the presence of *e*-vocalism in the *mi-* conjugation 1, 2 pl. preterite and 2 pl. imperative had the effect of triggering two important further innovations in pre-Hittite. First, the **-e-* of the 1 pl. and 2 pl. preterite was analogically extended to the 3 pl. Forms like 1 pl. pret. *ešwen, šešwen* and 2 pl. pret. ***ēšten,*** *šešten,* possibly assisted by inherited Narten forms

[181] Cf. Ch. 2 n. 16.

[182] How the secondary endings of the 1, 2 pl. and 1-3 du. might have come to be associated with full grade in the first place is a separate question, and impossible to answer with any certainty. Conceivably the pre-PIE imperfect and aorist indicative and injunctive were influenced by the corresponding forms of the imperative, which retained their root accent and full-grade vocalism for what might loosely be called 'discourse-related' reasons. Compare the *pluti* -lengthening of Ved. *śrauṣaṭ* 'let him hear' (Narten 1964: 260), the unexpected shortening of Lat. *fac, dīc, dūc,* and other 'irregular' phenomena associated with imperatives crosslinguistically.

[183] This would imply that Anatolian split off from the rest of the family before the analogical change of 1, 2 pl. impf. **gʰhén-me, *gʰhén-te* to **gʰhⁱ*-mé, *gʰhn̥-té.* So far as I know, there is no reason why this possibility should not be considered.

of the type 3 pl. *eter,* induced the creation of 3 pl. forms of the type *ešer* and *šešir*. Second, *-ă- was extended as the productive vocalism of the *present* plural to many roots of the structure *(C)eC-*, so that pre-Hittite Narten forms like **edweni, *etsteni, *edanti* were remade to the attested *adweni, az[zaš]teni, adanzi*.[184] The end result was the Old Hittite distribution of -ă- and *-e-*, with the former confined to the present plural and the latter appearing everywhere else.[185] This is also the pattern found—secondarily, as we shall see—in the *ḫi*-conjugation.

§53. Close counterparts of the *ešer* : *ašanzi, šešir* : *šašanzi* pattern occur in a number of different kinds of *ḫi*-verbs. Thus, for example, many Hittite '*i*-presents', a type that will be discussed in Ch. 4, show a contrast between strong vocalism in the preterite plural (e.g. 3 pl. *dair* (=**dai-er*) < **dheh$_1$-i-*) 'they put (pret.)' and zero grade in the present plural (*tianzi* < **dhh$_1$-i-*).[186] A more complicated case, but one of particular interest for our present purposes, is that of the root *ḫi*-verb *dă-* 'take', from PIE **deh$_3$-* 'give' (see paradigm, §2). Since PIE **deh$_3$-* was an 'aoristic' root (cf. Ch. 6 n. 13), only the Hittite preterite, apparently deriving from a kind of *h$_2$e*-conjugation root aorist (see below), can be old (1 sg. pret. *dāḫḫun* < **dāḫḫa* < **dóh$_3$-h$_2$e*; 1 pl. pret. *dāwen* < **déh$_3$-me-*, etc.). The present of *dă-* was back-formed from its preterite—a process that in the singular consisted of adding the *hic et nunc* **-i* to the preterite forms 1 sg. **dāḫḫa* / **dóh$_3$-h$_2$e,* 2 sg. **dātta* / **dóh$_3$-th$_2$e,* and 3 sg. **dā* / **dóh$_3$-e*. The result was the familiar *dāḫḫe* (> *-ḫḫi*), *dātti, dāi*.[187] In the plural, however, neither the attested 1 pl. present *tumēni* nor the 2 pl. present *dattēni* goes back directly to the corresponding preterite form suffixed by **-i* (contrast 1 pl. pret. *dāwen* / **déh$_3$-me,* 2 pl. *dātten* / **déh$_3$-te*). Rather, *tumēni* and *dattēni* both show the replacement of full-grade *dā-*/**deh$_3$-* by the zero-grade root-form **dh$_3$-*, which yielded *dă-* before obstruents and *du-* before **-w-*.[188] The choice of zero grade for the new

[184] The latter development was incomplete; as discussed by Melchert (138), forms of the type 1 pl. *eduwani* and *ekuwani* (MH +), with *-wani* for *-weni,* show the regular phonological treatment of pre-Hitt. root-accented **édweni* and **ég$^{\text{ʰ}}$weni*. Note that the above analysis of the *mi* -conjugation ablaut system implies the possibility that 3 pl. forms of the type *kunanzi* (: *kuenzi* 'slays'), *kuranzi* (: *kuerzi* 'cuts'), etc. go back to immediate preforms **kwănanzi, *kwăranzi,* etc. rather than directly to PIE **g$^{\text{ʰ}}$hn-énti, *k$^{\text{ʰ}}$r-énti*.

[185] A qualification must be made for the verbal noun in *-war,* which, to judge from the later language (*šēšuwar, wēkuwar,* etc.), retained its inherited full grade.

[186] And doubtless just as old, though without early attestation, 1 pl. pret. *daiwen* vs. pres. *tiyaweni*.

[187] *Mutatis mutandis,* the process was exactly comparable to the back-formation of *tēmi, tēši, tēzzi* from *tēn* [*un*], *tēš, tēt* ; cf. §10. Prior to the late extension of -š(< **-s -t*) as the general 3 sg. *ḫi* -conjugation preterite ending in Hittite, the regular ending would almost certainly have been **-e*.

[188] Otherwise Melchert 187, who upholds the above analysis of *tumēni* but phonologizes *dattēni* as /ta:téni/, with unaccented -ā-. It is clearly simpler, however, to assign the two forms to the same ablaut grade, whether or not the -ă- of *dattēni* is regarded as the phonological reflex of **-h$_3$* - in this position.

present plural forms was clearly dictated by the synchronic implicational pattern *full-grade preterite plural* ⇒ *zero-grade present plural,* which was sufficiently well established in the prehistory of Hittite to be extended to verbs that had no inherited present at all.

We can now properly understand the position of *šăkk- / šekk-* and its congeners. As seen in §51, these forms are neither perfects nor *molō*-presents. Rather, they are probably to be explained in the same way as *dă-*, i.e. *as* h_2e*-conjugation aorists that were secondarily provided with back-formed presents.* The status of h_2*e*-conjugation aorists in general will be discussed at length in Chs. 6 and 7. For now it is sufficient to note that if we start from an aorist **sokH-/*sekH-* 'cut > discern' and assume a sufficiently early loss of the distinction between the *mi-* and *ḫi*-conjugation endings in the plural, the pre-Hittite preterite (< aorist) plural **sek(k)wen, *sekten, *sek(k)er* would have become indistinguishable from the corresponding forms of a canonical *mi*-verb (**eswen, *esten, *eser*; **edwen, *etsten, *eder*). And just as root verbs of the *mi*-conjugation made their present plural with the productive zero-grade vowel *-ă-, the verb 'to know' was fitted out with a zero-grade stem *šăkk-* for use in the same paradigmatic positions. The process can be displayed as a proportion:

(pret.) **éswen, *ésten, *éser* : (pres.) **aswéni, *asténi, *asánti* ::

(pret.) **sék(k)wen, *sékten, *sék(k)er* : (pres.) *X,*

where *X* was solved as **sak(k)wéni, *sakténi, *sak(k)ánti.*[189]

As a point of interest, it may be noted that while aorist-derived *ḫi*-verbs like *šăkk- / šekk-* and *dă-* retained the accent on the present plural endings (cf. *āaktēni, tumēni, dattēni*), there are no comparable ending-accented *mi*-conjugation forms of the type **ašwēni / *aštēni, *appwēni / *aptēni,* or **atwēni / *aztēni* in historical Hittite.[190] This state of affairs can only be secondary, a reflection of the fact that at some point following the creation of the back-formed presents *šăkḫi* : **šakwēni, dāḫḫi* : *tumēni,* etc., ablauting *mi*-verbs gave up their accentual mobility. An analogical trigger for the stabilization of the accent in the *mi*-conjugation may have been provided by the innumerable fixed-accent *mi*-verbs in *-ie- / -ya-* and *-šḱe/a-*.

True *molō*-presents—verbs like *mall(a)-*, *kănk-, padd(a)-, išpănt-*, and the other likely candidates surveyed in §50—had no part in any of these events.

[189] Compare the similar, but historically earlier process by which zero grade seems to have replaced *e* -grade in the perfect, but not the pluperfect (§29). Despite the recessive profile of the perfect in Anatolian, the inherited pattern 3 pl. plpf. **memén-ŗs* : 3 pl. perf. **memn-ḗr* may have been one of the factors that led to the introduction of *šăkk* - beside *šekk* -.

[190] The 3 pl. in *-anzi* (< *-*enti* or *-*n̥ti*), which is normally only written with *scriptio plena* when the result of a contraction (e.g. *dānzi* 'they take' < *dă-anzi*), is not diagnostic for these purposes. It is probably safe to assume OH *ášanzi* but *šakkánzi,* with the same pattern as in the 1 pl. and 2 pl.

Unlike *šăkk- / šekk-, dă-*, etc., proper *molō*-presents did nothing to change their inherited acrostatic accentuation pattern; there is no evidence that any *molō*-present created zero-grade, ending-accented forms of the type *šaktḗni, tumḗni*. In conservative cases, such as *išpănt-*, both the *o*-grade and *e*-grade stem variants were preserved in Hittite with only phonological changes (**spond-* > *išpānt-*, **spend-* > *išpant-*).[191] Elsewhere, analogy contributed to the forms as we have them: alternating **māll-* : *măll-* (< **molh₂-* : **melh₂-*) was apparently replaced by invariant *mall(a)-* through simple elimination of the stem in *-ā-*; alternating *kānk-* : **kink-* (< **ḱonk-* : **ḱenk-*) was replaced by *kānk-* : *kănk-* through substitution of analogical *-ă-* for *-i-* (< **-e-*); **pādd-* : **pedd-* was first remade to **pādd-* : **pădd-* along the lines of *kānk-* : *kănk-* and then further reduced to invariant *pădd(a)-*.[192] Whether by chance or design, the combined workings of sound change and analogy had the effect of everywhere eliminating the phonetic root vocalism *-e-* in true *molō*-presents.[193]

§54. The reconstruction proposed here for the *molō*-type, with its corollary of a *h₂e*-conjugation in the parent language, raises a series of further questions at the PIE level. The *h₂e*-conjugation paradigm presented in §47 is incomplete, not only because of its unavoidable vagueness on the form of the 1, 2 pl. (and the entire dual), but also, more seriously, because it fails to show how stems of the type **molh₂-*/**melh₂-* might have distinguished the *hic et nunc* present (i.e. the present proper) from the imperfect / injunctive. Such a distinction presumably existed in the parent language, since it is very likely that the Indo-Europeans, like the Hittites and Proto-Anatolians, had some way of differentiating between 'I grind' and 'I ground / was grinding'.[194] How this contrast was implemented at the formal level is unclear. In the perfect proper, where the 'normal' behaviour of the perfect endings can be read directly from the comparative evidence, the primary : secondary opposition was not marked by the *hic etnunc*

[191] See Melchert 134 ff. for the still not perfectly understood conditions under which PIE **e* became Hittite *a* before sonorant +obstruent clusters. The change of antevocalic **-eRH* - to **-aRR* - is apparently Proto-Anatolian; cf. §47.

[192] This, at any rate, seems by far the likeliest possibility; cf. n. 13. My discussion of ablaut in the *ḫi* -conjugation owes a great deal to Craig Melchert's comments on an earlier version of §§52–3. While gratefully acknowledging my debt to him, I emphasize that responsibility for all errors rests wholly with me.

[193] A lone holdout of phonetic *-e* - is perhaps to be seen in the unique Neo-Hittite 2 pl. impv. *išpirten* (: *išpăr* - 'tread under'; KBo XXI 14 R° 8'), if Melchert (84, 137) is right to see this as the phonological reflex of **spérh₁-ten*.

[194] To be sure, this statement assumes that the augment **e* - was *not* available for making tense distinctions in the parent language. But even if the classical (i.e. Greek and Indo-Iranian) augment was already fully functional in late PIE, there would be no precedent for a verbal category that failed to mark the present: past opposition with some difference in the endings as well.

particle **i,* as in the present active, or by **r,* as in the present middle. Rather, as discussed in §§25 ff., the difference between 'remember(s)' (**memón-h₂e, *-th₂e, *-e*; perfect) and 'remembered' (**memón-ḫ, *-s, *-t*; pluperfect) was expressed by substituting the secondary active endings for the theoretically expected but non-existent 'secondary' perfect endings.[195] Significantly, this pattern seems *not* to have been adopted in *molō-* presents. If the imperfect of 'grind' had been **mólh₂-ḫ, *-s, *-t,* etc., with the active secondary endings, the *ḫi*-conjugation preterite endings 1 sg. *-(ḫ)ḫun* (cf. Pal. *-(ḫ)ḫa,* Luv. *-(ḫ)ḫa,* Lyc. *-χa / -ga*) and 2 sg. *-(t)ta* would be inexplicable. The existence of a PIE **mólh₂-ḫ,* moreover, would very likely have led to the occasional back-formation of presents of the type **mólh₂-mi* in the daughter languages (cf. Skt. *vedmi* 'I know' (beside older *véda*), back-formed from the pluperfect *avedam*); in fact, the absence of such forms from the comparative record is striking.[196] Hittite itself indirectly testifies to the existence of a difference between the preterite of the perfect proper and the preterite of the *molō*-type, inasmuch as the true pluperfect *wewakta* has a different ending (**-t*) from the normal *ḫi*-conjugation 3 sg. preterite in *-š*.[197]

What, then, *was* the difference between the present and the imperfect / injunctive of the *h₂e*-conjugation in PIE? We have very little concrete evidence to go on. In the 1 sg., the contrast **-ḫai* (primary) : **-ḫa* (secondary) is Common Anatolian; there is no reason in principle why this difference might not go back to the parent language, where it would be convenient to operate with primary **-h₂e+i* and secondary **-h₂e*.[198] So too in the 2 sg.: the pre-Hittite contrast **-t(ḫ)ai* (primary) : **-t(ḫ)a* (secondary) invites the hypothesis, *nil obstante,* of a PIE primary **-th₂e+i* contrasting with secondary **-th₂e*. But in the 3 sg. a distinction between primary **-ei* (**-e+i*) and secondary **-e* is much less likely. If PIE had had forms of the type **mólh₂-ei* 'grinds', we would almost certainly have expected to encounter occasional renewals of the type **mólh₂-ei* ⇒ **mólh₂ei-ti* in the non-Anatolian languages, and no such forms are ever found. One alternative possibility, which in the absence of direct comparative data will be taken as the default hypothesis here, is that the parent language retained unrenewed **mólh₂-e* as the *hic et nunc* present, but

[195] Except in the 3 pl., where **-ḛs* was specialized as the *de facto* secondary counterpart to **-ḛr* (§§28–9).

[196] Forms like OLith. *barmi* are only an apparent exception; cf. n. 20 and n. 72 below.

[197] Not to be confused with the retention of **-t* in *wewakta* is the secondary replacement of -š by *-t(a)* elsewhere—e.g. in forms of the type 3 sg. pret. *warašta* (: *warš* -), where the theoretically expected form **warš-š* would have been morphologically opaque. The origin of the ending -š, which was clearly not the general 3 sg. preterite ending of the *ḫi* -conjugation in Proto-Anatolian, will be discussed in detail in Ch. 7.

[198] A PIE 1 sg. in **-h₂ei* [-h_2 ai] would accord nicely, of course, with the analysis of Baltic **-mai* as **-mi* × **-ai*.

remade the *imperfect* to **mólh$_2$-e*[*t*], with the addition of secondary **-t* as in Ved. *á́śaya*[*t*] (cf. §47). The only justification for this particular 'solution', arbitrary though it is, is that it yields a system which accords better than any other with the extremely limited information at our disposal. Being able to operate with a PIE opposition **mólh$_2$e* 'grinds' : **mólh$_1$et* 'ground' (rather than, say, **mólh$_2$ei* : **mólh$_1$e*) would be independently useful in at least one respect: it would furnish an additional motivation for the quasi-regular replacement of **-e* (*h$_2$e*-conjugation) by **-eti* (thematic) in the non-Anatolian languages (cf. *molit, maliþ, melid,* etc.). Setting up a late PIE 3 sg. pres. **mólh$_2$e* and 3 sg. impf. **mólh$_1$et* would require us to assume that primary **-e* was remade to **-ei* in Anatolian under the influence of the 1 sg. and 2 sg., and *not* by adding **i* directly to the secondary ending in PIE. In Hittite proper, of course, **-et* was eventually replaced by *-š*.[199]

As far as the plural is concerned, there is no way to know how the primary : secondary distinction was implemented in the first and second persons. In the 3 pl., however, there is scope for educated guesswork. It is probably significant that Hittite lacks a primary ending **-eri* beside the 3 pl. pret. in *-er*; the position of the expected **-eri* is occupied by the *mi*-conjugation ending *-anzi*. The spread of *-anzi* to the present of the *ḫi*-conjugation, and the associated restriction of the 'correct' *ḫi*-conjugation 3 pl. ending to the preterite, is usually assumed to have been an Anatolian, or even a purely Hittite, development. But it is interesting to note that a similar distribution is found in Tocharian, where the 3 pl. present consistently ends in **-nt(i)* (> A *-ñc,* B *-ṃ*), while the ending *-r*—here, as in Hittite, of *h$_2$e*-conjugation origin—is confined to the 3 pl. preterite (cf. A *prakär,* B *prekar* 'asked', A *casär,* B *tesar* 'put', etc.).[200] Tocharian, like Anatolian, thus points to a distribution pret. **-(é)r(s)* : pres. **-(é)nti* in the 3 pl. There is reason to suspect, therefore, that this opposition was already

[199] See further Ch. 6 n. 15. It is not clear that any historical importance can be attached to occasional Neo-Hittite forms of the type *ma-al-li-e-it* (Oettinger 277). Nor would it be legitimate to draw any firm conclusions about the original form of the *ḫi*-conjugation 3 sg. preterite ending from Palaic or Luvian, since these languages merge the two conjugations in the preterite. It is interesting, however, that both Palaic and Luvian employ a dental ending (Pal. *-t,* Luv. *-(t)ta*) in the 3 sg. alongside a 1 sg. pret.— obviously of *ḫi*-conjugation origin—in *-(ḫ)ḫa.*Also perhaps significant is the fact that in Greek, 'intensive' perfects of the type μέμῡκε, ἄϑωγε, etc. (§23) show a marked affinity for thematic pluperfects in *-ov,* -ες, -ε, etc. alongside or instead of pluperfects of the normal type in -εα, -εας, -ει, (cf. 3 pl. ἐμέμηκον 'bleated', 3 sg. 'called', 3 sg. ἄϑωγε, pl. *-ον* 'ordered'; see Chantraine 1958: 438 f.). It is just possible that these forms were created on the basis of innovated 3 sg. *h$_2$e*-conjugation imperfects **mémāk-et, *gégōn-et, *á́nwg-et,* which replaced the expected pluperfects **mémāk-t, *gégān-t, *á́nōg-t* because the corresponding perfects (**mémāk-e, *gégōn-e, *á́nōg-e*), having eventive rather than stative meaning, were reinterpreted as *h$_2$e*-conjugation presents.

[200] The Tocharian forms, which are often wrongly traced to perfects, are discussed in §§101 ff.

established in the parent language, and that the late PIE 3 pl. *present* of *$molh_2$-/ *$melh_2$- was *$mélh_2$-n̥ti,* contrasting with a preterite / imperfect *$mélh_2$-r̥ (s).*

§55. A more complete and less 'ideal' version of the paradigm in Fig. 3.1 (§47) might therefore be set up as in Fig. 3.3:

FIGURE3.3

	present	imperfect / injunctive
sg. 1	*$mólh_1$-$h_2$ei (?)	*$mólh_2$-h_2e
2	*$mólh_2$-th_2ei (?)	*$mólh_2$-th_2e
3	*$mólh_2$-e	*$mólh_2$-et (??)
pl. 3	*$mélh_2$-n̥ti (?)	*$mélh_2$-r̥ (s)

The details of the forms marked as uncertain in this display are not, of course, essential to our basic argument. What is genuinely important is the fact that the inflection of the perfect and the inflection of the h_2e-conjugation—at least in the marking of the primary : secondary distinction and perhaps in other ways as well—had probably already begun to diverge in the parent language. While the perfect, by virtue of its special meaning, was categorially distinct from the present in late PIE and remained a distinct category in the individual IE languages, stems of the type *$molh_2$-/*$melh_2$- were functionally true presents and were treated as such in the daughter languages. The synchronic status of *molō*-presents *as presents* played a crucial role in their post-IE development. In every branch of the family other than Anatolian, the characteristic h_2e- conjugation inflectional pattern was abandoned in favour of a more 'ordinary' present paradigm, typically of the simple thematic (*bhére/o-) type. Even in Hittite, the process of 'normalizing' the h_2e-conjugation is well underway; fewer than half of the eighteen finite forms of an active *ḫi*-verb are in any way different from their *mi*-conjugation counterparts.

Seen in this context, the spectacle of an obvious new coinage like the hypothetical *$mólh_2$-et* serving as the secondary counterpart to 3 sg. *$mólh_2$-e,* or *$mélh_2$-n̥ti* serving as the primary counterpart to 3 pl. *$mélh_2$-r̥(s),* should not cause surprise, much less alarm. Late PIE, as a living form of speech, must

have had paradigms similar to those in the attested IE languages, where age-old, historically 'regular' forms often rub shoulders, so to speak, with innovations of every description. A lingering belief in the purity of PIE as an *Ursprache* with only 'ideal' paradigms—a protolanguage 'noch unversehrt in seinen theilen' (Schleicher)—has no place in serious comparative linguistics. *molō*-presents in late PIE were a morphological class whose function had evolved more rapidly than their form: they were synchronic actives which historically inflected with the endings of the perfect, and which were therefore chronically liable to formal renovations that appended scraps of active morphology to pre-existing perfect-like material. Nothing in the chapters that follow will depend crucially on the tentative distinctions between the primary and secondary endings proposed in the preceding paragraphs. But we cannot in principle exclude morphological neologisms from our picture of the parent language.

4 The *h₂e*-conjugation: *i*-presents

§56. The '*h₂e*-conjugation theory' introduced in the preceding chapter asserts that the IE parent language had athematic active presents which inflected with the endings *-*h₂e,* *-*th₂e,* *-*e,* 3 pl. *-*(é)rs*—the endings traditionally associated with the IE perfect. We have studied one group of such presents, the *molō*-type, in some detail, paying particular attention to the individual word equations that link Hittite to the non-Anatolian languages. Although several of these comparisons are striking, their overall number is not large. *molō*- presents were clearly a recessive category outside Anatolian, with only a very few widely distributed representatives. Even in Hittite, where there are many primary *ḫi*-verbs of known etymology that could in principle continue such forms, the comparative evidence suggests that some have a different explanation. Verbs like *dă*- 'take', which was briefly discussed in §53, and others like *wăk*- 'bite' and *lăk*- 'bend', may resemble *molō*-presents in purely formal terms, but it is clear on other grounds that PIE **deh₃*- 'give', **u̯ag̑*- 'break', and **legh*- 'lie down' were punctual roots which archaically made not root presents but root aorists. These and similar cases will be discussed in Chs. 6–7.

It is important to realize, however, that the *h₂e*-conjugation theory does not require us to assume that *molō*-presents were the *only* active presents in PIE that inflected with the *h₂e*-series of endings. In fact, one of the great advantages of the *h₂e*-conjugation framework over, for instance, the perfect theory, is that it eliminates the need to assume a link between the *h₂e*-endings and any particular stem type. Since active presents of the familiar kind in *-*mi* were built to a wide variety of stems in PIE—uncharacterized (e.g. *gʷh(e)n*- 'slay', reduplicated (**dhe-dh(e)h₁*- 'put'), sigmatic (**ĝnēh₃-s*- 'recognize'), nasal-infixed (**iu-n(e)-g*- 'yoke'), etc.—we should expect to find different kinds of active presents in *-*h₂e* as well. Indeed, the point can be made more emphatically: if our reconstruction of the *molō*-type as a class of *h₂e*-conjugation root presents is correct, then the *absence* of suffixed, reduplicated, or otherwise characterized *h₂e*-conjugation presents would urgently need to be explained. No such problem in fact arises. Anatolian *ḫi*-verbs are found in a significant number of overtly characterized varieties, all marked by formative elements

associated with present stems in the other IE languages. In this and the following chapter we shall see that the suffixed and reduplicated verbs of the *ḫi*-conjugation are reflexes of precisely the kinds of PIE forms that the h_2e-conjugation theory predicts—formally characterized presents that took the perfect endings.

§57. The most conspicuous group of characterized *ḫi*-verbs, if only because it includes some of the commonest lexical items in the language, is the class with a strong stem in *-ai-* (monophthongized to *-ē-* before *-(ḫ)ḫ-*), a weak stem in *-i-* or *-iya-*, and a 3 sg. present in *-āi*. The standard example is *dāi / tiyanzi* 'put' (Fig. 4.1):[201]

FIGURE4.1

pres. sg.	1 *tēḫḫi (-ḫḫe)*	pl.	1 [*tiyaweni* (NH)]
	2 *daitti*		2 —[a]
	3 *dāi*		3 *ti(y)anzi*
pret. sg.	1 *tēḫḫun*	pl.	1 *daiwen*
	2 *daišta*		2 *daišten*
	3 *daiš* (< da-(i-)iš >)		3 *dāir, dāier*
impv. sg.	2 *dai*	pl.	2 *dāišteni*[b]
	3 —[c]		3 *tiandu*

The participle is attested as *tiyant-* and *tiyānt-*. The middle of this verb, which would have been **tiyări* in the 3 sg., is not attested, its place being taken by the suppletive *kitta(ri)* 'lies'. A slightly different paradigm, with *-i-* for *-ai-* in the preterite plural, is found with *pāi / piyanzi* 'give': 1 pl. pres. *pĭweni,* pret. *piwen,* 2 pl. pres. *pišteni,* impv. *pišten,* 3 pl. pret. *pĭer.* Although Oettinger assigns

[201] The forms given here, which are biased in favour of older spellings, are based on the corresponding table in Oettinger (74–5). I adopt the notational formula '*dāi / tiyanzi* ' from Melchert; in most cases it will be sufficient simply to write '*dai* -'.

dai- and *pai-* to different subclasses in his system (II 3 a *β* and II 3 a α, respectively), the two are in practice so easily confused that it will be convenient to treat them together.

Other verbs of the extended '*dai*-type' include *arai-* 'arise', *ḫalzai-* 'call', *ḫuwai-* 'run', *išḫai-* 'bind', *išpai-* 'become sated', *išḫamai-* 'sing', *mai-* 'grow, prosper', *nai-* 'turn, direct', *parai-* 'blow, fan (a flame)', *parip(a)rai-* 'blow (an instrument)', *piddai-* 'flee', *šai-* 'press, shoot', *tarai-* 'grow tired', and *zai-* 'cross', together with a few more dubious examples.[202] Of these, *nai-* is peculiar in showing the weak stem *nē(ya)-* for expected *ni(ya)-* (3 pl. *nēanzi, neyanzi,* 3 sg. mid. *nē(y)a(ri),* ptcp. *nē(y)ant-*, etc.). A distinct but related class, consisting of verbs like *uppa/i-* 'send' and *mēma/i-* 'speak' (1 sg. *-aḫḫi,* 3 sg. *-ai,* 3 pl. *-i(y)anzi*), will be discussed separately.

§58. The historical origin of the *dai*-type, which goes back to Proto-Anatolian (cf. e.g. CLuv. *ḫaltatti* 'calls' vs. 3 sg. mid. *ḫaltittari,* recalling Hitt. *ḫalzāi, ḫalziya(ri)*), is one of the most difficult problems in Hittite historical grammar. As all investigators have seen, *dai*-verbs fall into two etymological groups—those built to roots containing a diphthong and those built to 'long-vowel' roots, i.e. roots of the structure **(C)CeH-*. To the first group belong with certainty only *nai-* and *arai-*. *nai-* is clearly cognate with Ved. *náyati* 'leads' and goes back to a root **neih$_1$-* or **neih$_3$-*. The Hittite inflection presupposes a paradigm **noiH- / *neiH-* (3 sg. **nóiH-ei* > **nóy-ḗ* > **nóy-ḗ* > *nāi*);[203] the PIE source, as we shall see in §115, was probably not a *molō*-present but a *h$_2$e-* conjugation aorist. For our present purposes, the essential point is that the membership, such as it is, of *nai-* in the *dai*-class is obviously secondary, as shown both by the deviant weak stem *nē(ya)-* and by the existence of a well-developed middle paradigm (3 sg. *nē(y)ari, neyattari,* 3 pl. *neyantari,* 2 sg. impv. (MH) *nešḫut,* etc.). *arai-*, by contrast, is a perfectly 'normal' *dai*-verb. Its closest cognate is Arm. *y-areay* 'I stood up', impv. 2 sg. *ari* < **arr̥ie,* pl. *arik* < **arr̥iete(s),* pointing to a root of the form **HreiH-* and a stem **HriH-e/o-*.[204]

Diphthongal origin has also been claimed, though inconclusively, for *mai-* and *pai-*. *mai-* is sometimes compared with Lat. *mītis* 'soft' and Lith. *mielas* 'dear' under the rubric of Pokorny's **mēi- / *mōi- / *mī-* 'gentle, soft, pleasant'(*IEW* 711 f.).

[202] Oettinger's extensive inventory (464 ff.) further lists *ḫalai* - 'wave' and *wai* - (+ reduplicated *wiwai* -) 'cry'. Neither is morphologically certain, and neither has a usable etymology. *(wi)wai* - is probably onomatopoetic.

[203] So Melchert 177. A development via the intermediate stages **nḗ* '-*ḗ* and **nḗ* '-*i* seems less likely.

[204] So e.g. Gusmani 1968: 48, Jasanoff 1981, and Puhvel, *HED* 126 f. *LIV* (223) lists the root as **h$_1$rei* - or **h$_1$reiH* -. The old idea of a connection with Lat. *orior* 'rise' (favoured e.g. by Oettinger 460, 479, and Klingenschmitt 1982: 283) is not, in my view, any longer tenable. See further §123.

The root, which is otherwise known only from nominal forms, is set up as **meiH-* (with **-h_1-* or **-h_3-*) by Eichner (1973: 59 f.), followed by *LIV* (384). But the semantic gulf between 'grow, ripen' and 'soft, gentle' is not easily bridged, and even if Eichner's **meiH-* is correct, the possibility of an earlier **meH-i-* which gave **meiH-* by laryngeal metathesis (cf. n. 12) cannot be excluded.[205] As for *pai-*, the standard view sees it as a compound of the preverb *pe-* 'away' and a lost simplex **āi, *iyanzi,* supposedly cognate with Toch. A *e-*, B *ai-* 'give' and Gk. ἀΐνυμαι 'take' (so first Petersen 1933: 32). Yet despite its perennial appeal, this etymology is full of difficulties. On the phonological side, the vocalism of the Tocharian and Greek forms seems to demand an initial *a*-colouring laryngeal, but the Hittite forms cannot easily be squared with a PIE root shape **$h_2$ei-*. Melchert's solution (177 and *passim*), is to set up the root as **ai-*, with *a*-vocalism and no laryngeal at all; he finds evidence for the uncompounded root in HLuv. *iyasa-*, Lyc. *ije-* 'buy' (Melchert 1989: 42 ff.). Eichner (1975: 92 f.) writes **$h_1$ei-* or **$h_3$ei-* (3 sg. *pāi* < **pói* + *$h_{1,3}$o̯iei*), apparently giving up on the connection with ἀΐνυμαι altogether. Phonological considerations aside, it may be significant that the other Anatolian languages show only the weak stem **pi-* or **piya-* (cf. Pal. *pīša-*, CLuv. *pīya-*, HLuv. *piya-*, Lyc. *pije-*, *pibije-*, Lyd. *bi(d)-*), with no trace of the stem *pai-* that makes the comparison with Tocharian and Greek attractive for Hittite. Particularly striking is the contrast between HLuv. 3 sg. *ta-i, tà-i* 'steps up', a 'strong' form comparable to Hitt. 3 sg. *dāi, pāi,* etc. (Morpurgo Davies 1987: 211–20; cf. §69 below), and 3 sg. *piyai* 'gives', a form seemingly built on the weak stem and lacking any Hittite equivalent. As far as the non-Hittite Anatolian languages are concerned, the attested forms of this verb point, if anything, to an otherwise unknown root of the form **bh̯ieH-*, with zero grade **bhiH-*.[206] Hitt. 3 sg. *pāi,* under such an interpretation, would represent an analogical replacement of **piyāi.*

The great majority of the *dai*-class verbs whose etymology is known correspond to PIE roots of the form **(C)CeH-*, where *H* most commonly represents **h_1*:

išḫai- < **sh_2eh_1-* or **seh_2-* 'bind'; cf. Ved. *ava-sātṛ́-* 'unbinder', *áva, ví syati* 'unbinds', aor. *asāt.*[207]

[205] Cf. Schrijver 1991: 244, 290, and *EWAai* (sub *mayas* -). Melchert (67–8) takes the related Hitt. ^{LÚ}*māyant* - 'grown man' from **$moh_{1\text{-}}$io* -.

[206] With the choice of **bh* - motivated by the voicing in Lyc. *pibije* - and the Luvian iterative *pipišša* -. A possible cognate would be Toch. B *pito* 'price', which lacks a good etymology of its own.

[207] The more usual reconstruction is **seh_2* -; cf. e.g. Tischler 385 f., Oettinger 461, Puhvel 402 f., and *LIV* 471. But **sh_2eh_1* - (cf. Risch 1975: 253) works just as well, and accounts more easily for the consistent *išḫ* - of the Hittite forms and the reduplication pattern of Luv. *ḫišḫiya* - (< **šḫi-šḫ* -; **seh_2* - would probably have reduplicated as **ši-šḫ* -).

išpai- < **speh*$_1$- or **speh*$_2$- (see §66 for the identity of the laryngeal) 'be sated, prosper'; cf. Ved. *sphātí-* (Br.) 'fattening', *sphāyate* 'grows fat', Lat. *spēs* 'hope', Lith. *spė́ju, spė́ti* 'have time to spare', OCS *spějǫ, spěti* 'be successful', OE *spōwan* < **spō(j)an* 'thrive'.
parai-, *parip(a)rai-* < **preh*$_1$- 'blow, light (a fire)'; cf. Gk. πίμπρημι 'fan, burn', πρήθω 'blow', πρημαίνω 'blow violently', Sl. **prějǫ, prěti* in Pol. *przeć* 'swelter', Russ. *préju, pret'* 'sweat'.[208]
piddai- < **pteh*$_1$- or **pteh*$_2$- (beside **pet-*, **petH-*) 'fly, fall'; Gk. aor. ἔπτην (-ᾱ-), ἔπτατο 'flew away, escaped', perf. πέπτωκε 'is fallen', adj. ἀ᾽πτώς, (Dor.!) ἀπτής 'not falling'.[209]
šai- < **seh*$_1$- 'press; release, shoot' > 'sow'; cf. Lyc. 3 sg. *hadi* 'lets go', Lat. perf. *sēuī* 'I sowed', Lith. *sė́ju, sė́ti,* OCS *sějǫ, sějati,* Go. *saian* < **sē(j)an* 'sow'.
dai- < **dheh*$_1$- 'put, make'; cf. Hitt. *tezzi* 'says', Lyc. *tadi* 'places', Ved. *dádhāti,* Gk. τίθημι, OE *dōn,* Lith. *dė́ti,* OCS *děti* 'id.'; also OCS *dějǫ, dějati* 'lay down'.

No good etymologies are available for *ḫalzai-*, *ḫuwai-*, *išḫamai-*, *tarai-*, and *zai-*.[210]

§59. Since the bulk of the original membership of the *dai*-type consists of verbs built to roots in **-eH-*—*arai-* is the only real exception—it is clear that such roots must serve as our point of departure for an investigation of the type as a whole. A frontal assault on the problem was attempted by Risch (1955), who tried to account for the *-i-* of both the strong stem *dai-* and the weak stem *ti(ya)-* by regular sound change. According to Risch, PIE **dheh*$_1$- and **dhh*$_1$- yielded Hitt. *dai-* and *di-* (*di-*) directly, with excrescence of a palatal vowel or glide from **h*$_1$ in the manner first proposed by Diver (1959: 116 ff.). Similar ideas were favoured in the same period by Puhvel (1960: 55 ff.) and Cowgill (1963: 267).[211] But whatever may have been the appeal of this approach

[208] This, at least, is the standard view. *parip(a)rai* - [priprai-] is apparently a reduplicated form comparable to Luv. *ḫišḫiya* - beside Hitt. *išḫai* -, Lyc. *pibije* - beside *pije* - 'give', and others to be seen below.

[209] Although occasionally doubted on formal grounds, the basic etymology, which goes back to Sturtevant–Hahn (1951: 59), is unexceptionable. No position will be taken here on the vexed question of whether PIE had separate roots with **-h*$_1$ - and **-h*$_2$ -, and if so, whether these specifically meant 'fall' and 'fly', respectively, as claimed, e.g., in *LIV* 429–31 (*contra EWAai* s.v. *pat* -[1]). Note, however, that if we assume a form **peth*$_1$ -, the laryngealless variant **pet* - would be predictable by the *h*$_1$ -loss rule discussed in Ch. 3 n. 37.

[210] Cf. the relevant entries in Puhvel and Tischler. Puhvel's partiality toward a connection between *ḫalzai* - and ON *laða,* Ger. *laden* (63–4) is hard to justify formally. He correctly rejects the supposed derivation of *ḫuwai* - from **h*$_2$*ueh*$_1$ - 'blow' (< *'run'??), but substitutes an inadequately grounded root **h*$_2$*uei* - 'run', which is taken up by the editors of *LIV* (256). Benveniste's comparison (1954: 39 f.) of *išḫamai* - with Gk. *οἰμη* 'song' and Ved. *sáman* - 'chant' is possible but far from compelling.

[211] A laryngeally generated *-i* - is still implicitly accepted in Cowgill 1979 (*passim*).

in the 1950s and 1960s, it can no longer be seriously entertained. As far as we can now tell, the treatment of *h_1 in Anatolian was comparable to that in every other IE language, with loss and compensatory lengthening in tautosyllabic *-*VH*- sequences (cf. Hitt. *tēzzi,* Lyc. *tadi* < *$d\bar{e}di$ < *$dheh_1$-ti*) and simple loss between vowels (cf. Luv. *awīti* 'comes' < *au + *h_1eiti*). No definite instances are known of *h_1 vocalizing in any environment; of the few potential examples where a syllabic reflex is even arguable, the best—and even here it is not very likely—is probably still the ă- of 3 pl. *ašanzi* 'they are' < *h_1s-énti* (cf. §52). The facts relating to the history of *h_1 in Hittite and the other Anatolian languages are summarized by Melchert (65 ff.).

If the *-i-* of the *dai*-type is not a laryngeal reflex, it must go back to an ordinary PIE *-*i*- (~*-i̯-) . This being the case, it is surely significant that five of the six 'long-vowel' roots on the above list underlie a *-ie/o*-present somewhere outside Anatolian—sometimes, as in the case of *seh_1- and *$speH$-, in more than one branch of the family. Likewise interesting is the fact that some of these roots also have *i*-extended byforms of the type that led the Neogrammarians, prior to the discovery of laryngeals, to reconstruct a root-final long diphthong *-ēi- or *-āi-. Here in particular belong

"*$s\bar{e}(i)$-, *$s\hat{e}i$-, *$s\bar{i}$-" 'bind' (i.e. *sh_2eh_1-i-, *sh_2h_1-i- / *sh_2ih_1-);[212] cf. Ved. perf. *siṣyāya,* GAv. *hišāiiā* (< *$sh_2\acute{o}h_1$-i-e*); Ved. *sétu-* 'bond', Lith. *siẽti* 'bind', Lat. *saeta* 'coarse hair, bristle' (< *sh_2eh_1-i-); Gk. ἱμάς 'thong', Hitt. *išḫiman-* 'string', Ved. *ví* (*áva*) *syati* 'unbinds', OE *sīma* 'bond' (< *sh_2h_1-i- / *sh_2ih_1-).

"*$sp(h)\bar{e}(i)$-, *$sp\bar{i}$-" 'be sated' (i.e. *$speH$-i-, *spH-i- / *$spiH$-);[213] cf. Ved. ptcp. *sphītá-*, *sphītí-* 'prosperity' (< *$spiH$-).

"*$s\bar{e}(i)$-, *$s\hat{e}i$-, *$s\bar{i}$-" 'release, sow' (i.e. *seh_1-i-, *sh_1-i- / *sih_1-);[214] cf. Ved. *sā́yaka-* 'missile' (< *seh_1-i-), *sénā,* GAv. *haēnā* 'id.' (< *seh_1-i-*).

Less well motivated is

"*$pt\bar{e}i$-, *pti-" 'fly, fall' (i.e. *$pteH$-i-, *ptH-i- / *$ptiH$-);[215] cf. Gk. ἰ῾θυπτῖων 'straight-flying' (< *$ptiH$-)?

The potential relevance to Hittite of the extra-Hittite forms in *-ie/o- and *-i- has not gone unnoticed. Thus, Eichner (1975: 86) takes Hitt. 3 sg. *išpāi* from a

[212] Cf. *IEW* 891 f. *seh_2 -i -*, *sh_2-i -/*sih_2 -*, of course, would be an alternative rendition in laryngeal terms (so *LIV* 471). Here and below, the second variant of the zero-grade form reflects the regular inner-PIE metathesis of *CHi/uC - to *Ci/uHC - (Mayrhofer 1986: 175).

[213] *IEW* 983, *LIV* 532.

[214] *IEW* 889 ff., *LIV* 469.

[215] *IEW* 826; *LIV* 429 (*$peth_1$ - 'fall'), 431 (*$peth_2$ - 'fly'). Pokorny's evidence for the long diphthong also includes Gk. πταίω 'stumble against, push', which is best kept separate.

3 sg. perfect **(spe)spóh$_1$i̯-e(i),* with secondary *-i̯- from the present **speh$_1$i̯e/o-*. He attributes the *-i-* of 3 pl. *išpiyanzi* to the influence of roots like **meiH-*, which owing to their inherent diphthong (under his analysis) had a 3 sg. in *-āi* (*māi* < **(me)móiH-e(i)*) and a regular 3 pl. in *-iyanzi* (*miyanzi* < **(me) miH-énti*). Oettinger (459 ff.) takes a similar approach, tentatively adding *išḫāi* (< **(se)sóh$_2$i̯-e(i),* with *-i̯- from the present **sh$_2$i̯é-ti*) as a case of the same kind.[216] Typologically comparable accounts are offered by, for example, Puhvel (*HED* 431, 402) and Lindeman (1979), for whom, however, the *-i̯- of *išḫai-* is a root extension. The assumption shared by all these scholars, despite their many differences, is that the *-i-* of the *dai*-type is fundamentally an alien element, to be explained on a case-by-case basis using whatever stray forms in *-i̯e/o- or *-i- happen to be available.

§60. A simpler and more systematic explanation of the *dai*-type presents itself virtually unbidden once the problem is correctly formulated. The members of this class are *ḫi*-verbs. We have learned that at least some *ḫi*-verbs, namely, *mall(a)-*, *kăṅk-*, and the others discussed in ch. 3, go back to PIE *h$_2$e*-conjugation presents whose characteristic reflexes outside Anatolian are thematic presents. Most of the old members of the *dai*-type point to stems which consist, in purely descriptive terms, of an ablauting root of the form **(C)CeH-* and an invariant element *-i-*. Such verbs, as we have seen, are often found beside *i̯e/o*-presents elsewhere in the family; we know, moreover, that *-i̯e/o- is precisely the sequence that would have resulted from the thematization of a stem-final element *-i-*. Finally, we have independent evidence, in the form of the 'long-diphthong' enlargement of the roots **sh$_2$eh$_1$-(i-), *speH-(i-),* and **seh$_1$-(i-),* that the extra-Anatolian *i̯e/o*-presents corresponding to Hitt. *išḫai-, išpai-*, and *šai-* are in fact built to extended roots in *-i-*.

There is only one possible inference to be drawn from these facts, namely, that *the common ancestor of the* dai-*type in Anatolian and the corresponding* ie/o-*presents in the other languages was a class of athematic* i-*presents that inflected according to the* h$_2$e-*conjugation.* In Hittite such *i*-presents were retained in the *ḫi*-conjugation; in the other branches they were thematized via the 3 sg. in *-i̯-e* (and impf. *-i̯-et?), in exactly the same way that **molh$_2$- / *melh$_2$-* was thematized via the 3 sg. **mólh$_2$-e.* Naturally, it is tempting to draw the further conclusion that the *-i- of 'long-diphthongal' roots had its origin

[216] He does not, however, make a direct equation of 3 sg. *išḫāi* with Ved. *siṣāya* (cf. §11), considering them to be parallel but independent creations. The extraordinarily complex scenario presented by Oettinger also assigns major analogical roles to *nai* - and to *arai* -, which he derives from a regular *i̯e/o* -present comparable to Lat. *orior.*

precisely here, in the PIE ancestor of the *dai*-type, and that the stem-formative *-*i*- was subsequently reanalysed as a root-component in individual lexical items and incorporated in later derivations.[217] This is only a hypothesis, but it is a plausible one. It must be noted at once that the '*i*-present' interpretation of traditionally analyzed *ie/o*-presents like Ved. *sphāyate* or OCS *spějǫ* does not mandate such an analysis for *all* apparent presents in *-*ie/o*-. A completely general extension of the *i*-present analysis would obviously be unwarranted, since Hittite has a large and productive class of *mi*-conjugation *ie/o*-presents (*wemiya*- 'find', *lamniya*- 'name', etc.) which clearly correspond to the *ie/o*-presents of other IE traditions.[218] Nor would it be appropriate to set up a PIE *i*-present for every root of the structure **(C)CeH*- that has a *dai*-type paradigm in Hittite or a *ie/o*-present elsewhere. As in any reasonably well-established morphological class, some of the verbs of the *dai*-type must be secondary, drawn to the group by accidental points of resemblance to its core members. In fact, a secondary transfer of this kind seems very likely for *dai*- itself. PIE *$dheh_1$- 'put' is represented by a *ie/o*-present only in Slavic (*děǰǫ*) and Latvian (*dẽju* 'lay (eggs)'); nominal forms pointing to an extended root-form *$dheh_1$-*i*- are virtually non-existent. Even within Anatolian, Hitt. *dai*- is isolated: the Luvian languages and Lydian have only **duwa*- for the old *ḫi*-verb (cf. CLuv. *duwa*-, HLuv. *tu(wa)*-, Lyc. *tuwe*-, Lyd. *-cu(we)-*), which is commonly said to be based on the 1 pl. **duwéni* of a paradigm similar to that of Hitt. *dǎ*- 'take'.[219] It would be perfectly consistent with the facts we know if, parallel to the aorist-based *dāi* 'takes' < *$dóh_3$-ei* (§53), Hittite had inherited an aorist-based 3 sg. *dāi* 'puts' < *$dhóh_1$-ei,* which was later reinterpreted as the 3 sg. of an *i*-present in order to prevent a complete merger of *dǎ*- 'take' and **dǎ*- 'put'.[220]

§61. If PIE had a class of *i*-presents, what was their ablaut pattern? The answer to this question is less obvious than in the case of the *molō*-type. A simple juxtaposition of the *dāi* : *tiyanzi* paradigm in Hittite with its counterparts elsewhere—the full- and zero-grade *ie/o*-presents represented, for example,

[217] Typologically, of course, the process of reinterpreting all or part of a present stem as a new 'root' is well known; cf. Ved. *pṛcch* - 'ask' < **pṛ(k)-ske/o* -, or the numerous Tocharian roots in *-sk* -.

[218] And, of course, Hittite also has fully thematic, *mi* -conjugation counterparts of the PIE present types in *-*e/o* - (> 3 sg. *-ezzi*) and *-*eh$_2$ie/o* - (*-*āie/o* -' > 3 sg. *-āizzi*). On the general problem of delineating the boundary between the *i* -class and the *ie/o* -class see further §70.

[219] As Melchert points out to me, however (p.c.), the details of how the supposed extraction of **duwa* - from **duwéni* would have proceeded are extremely hard to imagine. The Luvian forms are discussed by Morpurgo Davies (1987: 207 ff.).

[220] It will nevertheless be convenient to continue speaking of the '*dai* -type' and to operate with formulas of the type *$dheh_1$-*i* -, *$dhoh_1$-*i* -, etc. As will be seen immediately below, a genuinely old *i* -present was formed by the homophonous root *$dheh_1$ - 'suck'.

by Ved. *sphāyate* and *syáti*—reveals an important point of contact between the *-*i*- of the *dai*-type and another familiar PIE stem-formative, the *-*s*- of the *s*-aorist. The *s*-aorist, in its classic form, was originally characterized by *$\bar{e}$: *$\check{e}$ (Narten) apophony of the root (cf. e.g. *$\mu\tilde{e}\hat{g}h$-s- / *$\mu\check{e}\hat{g}h$-s- (: *$\mu e\hat{g}h$- 'convey')); later, at least in Indo-Iranian, a zero-grade weak stem (type Ved. 3 pl. mid. *ayukṣata* 'yoked') was added as a third variant.[221] At no point, however, was there ever a full grade of the element *-*s*- itself, which was from the outset an *élargissement* incapable of ablaut. The *-*i*- of *dai*-presents was evidently such a morpheme as well. Neither Hittite nor any other IE language furnishes unambiguous evidence for present stems or extended root complexes of the form *(C)CH-ei*- or *(C)CH-oi*-, with zero grade of the root proper and full grade of the *i*-element. The apophonic alternation that underlies Hitt. *dāi* : *tiyanzi* must have taken place entirely within the root syllable; the *-*i*- was a mere pendant to the root proper. See further below.

Four possible ablaut patterns are thus theoretically available for the *dai*- type: (1) *$dh\acute{\bar{e}}h_1$-i- / *$dh\acute{e}h_1$-i-, as in Narten presents; (2) *$dhóh_1$-i- / *$dhéh_1$-i-, as in *molō*-presents; (3) *$dhéh_1$-i- / *dhh_1-i-´, as in athematic presents of the hysterokinetic 'normal' type; and (4) *$dhóh_1$-i- / *dhh_1-i-´, as in the perfect. Hittite itself offers rather meagre evidence for a choice. Phonologically, the 3 sg. *dāi* could equally well continue *$dhéh_1$-i-ei, *$dhóh_1$-i-ei, or *$dh\acute{\bar{e}}h_1$-i-ei, which before the loss of *-i- and contraction would have given *$d\bar{a}$-y-ẹ, *dā-y-ẹ, and *$d\bar{e}$-y-ẹ, respectively (cf. Melchert 177). Elsewhere in the singular, the anteconsonantal stem *dai*- is conspicuously written without *scriptio plena* in Old Hittite (cf. 2 sg. *daitti,* pret. *daišta,* etc.), pointing to a pre-Hittite 'short' diphthong *-*ai*-; in principle, this diphthong could go back to earlier *-oh_1-i(-C)- or *-eh_1-i(-C)-, though probably not to *-$\bar{e}h_1$-i(-C)-.[222] In the plural, a zero grade *dhh_1-i- is presupposed by the weak stem *ti*[*ya*]-. It cannot be taken for granted, however, that this vocalism is original. The apophonic contrast between 1 pl. pres. *tiyaweni* (weak) and 1 pl. pret. *daiwen* (strong) is inseparable from that seen in present : preterite pairs of the type 1 pl. *tum$\bar{e}$ni* : *dāwen* and 3 pl. *ašanzi* : *ešir*; it is thus entirely possible that the original weak stem was *dai*- (< *$dheh_1$-i-) rather than *ti*[*ya*]- (< *dhh_1-i-), and that the zero-grade stem form was created within Anatolian as an analogical 'hyperweak' alternant similar e.g. to *šăkk*- beside *šekk*- or *ăd*- beside *$\bar{e}$d*- (cf. §53). The apophonic prehistory of the Hittite forms is thus multiply ambiguous. The immediate

[221] The secondary character of the zero grade was shown by Narten (1964: 24 ff.).

[222] See Kimball 1999: 230 ff. on the secondary diphthongs that resulted from sequences of the type *-*VHi* - and *-*VHu* - in Hittite. There is in fact precious little evidence for these sequences outside the forms under discussion.

phonological precursor of the strong stem was probably **dhéh$_1$-i-* or **dhóh$_1$-i-* rather than **dhḗh$_1$-i-*; but both **dhéh$_1$-i-* (corresponding to strong **dhóh$_1$-i-*) and **dhh$_1$-i-*[1] (corresponding to strong **dhóh$_1$-i-* or **dhéh$_1$-i-*) remain theoretically viable candidates for the weak stem.

§62. To decide between the possible paradigms 3 sg. **dhóh$_1$-i̯-e* : 3 pl. **dhéh$_1$-i̯-n̥ti* (or **dhh$_1$-i̯-énti*) and 3 sg. **dhéh$_1$-i̯-e* : 3 pl. **dhh$_1$-i̯-énti,*[223] we must turn to the comparative evidence. Since our emerging theory of *i*-presents envisages a common origin for the *dai*-presents of Hittite and the corresponding presents of structure **(C)C(V)H-i̯e/o-* in the non-Anatolian languages, examination of the latter forms ought to yield useful information about the apophonic properties of the parent category. The potential evidence for *i*-presents outside Anatolian is not, of course, limited to roots which appear in Hittite. *Any i̯e/o*-presents of the requisite formal type are of interest, especially those correspond-ing to 'long-diphthongal' roots.

An instructive place to begin is with the root *dheh$_1$-* 'suck', which happens to be homophonous with *dheh$_1$-* 'put', but presents a completely different morphological profile. The simple root is adequately well attested in Ved. aor. *adhāt* (AV) 'sucked', inf. *dhā́tave,* Gk. θῆλυς 'female', Lat. *fēmina* 'woman', Latv. *dêls* 'son', and other such forms. But **dheh$_1$-* 'suck' is more commonly found in association with an *i*-enlargement—a fact which accounts for its listing as '**dhē(i)-*', and not '**dhē-*', by Pokorny (241 f.). Representative full-grade forms showing the *i*-extended root include Ved. *dhenú-* 'giving milk; cow', Lith. *dienì* 'pregnant (of cows)' (< **dheh$_1$-i-*), and Ved. *dhā́yas-* 'act of sucking', *dhāyú-* 'thirsty' (< **dheh$_1$-i̯-*). The expected zero grade **dhh$_1$-i-* is probably to be seen in MIr. *del* 'teat' and OE *delu* 'nipple'. More typically, however, the zero grade appears in the metathesized shape **dhih$_1$-*, which underlies e.g. Ved. *dhītá-* 'sucked', Lat. *fīlius* 'son', OIr. *dīnu* 'lamb', and Latv. *dīle* 'calf', as well as the nasal present OIr. *denaid* 'sucks' (< **dĭnati,* as if < **dhi-n(é)-h$_1$-*). A secondary full grade (*o*-grade) **dhoih$_1$-*, built to the metathesized zero grade **dhih$_1$-*, probably lies at the root of Go. *daddjan* 'suckle' (**daijijan* < **dhoih$_1$-i̯e/o-*; cf. Jasanoff 1978*c*: 85) and possibly also of OCS *do(j)iti* 'id.' Interestingly, *i*-extended reflexes of **dheh$_1$-* 'suck' are also found in Anatolian, notably in Hitt. *titti(šḫe/a)-* 'suckle' (< **dhi-dhh$_1$-i-*; cf. §54 with n. 36), Luv. *titaim(m)a/i-* 'nurturing' (cf. Melchert 1993: 228), and above all Lyc. *tideimi* 'son'.[224] These forms

[223] Pursuant to the argument in §§54–5, I adopt the convention that the h_2e -conjugation 3 pl. present ended in **-(é)nti* in late PIE, and that **-ḗr, *-ḛr,* and **-ḛrs* were exclusively secondary (and perfect) endings.

[224] *Pace* Melchert (318 f.), I find it difficult to believe that this form is based on a *i̯e/o* -denominative to **tide/i* - 'teat', with no direct connection to the reduplicated *i* -present found in Hittite.

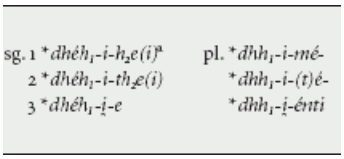
appear to rest on a reduplicated—presumably somehow expressive—verbal stem **diddai-* / **diddi-*, standing in the same relation to a lost simplex **dai-* / **di-* 'suck' as Luv. *ḫiššḫiya-* to Hitt. *išḫai-* 'bind' and other such forms (cf. n. 8).

Like the majority of 'long-diphthongal' roots, **dheh$_1$-i-* forms a *ie/o*-present outside Anatolian. This has a clear *e*-grade in Latv. *dẽju* 'suck' and OHG *tāen* (< Gmc. **dē(j)an*) 'suckle', but a zero grade in OSw. *día* 'suck' and MHG *tīen* 'suckle' (< **dijan*). Arm. *diem* 'suck', which may go back to either **dhēie/o-* or **dhiie/o-*, is ambiguous. The absence of *o*-grade forms in these branches is notable. More problematic is Ved. *dhā́yati* 'sucks', with a short root vowel that has been variously interpreted. No confidence can be placed in the often-quoted reconstruction **dhh$_1$-éie/o-* (so e.g. *LIV*^{2} 120), supposedly representing a zero-grade iterative in **-éie/o-* of the type seen in Ved. *iṣā́ya-* (=GAv. *išaiia-*) 'impel, strive', *rucā́ya-* 'shine', and *turā́ya-* 'press forward, overcome'. Zero-grade presents of this kind are mostly inner-Indo-Iranian creations to roots of the form *(C)CeRC-*, with a characteristic distribution pattern (only the present participle in *-ā́yant-* and 3 pl. injunctive in *-ā́yanta* are common) that differs markedly from that of *dhā́ya-*.[225] Moreover, even if the preform **dhh$_1$-éie/o-* were inherently unobjectionable, it would be difficult to accept an analysis of *dhā́yati* that dismissed its resemblance to Baltic and Germanic **dhēie/o-* as mere coincidence. The problem is rather to unite *dhā́yati* and the other forms under a single account. In practical terms, this means finding an explanation for why the **-ā-* of the expected **dhā́yati* (unlike the *-ā-* of e.g. *sphāyate*) was apparently shortened to -ă- in Indo-Iranian.

§63. A new and better explanation for the short vowel of *dhā́yati* follows from the hypothesis that **dheh$_1$-* 'suck' originally made a *h$_2$e*-conjugation *i*-present. Let us assume, taking the *e-* and zero-grade forms cited above (Gmc. **dē(j)an, *dijan,* etc.) at face value, that the present of **dheh$_1$-* had a strong stem **dheh$_1$-i-* (*-i-) and a weak stem **dhh$_1$-i-* (*-i-), paradigmatically arranged as in Fig. 4.2 below. The 3 sg. in this paradigm would have yielded Indo-Iranian **dhā́ia*[*ti*]; the 3 pl. would have given **dh(i)iā́nti,* from which it might have been possible to back-form a 3 sg. **dh(i)iā́ti*. Outside the third person, the zero-grade stem of the 1 pl. and (probably) the 2 pl. would regularly have been metathesized to **dhih$_1$-*; the resulting IIr. **dhī-* could theoretically have engendered a thematic present **dhīiā́ti*. None of these possibilities was exploited.

[225] Most of the roots that make zero-grade presents in *-ā́ya -* are also associated with zero-grade the-matic (*tudáti*) presents or thematic aorists, suggesting a segmentation *iṣá-ya-, turá-ya -*, etc.; cf. Jasanoff 1983: 73 f. and §74 below. Probably older, but unlikely to have been a prototype for *dhā́ya -*, is the stative *chadā́ya -* 'shine', with a fairly wide range of forms and a well-established Iranian counterpart in YAv . *saδaiieiti* and OP *θadaya -*.

FIGURE4.2



The basis for the creation of *dhéyati* seems rather to have been the 1 sg. **dhéh$_1$-i-h$_2$e*. The sequence **-eH-i-He* had a special treatment in PIE, the clearest evidence for which can be seen in the form of the Vedic instrumental singular of ā-stem nouns (e.g. *dhárayā* (: *dhárā* 'stream'), *jihvéyā* (: *jihvá́* 'tongue'), etc.). The ending *-ayā* continues underlying **-eh$_2$-ih$_2$-eh$_1$,* i.e. **-eh$_2$-* ('*-ā-*') followed by the *devī*-stem instrumental in **-ih$_2$-eh$_1$* (cf. *pátniā* (: *pátnī* 'wife'), *śáciā* (: *śácī* 'might'), etc.).[226] The fact that **-eh$_2$-ih$_2$-eh$_1$* yielded *-ăyā* rather than **-eyā* (< **-ai̯(i)a*) in these forms points to an early loss of the first **-h$_2$-* in the sequence, presumably by dissimilation. That this was an Indo-European, rather than purely Indo-Iranian development is shown by the parallel Slavic ā-stem instrumental in *-ojǫ* (e).g. *tojǫ žǝnojǫ* 'with that wife'), historically going back to a preform in **-ăi̯ō* (i.e. **-eh$_2$-ih$_2$-oh$_1$*) with secondarily added (and subsequently apocopated) **-mi* from the *i-*, *u-*, and consonant stems.[227] The inner-PIE process can be formulated schematically as **-AHIHA- > *-AIHA-*, where *A* = any vowel, *H* = any laryngeal, and *I* = either of the high vowels **i* or **u*. The effect of the '**-AHIHA-* rule' on the paradigm of 'suck' would have been to replace the etymological 1 sg. **dhéh$_1$-i-h$_2$e(i)* by disyllabic **dhéih$_2$e(i),* a morphologically ambiguous output which could in principle have been parsed either as **dhei-* + **-h$_2$e(i)* or as **dheih$_1$-* + **-h$_2$e(i)*. The latter analysis would have been facilitated by the fact that the cluster **-h$_1$h$_2$-* was simplified to a single laryngeal (**-h$_2$-*?) in PIE (cf. §40); positive support would have come from the metath- esized zero grade **dhih$_1$-*, which appeared in the 1 pl. and other anteconsonantal weak forms. Under either synchronic reinterpretation—**dhéih$_1$-h$_2$e(i)* or **dhéi-h$_2$e(i)*—the result would have been the emergence of a 1 sg. **dhi̯ia(i)* (⇒ **dhi̯iā*[*mi*]) in Indo-Iranian. From the 1 sg., the stem form **dhéi(h$_1$)-* / **dhi̯-* was extended to the 3 sg., where it replaced older **dhéh$_1$i̯-* / **dhi̯-*.[228]

[226] This analysis of the instrumentals in *-ayā* and *-iā* was pointed out to me many years ago by Jochem Schindler.

[227] The apocope is independently motivated in Slavic by the 1 sg. thematic ending *-ǫ* < **-ō* + *-mi*.

[228] The role of the second person cannot be discounted either; it is not inconceivable that the '**-AHIHA* - rule' also applied to the sequence **-eh$_1$-i-th$_2$e* in the 2 sg., producing an intermediate preform **dhéi-th$_2$e(i)* /**dhéitha(i)* beside 1 sg. **dhéih$_2$e* /**dhi̯ia*. Note that while *dhéyati* itself could simply be taken from an analogically metathesized **dhéih$_1$eti* without appeal to the **-AHIHA* - rule (cf. Go. *daddjan* < **dhoih$_1$* -), the rule is needed for forms like Ved. *vyáyati* (§65).

The assumption of a paradigm **dhéh$_1$-i- / *dhh$_1$-i-´* thus provides the simplest explanation for the varied presents of 'suck' around the IE family. Only the hypothesis of an ablauting *ḫi*-verb can account for the vocalism of Ved. *dhā́ya-* and the inflection of the unattested but inferable Anatolian **dai- / *di(ya)-*; only an inherited **e* : *zero* ablaut pattern, as opposed to **o* : **e* or **o* : *zero,* can account for the appearance of *-ē-* and *zero* as the root vocalism of the corresponding verbs in Germanic (OHG *tāen,* OSw. *día*) and Baltic (Latv. *dêju*), despite the well-marked tendency of Germanic and Balto-Slavic to generalize the *o*-grade alternant in *molō*-presents. As we shall see from a wider survey of the comparative evidence, the facts in the case of **dheh$_1$-* are typical: the lack of *o*-grade reflexes in *i*-presents is a recurrent feature.

§64. The forms taken by the continuants of *i*-presents in the IE daughter languages are quite varied. For purposes of a brief overview, it will be convenient to organize our discussion around the facts of Vedic Sanskrit, where the material is both relatively clear and relatively abundant.

The apparent shortening of *-ā-* to -ă- in *dhā́yati* is not isolated. The root *vyā-, vī-* 'envelop' makes a present *vyā́yati,* which forms a word equation with Lat. *uieō, -ēre,* ptcp. *uiētus* 'weave together'. The root is thus **u̯ieh$_1$-*, evidently the state II variant[229] of **u̯eih$_1$-* 'wind, twist' (cf. Lith. *vejù, výti* 'wind', Go. *waddjus* 'wall', etc.). Contrary to the standard view (represented, e.g., by *LIV* 610), neither the Vedic nor the Latin verb can go back to a zero-grade iterative **u̯ih$_1$-éi̯e/o-*, which would have given a trisyllabic stem **vi(y)ā́ya-* in Vedic and would probably have yielded a participle **ūtus* < **u̯i(i)etos* in Latin.[230] The starting point must rather have been an *i*-present **u̯ieh$_1$-i- / *u̯ih$_1$-i-*, which developed to pre-Lat. **u̯iēi̯eti* via the 3 sg. **u̯iéh$_1$-i-e,* and to IIr. **u̯iā́i̯ati* via the analogical effects of the **-AHIHA-* rule. Note that here and more generally, the enlargement **-i-* appears to have had the same effect on the vocalization of the preceding root as the parallel enlargement **-s-*, calling forth an otherwise rare or unattested state II (cf. Go. *wahsan* 'grow' beside *aukan* 'increase' (see §49, with n. 28), Ved. *s*-aorist *asrāk* 'released' beside aor. pass. *asarji,* etc.). A similar, though less transparent,

[229] I use the terms 'state I' and 'state II' in the sense of Benveniste 1935: 147–73.

[230] Latin verbs in *-eō* < **-ei̯e/o -* make participles in *-itus* **-eto -*; cf. **mon -ei̯e/o -* (> *moneō* 'warn') : **mon-eto -* (> *monitus*), **noḱ-éi̯e/o -* (> *noceō* 'harm') : **noḱ-eto -* (> *nocitus*), etc. These forms are analogical, created according to the proportion pres. **kap-i̯e/o -* (> *capiō* 'take') : ptcp. **kap-to -* (> *captus*) :: pres. **mon-ei̯e/o -* : ptcp. *X,* where *X* was solved as **mon-eto -*. By the same token, presents **-ēi̯e/o -* and **-āi̯e/o -* were provided with participles in *-ētus* and *-ātus,* respectively; cf. *-pleō* (< **plēi̯e/o -*) 'fill' : *-plētus, flō* (< **bhlāi̯e/o -*) 'blow' : *flātus,* etc. *uiētus* is a form of the latter type, clearly pointing to a present in **-ēi̯e/o -*.

case is that of Ved. *hváyati* 'calls' (= GAv. *zbaiia-*), from a root whose full grade normally appears as **ĝheuH-* (cf. Ved. *hávate,* YAv. *zauua-*, OCS *zovǫ*). Here too the preform was an *i*-present (**ĝhu̯eH-i-* / **ĝhuH-i-*), based on the state II root that we find independently attested in YAv. *zbātar-* 'caller' (= Epic Skt. *hvātṛ-*). As in the case of *vyáyati,* a zero-grade iterative is phonologically out of the question: PIE **ĝhuH-éie/o-* would have yielded IIr. **źhu(u̯)áia-*, which would have given Ved. **hu(v)áyati*. To be sure, the trisyllabic scansion of GAv. *zbaiia-* (= *zu(u̯)a̯ia-*; cf. Kellens–Pirart 1988: 123, 162, 174, 183) has been taken to speak against a preform with initial **ĝhu̯-*. But the spelling with *zb-* shows that the Avestan syllabification is almost certainly not an inherited feature, but a secondary import from the parallel Indo-Iranian stem **źhu(u̯)á-* (< **ĝhuH-é/ó-*) seen in Ved. 1 sg. *huvé,* 1 pl. opt. *huvéma,* and similar forms. The proper Vedic counterpart of GAv. trisyllabic 1 sg. *zbaiiā* would have been a hybrid form **huváyāmi,* blended from *huvé* and the inherited 1 sg. *hváyāmi*.[231]

Two Vedic presents of the *dháyati*-type have cognates in Greek. *kṣáyati* 'rules over, controls' (= GAv. *xšaiia-*, OP *xšaya-*) is traditionally compared with Gk. κτάομαι (Ion. κτέομαι) 'obtain', but the details of the equation remain problematic. Against the background of *dháyati, vyáyati,* and *hváyati,* we can now set up the root as **tkeh₁-* (**kp̄ē-*'; cf. Gk. perf. mid. κέκτημαι 'I possess', κτῆμα 'possession'), and the present as **tkeh₁-i-* / **tkh₁-i-*.[232] Indo-Iranian treated this stem in the usual way, extracting a quasi-root **tkei(h₁)-* from the 1 sg. and making it the basis of a thematic present **kšạia-*.[233] Interestingly, the Greek development seems to have been the same. The form κτέομαι points to a stem **kteih₁-e/o-* or **kteḭ-e/o-*, with the *-ĕ- of the 1 sg., generated by the *-*AHIHA*- rule, substituted for the *-ē- of the inherited 3 sg. **ktḗi-e(i)* < **tkéh₁i̯-e*. The 'short-vowel' treatment of the *i*-present paradigm is a feature proper to Greek and Indo-Iranian; it probably reflects a common innovation of the two branches.[234] The other Vedic : Greek pair to show *dháyati*-type shortening

[231] In fact, the Rigveda offers two examples of the secondary scansion *hu(v)áya* -, based on the stem *huvá* -, alongside about forty of *hváya* -. In both cases the form in question is the 1 pl. *h(u)vāmasi,* found in neighbouring hymns of the fifth book (v. 26. 1, v. 33. 4).

[232] The choice of **h₁* is correct; Att. κτάομαι owes its *-a* - to the influence of the parallel πάομαι 'id.' Although doubts have sometimes been expressed about the connection between the Indo-Iranian and Greek forms, there is no good reason to separate them (cf. *EWAia* s.v. *kṣạy* -, where the alternative comparison of *kṣáyati* with YAv. *aibii-āxšaiia* - 'oversee' is rejected). I am grateful to Alan Nussbaum for help with the Greek dialect forms.

[233] From which was in turn extracted the 'root' **kša* -, as in Ved. *kṣatrá* - and Av. *xšaϑra* - 'rule'.

[234] It is much less likely that Greek would have extracted a zero-grade *i̯e/o* -present **tkh₁i̯e/o* - (**kpə̄i̯e/o* -), with non-phonological vocalization of the laryngeal (see below), from the present **tkeh₁-i* -/**tkh₁-i* -. The possibility of an iterative **tkh₁-éie/o* -, morphologically improbable but phonologically thinkable for Indo-Iranian, would be utterly without precedent in Greek.

of the first syllable is Ved. *dáyate* 'distributes, shares' : Gk. δαίομαι 'distribute'. The underlying root is *deh_2- 'cut, divide' (cf. Ved., Av. *dā-* 'cut'), characteristically listed by Pokorny (175 f.) as *dā(i)- : *dô(i)- : *dĭ-. Ved. *dáyate* points to a stem *deh_2-*i-* / *dh_2-*i-*, which underwent the usual evolution to *$dai(h_2)$- and *dā̱ia- in Indo-Iranian. Corresponding to the Indo-Iranian treatment, Greek ought to have developed a present *δαjε/ο-, which would eventually have given *δἀομαι by regular loss of Common Greek *-*j*-. The root *deh_2-(*i*-), however, was one of the 'long-diphthongal' roots in which the *i*-element of the original present was early extended to non-presential—and even to non-verbal—forms. In Greek these include, *inter alia,* the future δαίσω, the related verb δαίνυμι 'give a feast', and the nouns δαίς (gen. -τός) 'feast' and (Cret.) δαισις 'apportionment', all showing the analogically generalized full grade δαι- < *deh_2-*i*-. Influenced by the general spread of δαι-, the present *δαjε/ο- was remade to *δαιjε/ο-, whence δαίε/ο- by normal sound change.[235]

§65. The PIE root complex *deh_2-(*i*-) further underlies the rare Vedic present *dyáti* (AV) 'divides' (: GAv. 1 sg. subj. *diiāt*? Cf. Kellens 1984: 120 f.). The stem *dyá-*, representing pre-IIr. *dh_2(*i*̯)*ié/ó-*, is one of a tightly knit group of zero-grade *ya*-presents built to roots in (synchronic) *-ā-*; the others are *syá-* (*siá-*) 'bind' (: *sā-*; cf. YAv. *hiia-* 'id.'), *dyá-* 'bind' (: *dā-* (< *deh_1-*); cf. GAv. *diia-*), *chyá-* (AV) 'cut up' (: *chā-*; cf. GAv. *siia-*), and *śyá-* (*śiá-*) 'sharpen' (: *śā-*). The interpretation of these forms is somewhat difficult. In purely mechanical terms all of them can be explained as thematized *i*-presents based on the weak stem; there is no reason, in principle, why a 3 sg. of the type *d(i)i̯áti could not have been abstracted from an inherited 3 pl. *d(i)i̯ánti (< *dh_2-(i)i̯-énti*). Yet there are good reasons to doubt this analysis. By far the best attested member of the group is *s(i)yá-*, with fifteen finite occurrences in the Rigveda. All of these are with a preverb, and all but two (*áva syati* RV x. 61. 20, *ví syanti* i. 85. 5) are imperatives (2 sg. *ví sia,* mid. *ví siasva,* 2 pl. mid. *ví siadhvam,* etc.). (YAv. *hiia-* occurs without a preverb at Yt. 8. 55 (3 pl. subj. *hiiąn*).) *dyá-* 'bind' is found only once in the Rigveda, where it is accompanied by the preverb *ā́* (2 sg. impf. *ā́ ádyas* II 13. 9); the corresponding GAv. *diia-* 'bind', likewise a hapax, appears with the preverb *nī* in 3 sg. mid. impv. *nī.diiātąm* (y. 48. 7).[236] The same Gathic passage that contains *nī. diiātąm* also contains the unique 2 pl. mid. impv.

[235] So already Brugmann, *Gr.* ii/1. 1063. To the family of Ved. *dhā́yati, vyā́yati, hvā́yati,* and *dā́yate* can also be added Ved. *śʰyā́yati* 'swells' (: *śū-, śʰyā* -; PIE *$k̑euH$ -/*$k̑u̯eH$ -). The root further appears in Gk. κυέω and κύω 'be pregnant', of which κθέω is the older form. This, however, has nothing to do with the *i* -present *śʰyā́yati,* but is a 'Caland ē-stative' (< *$k̑uH$-eh_1 -) of the same type as ταρβέω 'be terrified', θαμβέω 'be amazed', and ῥῑγέω 'shudder' (cf. Watkins 1971: 88 ff.).

[236] For *diiatąm* ; cf. Humbach 1959: 25 f.

paitī.siiōdūm, corresponding to the post-Rigvedic stem *chyá-*. The Rigveda has a single instance of 3 sg. inj. *sám śiat* (i. 130. 4).

The distinctive distributional properties of these forms—their affinity for preverbs, their avoidance of the present indicative, and their predilection for the imperative—are all features found separately or together in a significant number of class VI (*tudáti*) presents. Thus, the present *sr̥já-* 'release', which normally takes a preverb, is found over a hundred times in the Rigveda, but only twelve times in the present indicative; the imperative is more than three times as common. More than half of the forty-five occurrences of *viśá-* 'enter', which is always accompanied by a preverb, are imperatives. The root *tar-* 'cross over, overcome; bring across' makes presents of both class VI (*tiráti*) and class I (*tárati*); the former occurs more than sixty times, always with a preverb; the latter shows a preverb in only seven out of more than forty occurrences. What all these stems have in common—*syá-*, *dyá-* (both meanings), and *chyá-* as well as *sr̥já-, viśá-*, and *irá*—is terminative, or telic, *Aktionsart*. It is this property that at least partly accounts for their relative infrequency in the *hic et nunc* present tense, and that explains their preference for contexts in which a perfective or punctual sense is typologically unmarked. It is no accident that *tudáti*-presents are identical in stem formation with thematic aorists of the type *ávidat* 'found', *áruhat* 'climbed', etc. Whether or not the two categories are ultimately identical, as often thought, it is almost inconceivable that the zero-grade root of the *syáti*-type and the zero-grade root of the parallel *tudáti*-class are unconnected. The formal relationship of **dh*$_2$*(i)i̯-é/ó-* 'cut up, divide' (*dyáti*) to **deh*$_2$*-i-* / **dh*$_2$*-i-* 'distribute' (*dáyate,* δαίομαι) strongly recalls that of zero-grade **tr̥h*$_2$*-é/ó-* (*tiráti*) to full-grade **térh*$_2$*-e/o-* (*tárati*). The rationale for the existence of such pairs, which evoke the 'internal derivation' processes characteristic of the PIE nominal system (see ch. 6 n. 50), is obscure and cannot be elucidated here. But just as *tárati* and *tiráti* are unlikely, in view of the functional difference between them, to go back to singular vs. plural ablaut variants within a single paradigm, it is doubtful whether *syáti, dyáti,* etc. can be explained as back-formations from the regular 'weak' *i*-present forms **syánti* (< **sh*$_2$*h*$_1$*-(i)i̯-énti*), **dyánti* (< **dh*$_2$*-(i)i̯-énti*), etc. The *syáti*-type is best regarded, at least provisionally, as a formation confined to Indo-Iranian among the non-Anatolian languages, derivationally based on the *i*-presents discussed above, but paradigmatically and functionally distinct from them.[237]

[237] Possible *syáti*-presents in Anatolian include Hitt. *tiya-* 'step' (*mi*-conj.) beside the *i*-present HLuv. *ta-i* (§69) and Hitt. *šiya-* and *peššiya-* 'throw' (likewise *mi*-conj.) beside the *i*-present *šai-* (despite the reservations expressed by Melchert 1989: 37 f.). As for the origin of the type—and thus perhaps for part of the *tudáti*-class as well—it is tempting to wonder whether the starting point might not have been a *h*$_2$*e*-conjugation 2 sg. imperative in *-é, which was then pluralized by adding the 2 pl. ending **-te,* medialized by adding **-su̯e* or **-su̯o,* put into the third person by adding **-tu* and **-ntu,* and so on. A Hittite imperative of this type is to be found, at least descriptively, in the famous *tiyammu tiya* of KBo III 40 13', regardless of whether this is taken to mean 'put on me, put on' (: *dai-*; so e.g. Oettinger 482) or 'bind on me, bind' (Ved. *dyáti*; so Watkins 1995: 459 n. 15)). For the moment this must remain pure speculation; the PIE *h*$_2$*e*-conjugation 2 sg. impv. ending is not in fact independently known to us. But it is a scenario that would accord well with the facts we know, since imperatives tend crosslinguistically to be terminative or perfective, and perfective meaning is often expressed in IE languages by the addition of a preverb. Starting from a 2 sg. impv. **sh*$_2$*(h*$_1$*)i̯-é* would allow us to explain the scansion *siá-*, which is found even in longer forms like 2 sg. mid. *siasva* and 2 pl. mid. *siadhvam,* as a Lindeman's Law effect (Lindeman 1965). See further §130.Another view, extremely improbable in my opinion, is suggested by 'das von K. Hoffmann und G. Klingenschmitt erkannte Verteilungsprinzip, daß *CC-(i)i̯é-* die ursprünglich aufs Verbalkompositum beschränkte Nebenform des Präsenstyps *CC-e̯ie-* sei (gr. δαίεται < **dh*$_2$*-e̯ie-* gegenüber ai. *ava-dyáti* zu **deh*$_2$*-* 'teilen')' (quoted by Oettinger, 350).

These observations help to clarify the status of the Greek presents δέω 'bind' and σχάω (⇒ σχάζω) 'cut open, let loose', which recall Ved. *dyáti* and *chyáti* and are usually traced to preforms *dh_1-i̯e/o- and *$sḱh_2$-i̯e/o- ('*$dð$-i̯e/o-', '*$sḱð$-i̯e/o-'). From a purely formal point of view this analysis is not impossible, although the vocalization of *-h_1- to -ε- and *-h_2- to -α- before *-i̯- would probably have to have been analogical rather than phonological. But *dyáti* and *chyáti* are, as we have just seen, virtual *tudáti*-presents built to the 'normal' *i*-presents *deh_1-i- / *dh_1-i- and *$sḱeh_2$-i- / *$sḱh_2$-i-, and these ablauting stems would *themselves* have given Gk. δέω and σχάω via the *-*AHIHA*- rule, just as *$tḱeh_1$-i- / *$tḱh_1$-i- and *deh_2-i- / *dh_2-i- gave κτέομαι and δα[ί]ομαι. There is thus no good reason to favour the derivation of δέω and σχάω from zero-grade preforms, since zero-grade thematic presents are rare in Greek and word equations with *tudáti*-presents in Indo-Iranian are virtually non-existent.

§66. The third and last important group of *i*-present reflexes in Indo-Iranian consists of class IV (*-ya-*) presents in which the *-ā-* of the root is retained without shortening. We have already met *sphāyate,* the cognate of Hitt. *išpai-*; other examples include *rā́yati* 'barks' (= YAv. *raiia-*),[238] *vā́yati* 'fades' (= YAv. *vaiia-* 'be ex-tinguished'), *trā́yate* 'protects' (= GAv., YAv. *θrāiia-*), *gā́yati* 'sings', *pyā́yate* 'swells', YAv. *šāiia-* 'rejoice', and a few others. These forms, which are indistinguishable from ordinary *-i̯e/o-*presents in Indo-Iranian terms, do not at first glance appear problematic. Certainly they can easily be generated within the framework elaborated above: given the existence of PIE presents of the type 3 sg. *$dhéh_1$-i̯-e* : 3 pl. *dhh_1-i̯-énti,* stems of the type *sphā́ya-, vā́ya-*, and *trā́ya-* could either have been extracted from the 3 sg. of the ancestral paradigm, as was usual outside Indo-Iranian and Greek, or they could have replaced older *sphā́̆ya-*, *vā́̆ya-*, *trā́̆ya-* under the influence of non-presential forms in which the *-ā-* of the root was preserved. But such an analysis would not

[238] On the (graphic) short vowel in Avestan cf. Kellens 1984: 137.

explain why certain roots emerged in Indo-Iranian with stable and invariant presents in *-āya-*, while others emerged with equally stable presents in *-ăya-*. This is not a trivial point. As we shall see, there is a genuine linguistic principle, dimly but unmistakably detectable in the comparative evidence, that determined whether a given *i*-present would be assigned to the 'long-vowel' or 'short-vowel' type.

The cognates of *sphāyate* include not only Hitt. *išpai-*, but also Lith. *spė́ju, spė́ti,* OCS *spějǫ, spěti,* and PGmc. **spō(j)an* (OE *spōwan,* OHG *spuoen*). Among these, the Germanic verb stands out with its ō-vocalism, which recurs in the noun **spōdi-* (OE *spēd,* OHG *spuot*) 'haste, *speed*'. The Germanic forms are generally thought to contain an *o*-grade root **spoh$_1$-*, but it is hard to find a rationale for the appearance of *o*-grade in a *ie/o*-present and the associated abstract noun in **-ti-*. The possibility that the *-ō- was taken over from the reduplicated preterite **spespō,* as suggested, for instance, in *LIV*[2] 532, is vanishingly small; the association of *e*-grade with the present, and *o*-grade with the preterite, is too solidly entrenched a phenomenon in Germanic for an innovation of this kind to have had any chance of establishing itself.[239] It should not be forgotten, however, that Gmc. *-ō- represents both etymological *-ō- and *-ā-. An alternative analysis of *sphāyate, spė́ju, *spō(j)an,* etc. would be to set up the root as **speh$_2$-*, with a second laryngeal, and to reconstruct a 'Narten' *i*-present as in Fig. 4.3:

FIGURE4.3

sg. 1 **spéh$_2$-i-h$_2$e(i)*	pl. **spéh$_2$-i-me-*
2 **spéh$_2$-i-th$_2$e(i)*	**spéh$_2$-i-(t)e-*
3 **spéh$_2$-i-e*	**spéh$_2$-i-n̥ti*

The *-ē- of the Baltic and Slavic forms, under this reconstruction, would represent the lengthened grade **spēh$_2$-*, and the difference in vocalism between Balto-Slavic and Germanic would simply reflect the fact that the original paradigm had both a strong stem **spēh$_2$-i-* (with regular non-coloration of *-ē-; cf. Eichner 1973: 72) and a weak stem **spěh$_2$-i-*. No problem is posed by the vocalism of Lat. *spēs,* pl. *spērēs* 'hope', which seems in any case to rest on an acrostatic

[239] This fact is implicitly acknowledged by those scholars who unhesitatingly accept the antiquity of the *-ō- in Gmc. **dōn,* even though the specific facts in the case of **dōn* make the possibility of a transferred *-ō- from the perfect incomparably more attractive than in **spō(j)an.* Cf. Ch. 3 n. 8.

s-stem **spēh_2-s-* (cf. Gk. ἔϑος, ἦϑος 'habit' < **su̯ēdh-s-*).[240] Indeed, the reconstruction with *-h_2- rather than *-h_1- brings an unlooked-for advantage in another sphere: it allows us to explain the Vedic voiceless aspirate *-ph-*, which would have been phonologically regular in zero-grade forms like *sphirá-* 'thick' < **sph_2-ró-* (cf. *sthitá-* 'standing' < **sth_2-tó-*).[241]

It is always easy, of course, to set up new and ad hoc ablaut types for the parent language; if the reconstruction **spēh_2-i-* : **spḗh_2-i-* did nothing more than 'explain' the difference between **spē̯ie/o-* (> Lith. *spḗju,* etc.) and **spā̯ie/o-* (> Gmc. **spō(j)an*) it would hardly merit further attention. In fact, however, the hypothesis of a class of *i*-presents with *ē : *ĕ ablaut shows its utility in several ways. Note, in particular, that there would have been a key difference in the way 1 sg. **spēh_2-i-h_2e(i)* and 1 sg. **dhéh_1-i-h_2e(i)* 'I suck' would have been affected by the *-*AHIHA*- rule. While **dhéh_1-i-h_2e(i)* was converted by the rule to **dhéih_2e(i),* with a short root vowel that was ultimately generalized through the paradigm in Indo-Iranian and (in other lexical items) in Greek, **spēh_2-i-h_2e(i)* would have retained its *-*ē*- intact (**spēih_2e(i)*) even after the loss of the root-final laryngeal. There would thus have been no analogical source for the spread of *-ĕ- as in the main group of *i*-presents, and the expected output would have been the attested *sphāya-*, with preserved *-ā-*. This entirely unanticipated correlation of what we might call 'qualitative instability' (hesitation between forms in *-*ē*- and *-*ā-*) and 'quantitative stability' (no shortening of the type observed in *dháyati* / κτέομαι) recurs in at least one other example.

The forms of Gk. "νέω" 'spin' (Att. νῶ, νῇς, νῇ etc., inf. νῆν; 3 sg. 'Aeolic' impf. ἔννη (EM)), show that the Common Greek present of this verb was *(σ)νήjε/ο-, with unshortened *-*ē*- before the *i̯e/o*-suffix.[242] The root is the **(s)nē-* / **(s)nēi-* of pre-laryngeal IE phonology, to the long diphthong of which Pokorny (973) significantly attaches the remark 'vielleicht aus dem Präs. *snē-i̯ō*; oder umgekehrt *snē-* aus *snēi-*?' The *i̯e/o*-present is well attested around

[240] The tendency of lengthened-grade verbal forms to be associated with lengthened-grade nominal forms, and vice versa, was a recurrent theme in the lectures of the late J. Schindler. It is no accident that the root **su̯edh* - also underlies a lengthened-grade perfect in Gk. εἴωϑε, or that the acrostatic *s* -stem **sēd-s* - 'seat' (cf. Lat. *sēdēs,* OIr. *síd*) corresponds to a lengthened-grade iterative-causative **sōd-ei̯e/o* - (= OIr. *sáidid* 'implants').

[241] This explanation of the voiceless aspirate was suggested by Alan Nussbaum, to whom I am indebted for much illuminating discussion of this root.

[242] On the Attic inflection, which has influenced—and been influenced by—the forms of ζῆν 'live', see Schwyzer 1939: 675. The readiness with which Schwyzer (ibid.), Frisk (*GEW* ii. 311–12), and other writers accept the testimony of the imperfect *ἔνϑη* as evidence for a root present *σϑῆμι is surprising, given the uncertain provenance of the form; nothing in fact precludes the possibility of a contraction from a thematic 3 sg. in *-η(*j*)ε. It is significant that *ϑῆν* has a well-established *s* -aorist (*νῆσαι, -σασϑαι; Hom.+)—resembling in this respect countless i̯e/o* -presents, but differing dramatically from bona fide li-presents like φημί 'say' and (3 sg.) ἄ(*f*)ησι 'blows'.

the family, appearing also in Lat. *neō, nēre* 'spin', MIr. *snúid* 'twists', OHG *nāen* (< **nē(j)an*) 'sew', and Latv. *snāju, snāt* 'twist, spin'. Most of these forms are perfectly compatible with a reconstruction **snéh$_1$-i-* or **néh$_1$-ie/o-*, with **-h$_1$-*; only Latv. *snāju,* with a root vowel that points unambiguously to earlier **-ā-*, stands apart. But the Latvian form in turn suggests **-ā-* rather than **-ō-* as the original vocalism of Germanic and Celtic nominal forms like OE *snōd* 'headband' and OIr. *snáthe* 'thread'. The unextended root would seem to have been **sneh$_2$-* rather than **sneh$_1$-*; the **(s)nē-* that figures so prominently in the comparative data is in fact to be interpreted as the reflex of the lengthened-grade **snēh$_2$-*. The PIE present can accordingly be reconstructed as **snéh$_2$-i-* : **snéh$_2$-i-*; the failure of νήε/ο- to become *νέε/ο- in Greek is precisely comparable to the failure of *sphāyate* to become **sphā́yate* in Indo-Iranian.[243] A third widely distributed 'Narten' *i*-present is implicit in the traditional comparison of IIr. **rā́ia-* and its obvious cognates (Arm. *lam* 'weep', Lith. *lóju, lóti* 'bark', OCS *lajǫ, lajati* 'bark, complain', Go. **lauan* (?) 'abuse') with OIr. *lúid* 'imputes' under the rubric of a root '*lā-* und *lē-*' (*IEW* 650). In mechanical terms, it would be simple enough to set up a present **lḗh$_2$-i-* : **lh$_2$-i-* to account for the extended word family. But only OIr. *lúid* has unambiguous ē-vocalism, and the semantics of the equation are not compelling.

§67. Our survey of the non-Anatolian evidence for *i*-presents, organized around the Vedic material, has revealed the existence of two probable apophonic types in the parent language: (1) a mobile type ('type I') with **e* : *zero* ablaut, represented by 3 sg. **dhéh$_1$-i-e* : 3 pl. **dhh$_1$-i-énti* 'suck' (Ved. *dhā́yati*); and (2) an acrostatic Narten type ('type II') with **ē* : **ĕ* ablaut, represented by 3 sg. **spḗh$_2$-i-e* : 3 pl. **spéh$_2$-i-n̥ti* 'be sated' (Ved. *sphāyate*). To these can probably be added, as we have seen, an oxytone thematic type with zero grade of the root, derivationally based on type I and unambiguously attested only in Indo-Iranian and perhaps Hittite (**sh$_2$h$_1$-i-é/ó-* 'bind', Ved. *syáti*). Outside Indo-Iranian, the only branch of the family to distinguish systematically between types I and II is Greek. Here type I is represented by contract presents in -άω (-ά**ο**μα**ι**) and -έω (-έ**ο**μα**ι**), of which κτέ**ο**μα**ι** (κτά**ο**μα**ι**), δέω ('bind') and σχάω have already been cited; other probable examples include δρά**ω** 'perform' (< pres. **dr(e)h$_2$-i-*; cf. Lith. *daraũ, -ýti* 'do')[244] and ἐά**ω** 'let, allow' (< pres. **h$_1$u̯(e))h$_2$-i-*).[245] Most of these verbs have futures and *s*-aorists with full grade of the root (δέω : δή**σω** : ἔδη**σα** : ἐά**ω** : ἐᾶ**σω** : εἴᾱ**σα**, etc.); it was

[243] Perfectly conforming to this picture would be the supposed Sanskrit present *snāyati* (root *snai* -) 'wraps around, clothes, adorns', a form well known to readers of older etymological dictionaries. Unhappily, however, this present is only a grammarians' fiction, invented to supply a verb to the noun *snāyú* - 'sinew'.

[244] Note the predictable switch from state I **derh$_2$* - to state II **dreh$_2$-i* - (cf. §64).

[245] On the forms and etymology of ἐά**ω** see Nussbaum 1998: 9–84, especially 73 ff.

probably from such cases that Greek regularized the pattern -ά̄ω : -ᾱσ-, -έω : -ησ- to the overwhelming majority of polysyllabic contract verbs.[246] Type II in Greek is represented not only by νῆν, but by a handful of other verbs with unshortened root vowel, including κνῆν 'scratch, scrape' (i.e. κνή ω *κνᾱ́jω), ψῆν 'rub' (*i.*e. ψήω), and σμῆν 'wipe' (i.e. σμήω). The clearest of the group is κνῆν, which has an exact cognate in OHG *(h)nuoen* 'smooth down' (< **hnō(j)an*). The byform κναίω, found only in compounds, shows the δαίομαι treatment (§65), with -αι- taken from the future κναίσω and aorist ἔκναισα (< **kneh₂-i-s-*).[247] Cf. further ψαίω beside ψῆν, of unclear etymology.[248]

Presents of the form **C(C)V̄-i̯e/o-* are abundant in the other IE languages as well, but in the absence of firm comparative evidence their testimony cannot always be relied on. Germanic has a few lengthened-grade *verba pura,* including **knē(j)an* 'know' (OHG *(ir-)chnāen,* OE *cnāwan,* ON *knā*) and **blē(j)an* 'blow' (OHG *blāen,* OE *blāwan*).[249] The *-ē-* of **knē(j)an* suggests a type II *i*-present **ĝnēh₃-i- / *ĝnĕh₃-i-*, the weak stem of which could in principle also have given OCS *znajǫ* 'id.'. But the productivity of *i̯e/o*-presents in Germanic and Slavic, together with the known affinity of the root **ĝneh₃-* for nasal and *ske/o*-presents in the other branches of the family (cf. Ved. *jānā́ti,* Gk. γιγνώσκω, etc.), make it at least as likely that **knē(j)an* and *znajǫ* are independent innovations. **blē(j)an,* which is cognate with Lat. *flō, -āre* 'blow', is a more credible example: the Latin form suggests a root-final *-h₂-*, making a stem **bhlēh₂-i- / *bhlĕh₂-i-* plausible for the parent language.[250] Another Germanic *verbum purum* of interest is Go. *faian* 'reproach' (< **fē(j)an*), standardly compared with Gk. πῆμα 'calamity, woe', πημαίνω 'ruin, distress', and related nominal forms. Alongside *faian* is found the class III weak verb Go. *fijan,* 3 sg. *-aiþ* (= OHG *fīēn*), which presupposes a middle in 3 sg. *-*ai* < *-oi* (cf. §48) and means 'hate', presumably via the etymological middle sense 'reproach to oneself, reproach mentally'. The pair 3 sg. *faiiþ* (< **péh₁i̯-i-e*) : 3 sg. *fijai*[þ] (< **ph₁-i(i̯)-ór*) is thus precisely comparable to Anatolian active : middle pairs of the type Hitt. 3 sg. act. *ḫalzāi* : 3 sg. mid. *ḫalziya(ri)* (cf. remade Luv.

[246] To which was later added the factitive type in -όω : -ωσ-, with -o- in the present backformed from the -ω- of the non-presential tenses.

[247] It is curious to note that Schwyzer (1939: 676) sets up an athematic **knē* [*i*]*mi* for this word.

[248] The semantically dubious connection with Ved. *psāti* 'chews, devours' (AV) is rightly rejected by the editors of *LIV* (82), following Mayrhofer, *EWAia* 198.

[249] In using the evidence of Germanic primary verbs of the structure **(C)CV̄-(j)an* ('*verba pura*'), I follow the analysis of Thórhallsdóttir 1993, who shows that the *-j-* of the present stem was lost in Proto-Germanic. The resulting hiatus was secondarily filled by a new *-j-* in most of continental West Germanic, and by *-w-* in Old English.

[250] Given the full grade of verbs like *nēre, plēre, flēre, nāre,* etc., it is better to take *flāre* from a preform **bhleh₂i̯-* than from a zero-grade stem **bhl̥H-i̯-*.

ḫaltatti : *ḫaltittari*), 3 sg. act. *šāi* : 3 sg. mid. *šiyati* (pret.), HLuv. 3 sg. act. *tai* 'steps into place' (< **(s)téh₂-i-ei*; see §69) : Hitt. 3 sg. mid. *tiyari* 'id.', etc. Examples of this kind are very rare in the non-Anatolian languages, where the middles of etymological *i*-presents are usually based on the corresponding actives (cf. Gk. κτέομαι with the same vocalism as Ved. *kṣáyati,* etc.). Another active : middle pair with preserved ablaut may underlie the Lithuanian pair *siẽti* (= Hitt. *išḫai-*) 'bind' (< **sh₂eh₁-i-*, with metatony) : *sýti* 'be connected' (< **sh₂ih₁-* < **sh₂h₁-i-*), but the corresponding finite forms have been massively remodelled.[251]

§68. An important special case of a PIE *i*-present is the stem **bhuH-i-* 'become', which has left reflexes in Greek (φύω 'produce, bring forth', mid. φύομαι (-ŭ- and (Att.) -ū̆-) 'grow, arise'), Latin (*fiō, fīs,* etc. 'become'), Celtic (OIr. 1 sg. *bíu,* 3 sg. *bŭ̆id* 'is wont to be'), and Germanic (OE 1 sg. *bēo* (Anglian *bīo*), 3 sg. *bi þ* 'is (by nature), is wont to be'; OE, OHG *būan,* ON *búa* 'farm, inhabit'). The original paradigm can be set up as in Fig. 4.4:

FIGURE4.4

sg. 1	**bhúH-i-h₂e(i)*	pl.	**bhuH-i-mé-*
2	**bhúH-i-th₂e(i)*		**bhuH-i-(t)é-*
3	**bhúH-i-e*		**bhuH-i-énti*

Since the root **bhuH-* was apophonically invariant in PIE, it is impossible to assign these forms to type I or type II on the basis of vocalism alone.[252] But the relationship of φύω, *fiō,* etc. to the root aorist **bhuH-* (cf. Ved. *ábhūt* 'became' Gk. ἔφῡ̄ 'arose', OCS *by(stъ)* 'became') is precisely the same as that of the type I presents **dh(é)h₁-i-* (Ved. *dhā́yati,* etc.), **ĝhu̯(é)H-i-* (Ved. *hvā́yati*), and **d(é)h₁-i-* (Gk. δέω) to the root aorists **dh(é)h₁-* (cf. Ved. *ádhāt,* Gk. δῆσδαι), **ĝhu̯(é)H-* or **ĝh(é)uH-* (Ved. 1 pl. *áhūmahi*), and **d(é)h₁-* (Gk. ἔδη[σα]), respectively. **bhuH-i-* should therefore be analysed as a type I *i*-present as well, with the accentual mobility, if not the **e* : *zero* apophony, of its more typical congeners.

[251] The present *siejù* 'I bind' (žem. *sejù*) is secondary, built to the infinitive *siẽti* on the model of verbs like *gl(i)ejù, gliẽti* 'smear' (< **gleiH* -). *syjù* 'I am connected' appears similarly to be based on *sýti*.

[252] The apophonically inert character of **bhuH* - requires some emphasis in view of the *LIV²* entry for this root (83–5), where both a full grade **bhu̯eh₂* - and a full grade **bheuh₂* - are claimed for the parent language. Neither the one nor the other is well-founded. **bhu̯eh₂* - is based solely on the Italic and Celtic preterite and subjunctive stem **bh(u)u̯ā* -, which in view of the parallel stem **esā* - is better analysed as a bimorphemic sequence (root **bhuH* - + suffix **-eh₂* -). The present stem **bhá u̯a* - is an innovation of Indo-Iranian, probably created on the basis of the perfect stem **bhebhu̯* - (cf. Jasanoff 1997*c*). Whatever else, *bhávati* clearly has nothing to do with ON *byggja* 'farm, dwell', a weak verb whose immediate predecessor is reconstructible as a Proto-Germanic causative **buwwijan* (< **būwijan,* analogically lengthened from **buwijan* < **bhuH-éie/o* -; cf. Thórhallsdóttir 1993: 158 f.).

The post-PIE treatment of the present **bhuH-i-* proceeded along largely predictable lines. In the 3 sg. and 3 pl. the sequence **bhuH-i-* gave **bhu̯i-*, which yielded Gmc. **bū(j)an* and perhaps—if we accept the widely assumed Italic change of **-u̯i-* to *-i̯i-*—-Lat. *fiō*. Outside the third person, however, **bhuH-i-* developed phonologically to **bhu̯i-* or **bhu̯ī*—-the former in the 1 sg., where **bhuH-i-h₂e* gave **bhu̯ih₂e* (< **bhuih₂e*) by the **-AHIHA-* rule, and the latter in the 2 sg. and 1, 2 pl., where there was regular metathesis of **bhuH-i-* to **bhu̯iH-* before a consonant.[253] The alternants **bh(u)i-* and **bh(u̯)ī-* led in some IE dialects to stems of the type **bhi̯(ie/o)-*, which ultimately became the source of OE *bīo, biþ* (+OS 1 sg. *biu*[*m*], OHG 2 sg. *bist,* etc.), OIr. *bíu* (=MW *bydd*[*af*]), and possibly Lat. *fiō* (if not simply < **fi̯i̯ō*). In Greek the treatment was more complicated. To judge from the examples discussed earlier, Greek might have been expected to generalize the stem form proper to the 1 sg.: just as δἐω acquired its short -ε- from the 1 sg. **déi-h₂e(i)* < **déh₁-i-h₂e(i),* the Greek reflex of **bhuH-i-* might have been expected to show the phonology of the 1 sg. **bhu̯i-h₂e(i)* < **bhuï-h₂e(i)* < **bhúH-i-h₂e(i).* But no trace of a present *φἰω or *φἰομαι is found. Evidently the phonetic disparity between the **bhu̯i-* of the 3 sg. and the theoretically expected **bhu̯i-* of the 1 sg. was too great to be tolerated; the 1 sg. was analogically resyllabified as **bhu̯i-h₂e(i),* and it was from the root form **bhu̯i-*, rather than **bhu̯i-*, that the attested φὐω,φὐομαι was created.[254] From a descriptive point of view, the end result was exactly the same as in other type I *i*-presents: the long vowel of the root was shortened. The Aeolic present φυἰω, if genuine (see Tucker 1990: 386), is a form of the same type as δαἰομαι, and can be explained in the same way.

§69. We must now return to Hittite. Like *molō*-presents, *i*-presents in Hittite underwent considerable paradigmatic levelling and simplification. The distinction between types I and II was lost, and the relatively small number of verbs with roots ending in **-h₂-* were analogically assimilated to the dominant

[253] The same metathesis probably underlies the isolated noun φῖτυ 'bud'.

[254] The -ῡ- of Attic φῦομαι is presumably an import from the aorist ἔφῡν, ἐφῦσα and future φῡσομαι; there is clearly no warrant for setting up a separate stem **bhuH-i̯-*. Greek transferred the intransitive meaning of the original paradigm to the middle forms, leaving the active φὐω free to take on the value of an oppositional transitive. Cf. §84.

type in root-final *-h_1-. Thus, only a subset of the 'core' group of *dai*-verbs actually go back to preforms with both *e : *zero* (as opposed to *$\bar{e}$: *$\check{e}$) ablaut and *-h_1- (as opposed to *-h_2-). Two clear cases are *parai-* and *šai-*, whose original membership in type I is shown by their association with old root aorists (cf. above) and with present formations that presuppose root aorists. PIE *$preh_1$- 'blow, light a fire' underlies a Greek reduplicated present πίμπρημι and an *s*-aorist (< root aorist) ἔπρησα, matching the pattern of πίμπλημι 'fill', aor. ἔπλησα, mid. πλῆτο), while *seh_1- 'release, sow' has a Latin reduplicated present *serō* < *si-sh_1-e/o- and a perfect (*sēui*) that can only go back to a root aorist *seh_1-*m,* *-*s,* *-*t.* Here too, if our reconstruction of the root with two laryngeals is correct, belongs *išḫai-* (:*sh_2eh_1- 'bind'), with a Vedic root aorist *asāt* and a nasal present *sināti. dai-* (:*$dheh_1$- 'put') likewise patterns with this group (cf. Ved. *ádhāt, dádhāti,* Gk. τίδημι, etc.), but probably did not originally form an *i*-present (cf. §60).

išpai-, on the other hand, comes from a root in final *-h_2- (: *$speh_2$- 'be sated') and originally belonged to type II (§66). The 3 sg. form *išpāi* is probably the phonologically regular outcome of *$spē$-y-$ę$ < *$spēh_2$-i-$e(i)$, with the normal loss of *-h_2- before *-i-.[255] In the present plural the apophonic treatment was the same as in neo-zero-grade forms of the type 3 pl. pres. *adanzi* and 1 pl. *tumēni* (§§52–3): the theoretically expected weak stem *$speh_2$-i- was replaced by *sph_2-i- (> *išpi(i)-*), which served as the basis for the 3 pl. *išpiyanzi* and eventually spread to the preterite (3 pl. *išpier,* 2 pl. *išpitten*). Among the other strong forms, the 1 sg. pres. *$išpēḫḫi$ and 1 sg. pret. *$išpēḫḫun$ are probably regular by the *-*AHIHA*- rule (*-$ēh_2$-i-h_2- > *-$ē$-i-h_2- (> *-$āiḫḫ$-?) > *-$ēḫḫ$-). The only positions in the paradigm where the root-final *-h_2- would likely have been retained would have been the 2 sg. present and preterite, where *$išpē(ḫ)ḫitti,$ *-$ē(ḫ)ḫitta$ would have been the regular forms (see however n. 28), and the 3 sg. preterite, where the regular form would have been *$išpē(ḫ)ḫiš$. It should cause no surprise that the synchronically anomalous sequence *-$ē(ḫ)ḫi$- in the paradigm of *išpai-* was eliminated.[256]

Other possible examples of root-final *-h_2- are *piddai-* (probably originally type I), if the root is correctly reconstructed as *$peth_2$- / *$pteh_2$- and not

[255] For the rule see Melchert 122.

[256] To put it more summarily, it would probably be safe to say that with the change of *$spēh_2$-i-$e(i)$ to *išpāi* and *$spēh_2$-i-$h_2e(i)$ to *$išpēḫḫi,$ the conversion of *$spēh_2$-i- into a 'normal' *i*-present would have been all but inevitable.Note that *i*-presents show the same apophonic arrangements as ablauting *mi*-verbs in Hittite: the plural of the present has zero grade (e.g. 1 pl. pres. *iyawen*), while the plural of the preterite, at least in the more conservative cases, has *e*-grade (e.g. 1 pl. pret. *daiwen*). In *išpai-*, as in many other individual examples, the contrast between the present and preterite plural was given up.

*$peth_1$- / *$pteh_1$-; and *seh_2- 'bind', if the 'short' version of the root is preferred to *sh_2eh_1-, the form favoured here.[257] More definite and more interesting, however, is the case of CLuv. *tā-* 'step (into position), stand' and HLuv. *ta-* 'id.', the latter of which, at least, is known definitely to be a *ḫi*-verb.[258] The root is the familiar PIE *$steh_2$-* 'step into place, stand', with much the same morphological profile as *$dheh_1$-, *seh_1-, and other roots with type I *dai*-presents (cf. Ved. aor. *ásthāt,* Gk. ἔστᾱν pres. *tíṣṭhati* ἵστᾱμι, etc.). The attested inflection in the Luvian languages is based on a monophthongal stem *tă-* (cf. Luv. 3 sg. pret. *tātta,* HLuv. 1 sg. *ta/i-wa/i* (= *tawi*), etc.), which must have been extracted from the 3 sg. **tāi* (HLuv. *ta-i, tà-i*) < *$*(s)téh_2$-i-e(i).* Related Hittite forms are the 3 sg. middle *tiyari* (§67) and the *mi*-verb *tiya-* 'step' (3 sg. *tiezzi*), historically a present of the *syáti*-type (cf. n. 37).[259]

§70. The study of PIE *i*-presents has only begun. That such forms existed in the parent language, and that they yielded *ḫi*-conjugation verbs of the *dai*-type in Hittite and *-ie/o*-presents outside Anatolian seems certain. It likewise seems clear that the *-*i*- which characterized the PIE forerunner(s) of the *dai*-type was historically the 'same' as the *-*i*- which was sometimes added to roots of the structure *C(C)eH- to form extended roots of the 'long-diphthongal' type. What is not so clear is the extent to which *-*i*- and the familiar thematic suffix *-*ie/o*- were in complementary distribution. Only tentative answers can be given to the following questions:

(1) Were *i*-presents formed *only* to 'long-vowel' roots in PIE, or did *-*i*- also serve to derive present stems from roots of other types?

[257] If the root was *seh_2 -, the retained laryngeal of *išḫiḫḫi, išhāi,* etc. would have to have been reintroduced into the singular from the plural stem *sh_2-i -.

[258] The fundamental discussion of these forms remains Morpurgo Davies 1987: 211 ff.

[259] The relationship of the Anatolian forms to the forms of 'stand, stand up' in the other IE languages is not as clear as it might be. An exact formal and functional counterpart to the *dai*-present *$steh_2$-i-/*sth_2-i-* is found in Lith. *stóju, stóti* 'step' and Slav. **stajǫ, *stati* 'position oneself'; despite the productivity of *-ie/o*-presents to long-vowel roots in Balto-Slavic, it is tempting to see a genuine equation here. But Italic, Celtic, Germanic, and Slavic inherited a present '*stā̯iō' in the stative meaning 'stand': cf. Sabellic **staē̄-* (Osc. 3 pl. *-stínt,* etc.), transferred to the second conjugation for semantic reasons; Celtic **ta(j)e/o-* (OIr. subst. vb. 1–3 pl. *·taam, ·taid, ·taat*); WGmc. **sta(j)an* (OHG *stān,* 3 sg. *stēt* < **sta(j)iþ*); Sl. **stoji-* (OCS *stojǫ,* 3 sg. *-it*), likewise transferred to the productive stative type on semantic grounds. It is not obvious why the laryngeal was vocalized in these forms (**staie/o-* < *$*sth_2$-ie/o-*) but not in Hitt. *tiya-* and *tiyari*.Melchert (69, 268) takes Luv. *tātta* 'has arrived' by sound change from *$*steh_2$-to,* evidently seeing in HLuv. 3 sg. *tai* not the historically regular 3 sg. of an *i*-present *$steh_2$-i-*, but the synchronically regular 3 sg. of an analogically generalized stem *tā-*. This seems both phonologically and morphologically improbable to me—phonologically, because it depends on an otherwise questionable sound law deleting *h_2 before stops; and morphologically, because the Luvian forms and Hitt. *tiya-* and *tiyari* cry out for a common explanation.

(2) Were *all* apparent instances of *-ie/o-*presents to 'long-vowel' roots in the non-Anatolian languages in fact thematized *i*-presents, or did roots of the structure **C(C)eH-* form true *-ie/o-*presents as well?

As far as (1) is concerned, our point of departure must be the fact that Anatolian, the only branch of the family to make a clear morphological distinction between *i*-presents and *-ie/o-*presents, has a great many *-ie/o-*presents built to non-'long-vowel' roots (e.g. *wemiya-*, *weriya-* 'pronounce', *karpiya-* 'lift', *parkiya-* 'ascend'), but only two well-established *i*-presents to such roots, viz. *ḫalzai-* and *išḫamai-*. The value of these latter forms is limited: neither has a viable etymology, and neither can be explained on the basis of a normal *i*-present paradigm without a host of ancillary assumptions.[260] The null hypothesis, therefore, must be that the almost consistent Hittite restriction of **-i-* to roots of the type **C(C)eH-* and **-ie/o-* is an archaic feature, and that there were no *i*-presents to obstruent- or sonorant-final roots in the parent language.[261] Although the possibility remains open that some or all of the *-ie/o-*presents reconstructible for PIE were thematized from earlier (pre-PIE) *i*-presents, there is no particular reason to think this likely.

As for the complementary question of whether all presents of the form **C(C)VH-ie/o-* in the non-Anatolian languages go back to *i*-presents, it must be noted at the outset that many *-ie/o-*presents, particularly in Germanic and Balto-Slavic, were probably created at a date when the general post-IE thematization of *i*-presents had made the distinction between *i-* and *-ie/o-*presents meaningless. The proper question, therefore, is whether any of the documented presents of the form **C(C)V-ie/o-* that *do* go back to the parent language must be reconstructed with **-ie/o-* rather than **-i-*. Here again the Hittite evidence is tolerably clear. Although future discoveries may eventually change the picture, Hittite has not thus far been shown to have *any mi*-verbs of the etymological type **C(C)VH-ie/o-*. To be sure, *tāya-* 'steal' (3 sg. *ta-a-i-(e)-)iz-zi,* etc.) is often adduced as such a case (e.g. by Oettinger (397), Melchert (130), and *LIV* (559)). Problematic for this analysis, however, is the fact that the sequence **-eh₂ie/o-* is known to have given *-āi- / -ā-* in Hittite, notably in verbs of the type

[260] In particular, it is difficult to see how the *dai* -type inflection could have arisen in *ḫalzai* - and *išḫamai* - without assuming bizarre structures of the type **h₂lt(é)H-i* -, **sh₂m(é)H-i* - or the like. The rare *āppāi, -iyanzi* 'be finished' (Oettinger 477), likewise of unknown etymology and only doubtfully a member of the *dai* -class, would require an analysis of the same kind. Common Luvian **warri(ya)* - 'help', which Melchert (78) treats as a *dai* -verb and takes from **1érh₁-i -/*u̯rh₁ -i* -', is better explained on the basis of a more ordinary **u̯réh₁ -i -/*u̯rh₁ -i* -'. See §80 with n. 26.

[261] Phonologically conditioned restrictions of this kind are not unparalleled; one thinks, for instance, of the near-failure of *C(C)eRC* - roots to make *s* -aorists in Sanskrit (Narten 1964: 18), or the failure of roots of the structure **C(C)eH* - to make simple thematic presents in PIE.

ḫatrāmi, 3 sg. *-āizzi* 'write'. No other IE language makes a *-ie/o-*present from the root **(s)teh₂-(i-)* 'steal' (**(s)tāi-*' *IEW* 1010)—not even Slavic, where instead of the expected **tajǫ, -ješi, -jetъ* (inf. **tatи*) we find *tajǫ, -jiši, -jitъ* (inf. *tajitи*) 'conceal', with a present stem in Slavic *-i-*. Slavic **taji-* can only go back to an older present in **-e̯ie/o*—-either a denominative factitive based on the adverb *tajъ* (< **tāi̯u?*) 'in secret' (so Eichner 1979: 204), or a causative **toh₂i̯-é̯ie/o-*, formed like Ved. *pāyáyati* 'causes to drink' (: **peh₃-i-* 'drink'; so Jasanoff 1978*b*).[262] Whichever analysis is preferred for Slavic, an iterative-causative **toh₂i̯-é̯ie/o-* is probably best set up as the source of Hitt. *tāya-*, with an ad hoc, but phonetically plausible, change of **-e-* to **-i-* between two yods (**tōyeyeti* > **tōyiyeti* > **tāyyeti* > *tāyezzi*).[263] Once the potential counterexample of this verb is eliminated, the situation in Hittite is unambiguous: 'long vowel' and 'long-diphthongal' roots make presents in **-i-*, but not in **-i̯e/o-*; other roots make presents in **-i̯e/o-*, but not in **-i-*. It can be taken as a working hypothesis that this was the state of affairs in PIE.

§71. Another kind of *i*-inflection, different from that seen in the *dai*-type, is found in a variety of more complex verbal stems in Hittite. These are grouped together by Oettinger in class II 3 a γ, typified by *mēma/i-* 'say'.[264] The principal characteristics of the *mema/i*-type in older Hittite are (1) a strong stem in *-ā-*, usually with shortened *-ai* rather than *-āi* in the 3 sg. (pres. sg. *mēmaḫḫi* (*-aḫḫe*), *-atti, -ai*); (2) a weak stem in *-i-* (1 pl. *memiweni,* 3 pl. *memianzi*); and (3) a preference for sigmatic endings, including *-iš / -eš* or *-išta / -ešta* in the 2 sg. and 3 sg. preterite (*memišta*). In addition to *mema/i-*, the important exemplars of this pattern are *uppa/i-* 'send', *dāla/i-* 'leave', *penna/i-* 'drive away', *unna/i-* 'drive hither', *nanna/i-* 'drive', and—standing somewhat apart—the 'duratives' in *-anna/i-* (*iyanna/i-* 'get underway', etc.).[265] All call for comment.

mema/i- itself is probably in origin a perfect of the same semantic type as Gk. μέμῡκε 'bellows' and γέγωνε 'shouts', or Ved. *ā́ha* 'says' and *nónāva* 'roars'. The

[262] Ved. *pāyáyati* itself, of course, presupposes an *i* -present **péh₃-i -/*ph₃ -i -*', but apart from the uncertain testimony of OCS *pьǫ* 'I drink' (< **pi̯ū/o -*) and OPr. 2 pl. impv. *poieiti* 'drink!' (< **pōi̯e/o -*), the evidence of the daughter languages suggests that this stem was lost within the common period, its place being taken by the familiar **pi -ph₃ -* (**pibe/o -*'). So too with the verb 'to steal': the underlying **téh₂ -i -/*th₂ -i -*'; was probably lost as a living present within the parent language and thus had no Hittite descendant.

[263] Compare the account given by Melchert (130), who links the retention of the **-i-* to consider-ations of accent and syllable structure.

[264] *Scriptio plena* spellings with *me -e -* are common in Old Hittite but extremely rare later. We will mostly write *mem -* in what follows.

[265] Oettinger' s inventory also includes the less well documented and etymologically opaque *walla/i -* 'praise' (490 f.), and *ḫaliḫla/i -* 'kneel' (484 f.), evidently a reduplicated form of the deponent *ḫali -* (3 sg. *ḫaliya*) 'id.'

root, which is obviously onomatopoeic, is better identified with the root of OCS *mъmati* 'stammer' and / or Ved. *mímāti* 'bellows' than with PIE **men-* 'think';[266] it is interesting to note that the perfect of Ved. *mā-* 'bellow' is *mimāya,* with an *i-* enlargement that recalls the *-y-* of *siṣáya,* GAv. *hišaiiā* 'holds bound' (: *sā-* 'bind', with a cognate *i*-present in Hitt. *išḫai-*). The stem of *mema/i-* is thus to be set up as **memóH-i- / *memH-i-*' or **méimoH-i- / *méimH-i-* (**móimoH-i- / *móimH-i-*), the latter with intensive reduplication.[267] Whatever the immediate preform, the accent came to be fixed on the reduplication syllable in Hittite, exactly as in the perfect *wewakki* (cf. ch. 2 n. 22).

Apart from the duratives in *-anna/i-*, which will be discussed separately, the remaining verbs of the *mema/i*-type are compounds or modelled on compounds. *uppa/i-* is obviously based on *pai-* 'give', with which it agrees in many of its forms (e.g. pres. 3 sg. *uppăi* like *pāi,* 1 pl. *uppiweni* like *pĭweni,* 3 pl. *uppianzi* like *pianzi*). *dāla/i-* is plausibly explained by Eichner (*apud* Oettinger, p. 488, n. 78) as a compound of *lā-* 'release' with the preverb *dā-*; unfortunately, however, the morphological properties of *dāla/i-* are not easily derived from *lā-*, which shows no sign of ever having had an *i-* present (see Oettinger 66 and *CHD* s.v.). Clearer again are *penna/i-* and *unna/i-*, both compounds of *nai-* 'lead'.[268] Uncompounded *nai-*, as will be seen in §115, rests on an ablauting aorist **noiH-/ *neiH-*. The plural forms of the simplex are thus historically based on the weak stem **nḗ-* < **neiH-*, which surfaces in 3 pl. *nē(y)anzi* and (with secondary *-ɑ-* from the 3 pl.) in 1 pl. pret. *neyawen* (NH). The compounds were treated differently: here there was no 'thematization' in the 1 pl., and **-ē̱-* was converted to **-ī-* (> *-i-* / *-i̯-*) by a sound law proper to internal syllables (cf. 1 pl. *penniweni,* 3 pl. *penniyanzi*).

Each in its own way, then, *mema/i-*, *uppa/i-*, *dāla/i-* (details unsure), and the compounds of *nai-* all acquired 3 sg. forms in *-ai* (*memai* < **-moH-i-ei; uppai* as in *pāi; pennai, unnai* as in *nāi*) and plural forms in *-i-/-i̯-* (*memianzi* < **-mH-i-* or **-miH-*; *uppianzi* as in *pianzi; penniyanzi, unniyanzi* < **-nḗ-*). On the basis of the 3 sg. in *-ai,* a new pseudothematic singular was constructed with 1 sg. pres. *-aḫḫi* (pret. *-aḫḫun,* impv. *-allu*) and 2 sg. *-atti,* the obvious model being

[266] The mainstay of the equation of *mema/i* - with Gk. μέμοθε, Lat. *meminī,* etc. is CLuv. *māmmanna* -, formerly thought to mean 'speak' (so Oettinger 486) but now known to mean 'look favourably at' (see Melchert 1988: 220). Even if the semantic match were acceptable, however, the formal difficulties standing in the way of a derivation of *mema/i* - from **mem(o)n* - would be insurmountable.

[267] Vedic has both an intensive participle *mémiat* - and a pluperfect *ámīmet,* perhaps standing for older **ámemet* (: intensive perfect **mémāya*).

[268] Here, for all practical purposes, also belongs *nanna/i* - 'drive', whether or not Kronasser's analysis (1966: 122) as a durative in *-anni/a* - is accepted.

supplied by the compounds of *dă-* 'take' (*pēdaḫḫi* 'I carry', *udaḫḫi* 'I bring', 2 sg. *-datti,* 3 sg. *-dai,* etc.). Later, in Middle and Neo-Hittite, the stem in *-ā-* was optionally extended throughout the plural, giving rise to forms of the type 1 pl. *memaweni* and 3 pl. *memanẓi*. Monosyllabic presents like *dai-*, *išḫai-*, *išpai-*, etc., had no part in these developments, possibly because the 3 sg. present ended in accented, and perhaps phonetically longer *-āi*.

§72. The characteristic 2, 3 sg. preterite forms in *-išta / -ešta* (*memišta, uppešta, dālešta* (also OH *tāliš*), *penništa*) call for a digression.[269] The superficial resemblance of the ending *-išta,* particularly in its sparsely attested 2 sg. reading, to the Latin 2 sg. perfect in *-istī* (e.g. *nocuistī* 'you harmed'), the Tocharian 2 sg. preterite in *-(ä)sta* (e.g. B *nekasta* 'you destroyed'), and the Vedic 2 sg. mid. *iṣ*-aorist in *-iṣṭhāḥ* and 3 sg. mid. precative in *-īṣṭa* (*ájaniṣṭhaḥ* 'you were born', *padīṣṭá* '(he) would fall'), has fuelled historical speculation since the decipherment of Hittite. In fact, however, *-išta* is an inner-Hittite or inner-Anatolian creation, bearing at most a typological relationship to the similar-looking endings of other IE languages.

The *-*s*- of the PIE *s*-aorist, which will be studied in detail in ch. 7, manifests itself in Hittite in two quasi-independent forms. One is in the familiar *ḫi*-conjugation 3 sg. preterite ending *-š,* historically going back to *-*s-t*. Despite its high profile in Hittite, this ending must have spread from the small nucleus of verbs that actually inherited an *s*-aorist from the parent language; the only certain example of such a verb is *nai-*, with 3 sg. pret. *naiš*. The other, usually overlooked, reflex of the *-*s*- of the *s*-aorist[270] is what we may call 'imperative' -š-—the -š- that appears in imperatives of the type 2 sg. mid. *nešḫut* (MH; later *naišḫut,* with analogical *-ai-*), 2 pl. mid. *naišdumat,* and 2 pl. act. *naišten,* byforms of 'regular' *neyaḫḫut,* **neyaddumat,* and *neyatten*. Sigmatic impera- tives of this kind are genetically quite distinct from the 3 sg. indicative *naiš*. While *naiš* goes back, via the analogical intermediate stage **noist* (§115), to a

[269] As Melchert and Kazuhiko Yoshida point out to me (p.c.), the philological evidence favours *-i-* as the original vowel in these forms, although spellings with *-e-*, and especially 'mixed' spellings of the type *me-mi-eš-ta* are found quite early. The inner-Hittite replacement of *-išta* by *-ešta,* and the kindred replacement of *-iš* by *-ep* in preterites of the durative type (3 sg. *iyanniš*), is clearly related to other cases of *-i-* : *-e-* confusion; see especially Melchert 1984: 97 f. and 149.

[270] The awkward phrase '*-*s-* of the *s*-aorist' is used here to distinguish the -š- of the forms under discussion from the present-stem formative -š- of verbs like *ganeš(š)* - 'find', *paḫš* - 'protect', and *išš(a)* - 'perform'. While there is some reason to believe that the *-*s-* of the various types of PIE *s*-presents and the *-*s-* of the *s*-aorist share a common origin in pre-PIE (cf. §§78 ff.), it must never be forgotten that they were synchronically distinct morphemes by the time the individual IE branches embarked on their separate histories.

PIE lengthened-grade 3 sg. *s*-aorist **nḗiH-s-t,* the imperatives *nešḫut, naišdumat* (for older **nešdumat*), and *naišten* (for older **nešten*) represent, as we shall see in §106, different analogical elaborations of a no longer extant '*si*-imperative' **nḗši* < **néiH-s-i* (= Ved. *néṣi* 'lead!'), with ordinary *e*-grade. 'Imperative' -š- enjoyed a mild productivity of its own in Hittite, spreading in particular from the 2 pl. imperative **nḗšten* (later remade to *naišten*) and its compounded forms in **-nḗšten* (> Hitt. *penništen, *unništen, nanniptен*) to other real and apparent *i*-presents, including (*inter alia*) *pai-* and *uppa/i-* (*pišten, *uppišten*), *ḫalzai-* (*ḫalzišten*), *dai-* (*daišten*), *dālai/i-* (*dālišten*), and *mema/i-* (*memišten*). Crucially, the fact that the 2 pl. imperative and 2 pl. preterite were otherwise identical in Hittite led to the further use of the new forms in *-šten* as preterite indicatives as well as imperatives. Given the nature of our Hittite sources, such forms are naturally rare, but *daišten* (OH) and *memišten* are directly quotable as preterites, and preterital **naišten* and **pišten* are presupposed by the back-formed 2 pl. presents *naiptani* (MH) and *pišteni*. The creation of 3 sg. *memišta* as the preterite corresponding to 3 sg. pres. *memai* (and of 2 sg. *memišta* as the preterite corresponding to 2 sg. pres. *mematti*) must be seen against the background of a linguistic system in which a sigmatic 2 pl. preterite (*memišten*) contrasted with a non-sigmatic 2 pl. present (*mematteni,* for older **memitteni*).[271]

The most likely immediate source of the 2, 3 sg. ending *-(i)šta* was the ablauting *hi*-verb *au-/u-* 'see' (Oettinger 82). This verb, which is a treasure trove of archaic apophonic and accentual features (cf. 1 pl. pres. *umḗni* vs. pret. *aumen,* 3 pl. pres. *uwanzi* vs. pret. *auir,* 3 sg. mid. impv. *uwaru*), is characterized by a 2 pl. with 'imperative' -š- (impv. *aušten* (NH), pret. *aušten* (NH), pres. *ušteni* (OH+)), a 2, 3 sg. pret. *aušta* (2 sg. MH; 3 sg. OH+), and—quite unexpectedly—an irregular *mi*-conjugation 3 sg. present *auški*. The prehistory of the form *auški* is instructive. Prior to the simplification of the cluster **-st* in word-final position, the present and preterite paradigms of *au-/u-* in the singular would have appeared as in Fig. 4.5 below. Under normal circumstances the 3 sg. present **aw-ḗ* would have given **awi,* while the 3 sg. preterite **au-s-t* would have given **auš*. But **aw-ḗ,* with its deviant syllabic structure, was remade within the prehistory of Hittite to the more transparent **austi* (> Hitt. *auški*), back-formed from the 3 sg. preterite **aust* on the model of *mi-* conjugation pairs like **esti* : **est,* **epti* : **ept,* **kwenti* : **kwent,* etc. An unlooked-for but important consequence of this development was the synchronic

[271] For the forms see *CHD,* s.v. *mema* -, *memi* -, *memiya* -. That *mematteni* /**memitteni* (pres.) : *memišten* (pret.) was the historically authentic pattern seems certain despite an isolated Middle Hittite instance of 2 pl. pres. *memišteni.*

reanalysis of the 3 sg. preterite **aust* as a *mi*-conjugation form. The attested reflex of **aust* in Hittite was thus not **auš* but *aušta,* with the final support vowel that *mi*-conjugation 3 sg. preterites regularly took on to 'protect' their final *-t* (cf. Hitt. *ēšta, ēpta, kuenta* < **est, *ept, *kwent*).[272]

FIGURE4.5

	present	preterite
1 sg.	**au-ḫai* (> later *ūḫḫi*)[a]	**au-ḫa* (> later *ūḫḫun*)
2 sg.	**au-tai* (> later *autti*)[b]	**au-ta*
3 sg.	**aw-ę*	**au-s-t*

With the establishment of *aušzi* and *aušta,* the preterite of *au-/u-* would have consisted of a 1 sg. *ūḫḫun* < **au-ḫa,* a 2 sg. **autta* < **au-ta,* and a 3 sg. *aušta.* This paradigm presented an anomaly: in every other case where Hittite had a 3 sg. preterite in *-ta,* the same form also served to mark the 2 sg. (3 sg. *ēpta* = 2 sg. *ēpta,* etc.; cf. Oettinger 8–9, n. 5). The inherited 2 sg. **autta* was accordingly replaced by *aušta*; a specific 'push' may have been provided by the semantically related *mi*-verb *ištamaš(š)-* 'hear', where both the 2 sg. and 3 sg. preterite ended in *-šta* for historically independent reasons.[273]

The newly established 2, 3 sg. *aušta* was now in a position to supply its ending to the formally similar *mema/i*-type. The proportion was

2 pl. impv. / pret. *auštен* : 2, 3 sg. pret. *aušta* : :

2 pl. impv. / pret. *memištен, penništен, uppištен,* etc. : *X,*

where *X* was solved as *memišta, penniša, uppišta,* etc., replacing older forms that probably ended in **-atta* in the 2 sg. and **-aš* in the 3 sg. The triumph of the new endings was complete; later instances of forms like the multiply attested Neo-Hittite 3 sg. *memaš* are secondary.

[272] The process is discussed by Melchert (175 f.), with literature.

[273] Whatever the antiquity of the 3 sg. *ēpta* = 2 sg. *ēpta* pattern in general, in *ištamaš* -, at least, the identity of the 3 sg. and 2 sg. was old. 3 sg. *ištamašta* was the normal *mi* -conjugation form with 'protected' **-t,* while 2 sg. *ištamašta* consisted of the inherited but synchronically opaque *mi* -conjugation 2 sg. in *-š (< *-s-s*) extended by the *ḫi* -conjugation ending *-ta.*

§73. By far the most numerous group of Hittite verbs with stems in *-a/i-* are the 'duratives' in *-anni/a-*, a class traditionally exemplified by *iyannaḫḫi* 'I start marching, get underway', 3 sg. *iyannai,* 3 pl. *iyanniyanzi,* supine *iyanniwan.* These forms are productively built to verbal stems, notably including thematic stems in *-(iy)a-*. *iyanna/i-* itself is based on the deponent *iya-* 'march, proceed'; other examples of the type include *ḫattanna/i-* (: *ḫatt-* 'chop'), *walḫanna/i-* (: *walḫ-* 'strike'), *laḫḫiyanna/i-* (: *laḫḫiya-* 'campaign'), *šipandanna/i-* (: *išpănt-* 'libate'), and *paršiyanna/i-* (: *paršiya-* 'break'). A more extensive collection, with accompanying functional and historical analysis, is given by Oettinger 1992 [1994]; see also Melchert 1998: 414 ff. As these and earlier studies make clear, the term 'durative' is purely conventional as a designation of the class. *iyanna/i-* itself has an ingressive rather than durative sense vis-à-vis the base verb *iya-*,[274] and there is no single semantic nuance that can be identified as characteristic of the type as a whole. Oettinger's proposed description of *iyanna/i-* and its congeners as 'intensive' (see n. 74) does little to explain the real value of these forms.

But while the precise function of the verbs in *-anna/i-* remains hard to pin down, the formal history of the type is not altogether intractable. The inflection is clearly athematic, pointing to a species of *i*-present rather than to a conventional *ie/o*-present of the kind seen in Gk. ὀνομαίνω 'name' or Hitt. *lamniya-*. The nasal in the suffix *-anna/i-* is consistently written double, showing that the *i*-element in the ancestral paradigm was added to a nasal + laryngeal cluster rather than to simple *-n-*. The assumption of a weak suffix-form *-nh_2-i-*, preceded by the stem vowel (Hitt.) *-ā-*, would explain the Hittite forms in *-anniwen(i), -anniyanzi, -anniwan,* etc. directly.[275] Yet the obvious next step—setting up a strong stem in *-$néh_2$-i-* to account for the singular forms—creates more problems than it solves. A pre-Hittite 3 sg. in *-$néh_2$-i-e(i)* would have led to a 3 sg. in unshortened *-a(n)nāi* and a *dai*-type paradigm, whereas the *iyanna/i*-type basically follows the inflection of *mema/i-* and *penna/i-*. We therefore have two choices: either to assume a secondary accent shift that took *iyannā́i* to *iyánnăi* or *íyannăi,* thus opening the way for the creation of a 1 sg. in *-aḫḫi* and 2 sg. in *-atti* on the basis of the 3 sg.; or to dispense with the assumption of a full-grade stem in *-$néh_2$-i-* altogether and explain the singular paradigm *iyannaḫḫi, -atti, -ai* as a back-formation from the plural, replacing earlier *iyanniḫḫi* (< *-nh_2-i-h_2ei), *-itti* (< *-nh_2-i-th_2ei),

[274] So Melchert (p.c.); cf. Oettinger 1992 [1994]: 140, with n. 18.

[275] For the phonology see §47. To be sure, it must be assumed that the laryngeal metathesis that would have been regular before consonantal endings (*-nh_2i-C - > *-nih_2-C -) was analogically suppressed under the influence of the 3 sg. and 3 pl., where the endings were vocalic.

*-*i* (< *-*nh*$_2$-*i*-*ei*) under the influence of *penna/i-*, *unna/i-*, and the *memai*-type in general. Favouring the second possibility is the fact that the 2, 3 sg. preterite of the *iyanna/i*-type ends in *-anniš* rather than the expected *-*anništa,* pointing to an inherited 3 sg. in *-*nh*$_2$-*i*-*s*-*t*.[276] Further support for a paradigm with non-ablauting *-*nh*$_2$-*i*- comes from the non-Anatolian languages, which have reflexes of *-*nh*$_2$-*i*- but not of *-*neh*$_2$-*i*-.

A deverbal suffix complex *-*nh*$_2$-*ié/ó*-, likewise of somewhat nebulous functional value, is well known from Indo-Iranian. On the Vedic side, the key forms are the eight presents *gṛbhāyá-* 'seize', *mathāyá-* 'steal', *pruṣāyá-* 'drip', *muṣāyá* 'steal', *śamāyá-* 'be active', *śrathāya-* 'loosen', *skabhāyá-* 'fasten', and *stabhāyá-* 'support', all of which are associated with class IX presents in *-nā́-* / *-nī-* (*gṛbhṇā́ti,* etc.). To this group can be added *aśāyá-* 'attain', if the contrast between *aśnóti* 'attains' and *aśnā́ti* 'eats' is secondary; and *damāyá-* 'subdue', which corresponds to the formal counterpart of a class IX present in Greek (δάμνημι 'id.'). Definite Iranian pairs of the same type are YAv. 3 sg. pres. *gəuruuaiieiti* (= Ved. *gṛbhāyáti*), OP 3 sg. impf. *agarbāya* beside YAv. *gərəβnāiti,* and YAv. 3 sg. impv. *mitaiiatu* (< **mitā̆ia-*; root *mit-* 'remain') beside 3 sg. impv. *miθnatu*.[277] Although a number of explanations have been proposed for the Indo-Iranian *gṛbhāyáti*-type, the only theory that satisfactorily accounts for the relationship of *gṛbhāyáti* to *gṛbhṇā́ti* is the old view of Saussure (1879: 251 f.) that *-āyá-* is the phonological reflex of *-*ǵh*$_2$-*ié/ó*—-i.e. the nasal stem itself suffixed by an apparently non-functional *-*i̯e/o*-.[278] Given the Hittite material, the obvious inference is that the *-*i̯e/o*- in question was not the 'ordinary' *-*i̯e/o*- of the normal presents in *-ya-* or the denominatives in *-ă̆-yá-*, but the bare element *-*i*- / -*i̯*-, thematized to *-*i̯e/o*- via the 3 sg. in *-*ǵh*$_2$-*i*-*é*.

Exactly *why* certain nasal presents of the type in *-*n(é)h*$_2$- should have had derived *h*$_2$*e*-conjugation *i*-presents beside them in pre-Indo-Iranian and pre-Anatolian is unclear. Possibly the reason had something to do with an iterative or durative—ultimately 'processual'—nuance originally imparted to the stem by the *h*$_2$*e*-conjugation endings (see §84). But however we interpret the

[276] With analogical extension to the 2 sg. Particularly striking is the contrast between *iyanniš,* etc. and the similar-looking but derivationally unrelated *penništa, unništa.* Inevitably, we also find analogical *penniš, unniš,* modelled on *iyanna/i-*.For the derivation *-anniš* < **(-V)-*nh$_2$-*i*-*s*-*t* compare *daiš* < (virtual) **dhéh$_1$-i-s-t*. These forms are alone sufficient to rule out the possibility that the *i*-forms in the paradigm of the *iyanna/i*-type are a secondary import from the *dai*-type, as maintained by Hajnal (1996: 287).

[277] Cf. Kellens 1984: 133 f., where other possible examples are also discussed.

[278] The phonology, of course, is assured by Ved. *jāyate* 'is born' < **ǵh$_1$-ié/ó* -. A connection between the -ā- of the *gṛbhāyáti* -type and the *-ā- of the Latin imperfect or the Baltic ā-preterite (as suggested e.g. by Kurylowicz 1928) is extremely improbable.

primitive role of the *grbhāyáti*-type in IE terms, there can be no doubt that it was a PIE formation. This is shown not only by the formal (and at least vaguely functional) correspondence between Indo-Iranian **-n̥h̯ie/o-* and Anatolian *-*nh$_2$i*-, but also by the existence of a small number of synchronically isolated *grbhāyáti*-presents elsewhere in the family. One of these is Toch. B 3 sg. *mäntaṃ,* pl. *mäntaññeṃ,* a class XII ('-*ññ*-') present built to the root *mänt*- 'hurt (act.); be upset (mid.)' (: PIE **menth$_2$*- 'agitate; churn'; cf. Ved. *mánthati* 'churns').[279] Here too belong the Greek examples ὑφαίνω 'weave' and ἰαίνω 'heat', which resemble *n*- or *r/n*-stem denominatives in form but are clearly not true denominatives in origin. Since pre-Gk. *-ανjω can apparently go back to *-*n̥h$_2$i̯e/o*- ("*-*n̥̄i̯e/o*-") as well as to *-*n̥i̯e/o*- (cf. Peters 1980: 80 n. 38), the obvious interpretation of these forms is as presents of the *grbhāyáti*-type. ὑφαίνω (< **ubh-n̥h$_2$i̯e/o*-) corresponds in principle to Ved. **ubhāyáti,* the theoretically expected counterpart in -*āyá*- to the twice attested class IX present *ubhnā́ti.* ἰαίνω (< **His-n̥h$_2$i̯e/o*-) probably belongs with Ved. *iṣ*- 'impel, set in motion', which makes a class IX present *iṣṇā́ti.*[280]

§74. Since neither Indo-Iranian nor Greek nor Tocharian offers any evidence for a full-grade suffix complex *-*neh$_2$-i*-, we can envisage an inflection like that shown in Fig. 4.6 for the PIE ancestor of the *grbhāyáti*-type.

FIGURE4.6

sg. 1	**ghr̥bh-n̥h$_2$-i-h$_2$é(i)*	pl. **ghr̥bh-n̥h$_2$-i-mé-*
2	**ghr̥bh-n̥h$_2$-i-th$_2$é(i)*	**ghr̥bh-n̥h$_2$-i-(t)é-*
3	**ghr̥bh-n̥h$_2$-i̯-é*	**ghr̥bh-n̥h$_2$-i̯-énti*

This paradigm, representing what we might call the 'PIE *grbhāyáti*-type', was essentially maintained in Hittite, save for the replacement of *-*anni*- by -*anna*- in the present singular (see above) and minor changes such as the substitution of 2 pl. impv. *iyanništen,* following *penništen,* for 'correct' **iyannitten.* The other

[279] Cf. K. T. Schmidt (1989: 312). The tantalizing possibility of a direct equation between Toch. B *mäntäññ* - and Ved. *mathāyá* - seems to be ruled out by the etymological non-identity of *math* - 'steal' (pres. *mathnā́ti, mathāyá* -) and *ma(n)th* - 'churn' (pres. *mánthati*). See the discussion in Mayrhofer, *EWAia* 298 f.

[280] The etymology, to be sure, has often been doubted, but is correctly upheld by García Ramón 1986: 502 f. Another possible Greek verb of this type is μαραίθω 'destroy', traditionally connected with μάρναμαι 'fight'.

languages developed thematic presents in *-*ǵʰ*$_2$*-ie/o-*; the most familiar example, of course, is Ved. *gṛbhāyáti* itself. Yet *gṛbhāyáti* and its congeners (*mathāyá-*, *pruṣāyá-*, *muṣāyá-*, etc.) tell only part of the story. Presents in *-*āi̯á-* are the best known, but not the only thematic reflex of the PIE *gṛbhāyáti*-type in Indo-Iranian; the other is the present type in *-*aṇi̯á-*, which now requires a brief discussion of its own.[281]

The expected Vedic present **iṣāyáti,* which might have been predicted as the *gṛbhāyáti*-type counterpart to *iṣṇáti,* is not in fact attested. Instead, we find the suggestively similar-looking present *iṣaṇyáti* 'id.', which is paralleled by nearly a dozen sparsely attested, exclusively Vedic forms: *bhuraṇyá-* 'be busy', *damanyá-* 'subdue', *dhiṣaṇyá-* 'offer', *huvanya-* 'call', *kṛpaṇyá-* 'desire', *pṛtanyá-* 'fight', *riṣaṇyá-* 'suffer injury', *ruvaṇya-* 'cry', *saraṇyá-* 'rush', *turaṇyá-* 'rush'. The lone Iranian example of the type is YAv. *zaraniia-* 'be irritated'. These forms are traditionally taken to be denominatives based on verbal abstracts in *-an-* (*-aṇ-*) or *-ana-* (*-aṇa-*)—an explanation which fails both because the postulated *n*-stems do not exist and because ɑ-stem nouns make denominatives in *-ăya-*, not *-ya-*. In fact, the Indo-Iranian *gṛbhāyáti-* and *iṣaṇyáti*-types are intimately related, as can be seen not only from the distributional connections of *iṣaṇyáti* itself, but also from the doublets *damāyá-* and *damanyá-* beside Gk. δάμνημι, and Ved. *hṛṇīté* (together with the peculiar *hṛṇāyá-* and *hṛṇīyá-*) 'be angry' beside YAv. *zaraniia-*.

The majority of *iṣaṇyáti*-type presents, however, are *not* associated with nasal presents. The most consistent derivational connections of *iṣaṇyáti-* presents are with oxytone thematic stems in *-á-* (either *tudáti*-presents or thematic aorists) and non-causative zero-grade presents in *-áya-* (the type *rucá-ya-*; cf. n. 25). Thus, for example, we find *bhurántu, -ánta* beside *bhuraṇyá-; huvé, huvéma, áh(u)vat,* etc. beside *huvanya-; kṛpate, akṛpanta, kṛpáya-*, etc. beside *kṛpaṇyá-; riṣat, riṣayádhyai,* etc. beside *riṣaṇyá-; ruváti,* etc. beside *ruvaṇya-; sarat, ásarat, saráya-*, etc. beside *saraṇyá-*;[282] *turá(n)t-, turáya-* beside *turaṇyá-*. Even *iṣaṇyá-* and *damanyá-*, which have clear historical links to nasal presents, have forms in *-á(ya)-* beside them: cf. *iṣe, iṣema, iṣanta, iṣáya-* (: *iṣ-*) and *damáya-* (: *dam-*). The natural inference is that the *iṣaṇyáti*-type had its origin in roots like *iṣ-, dam-*, and (IIr.) **ǰ́ḫ-* 'be angry', where there were *both*

[281] It is perhaps also worth mentioning a possible non-thematic reflex. In the 1 pl. and 2 pl. of the PIE paradigm, the sequence *-*ṇ*h_2*-i* - would regularly have undergone laryngeal metathesis, producing forms of the type 1 pl. **gṛbh-nih*$_2$*-mé* and 2 pl. **gṛbh-nih*$_2$*-té.* It is just possible that these forms survived—not within the paradigm of *gṛbhāyáti,* but as part of the paradigm of Ved. *grbhṇáti* itself, where *grbhṇīmá(ḥ), grbhṇīt(h)a,* with famously unexplained -ī- rather than *-ĭ- (< '*-*Ḫ* -'), became the normal forms. The caveat must be entered, however, that Vedic 'schwa lengthening' is not confined to nasal presents, and no theory that explains *grbhṇiá(ḥ),* but not, e.g., ptcp. *grbhītá* - 'seized' or 1 pl. *śíśīmaḥ* 'we sharpen', can be fully adequate. See especially Jamison 1988 and Praust 1998: 125 ff.

[282] Despite its unexpected full grade, Ved. *sára* - 'break loose' is a thematic aorist.

old nasal presents and stems in *-*á(ya)*-; and that from these cases *-anyá-* was extended by analogy to roots of the type *riṣ-* and *tur-*, where there were only stems in *-*á(ya)*-. The problem of the *-anyá-* suffix thus reduces to a single question: why did IIr. **iš-* and **źḫr-* make presents in *-*aṇiá-* < *-*u̯iá-*, with unexpected short *-*u̯-* in place of normal *-*ū̯-*; and why did IIr. **dam-* make *both* **damaṇiá-*, with short *-*u̯-, and* the regular *gr̥bhāyáti*-present **damāi̯á-*, with *-*ū̯-*? The answer appears to lie in an unrecognized Indo-Iranian sound law. Ved. *damanya-* and YAv. *zaraniia-* go back to immediate preforms **dm̥-u̯iá-* and **źḫr̥-u̯iá-*, respectively, both seemingly shortened from expected **dm̥-u̯iá-* and **źḫr̥-u̯iá-*.[283] It is thus extremely tempting to attribute the change from **dm̥-u̯iá-* to **dm̥-u̯iá-*, and from **źḫr̥u̯iá-* to **źḫr̥-u̯iá-*, to a regular phonological development—specifically, to a rule that shortened long syllabic nasals (or sonorants generally) after an immediately preceding syllabic sonorant (*-R̥₁R̥₂- > *-R̥₁R̥₂-). The survival or restoration of **damāi̯á-* beside **damaṇiá-* would then have been a response to analogical pressure from the main body of *gr̥bhāyáti*-presents, including *gr̥bhāyáti* itself. Yet the regularly shortened form **damaṇiá-* < **dm̥-u̯iá-* evidently remained sufficiently robust to help trigger the analogical creation of **išaṇiá-* via the proportion **damnáh-* : **damāi̯a-* : **damaṇiá-* : : **išnáh-* : **išāi̯a-* : *X* (= **išaṇiá-*). This was the key step; once established in the language, *iṣaṇyá-* naturally tended to be reinterpreted as a derivative of the oxytone thematic stem *iṣá-*, thus setting the stage for the creation of *riṣaṇyá-, turaṇyá-, kr̥paṇyá-*, etc. from the oxytone thematic stems *riṣá-, turá-, kr̥pá-*. In the end, the inherited suffix complex *-anyá-* lost all connection with its ancient derivational base and took on a life of its own.[284]

§75. The interim overview of PIE *i*-presents given in §67, which described both a 'normal' type with *e* : *zero* ablaut (**dhéh₁-i-* : **dhh₁-i-́* 'suck') and a Narten type with *ē : *ĕ ablaut (*spḗh₂-i-* : **spḕh₂-i-* 'be sated'), can now be supplemented by the more specialized PIE *gr̥bhāyáti*-type, derivationally based on nasal presents in *-*n(é)h₂-* and characterized by apophonically invariant *-*nh₂-i-* (**gʰr̥bh-n̥h₂-i-* 'seize'). Outside Anatolian, the *gr̥bhāyáti*-type is well represented only in Indo-Iranian, where, like all *i*-presents, it was absorbed into the swelling ranks of thematic presents in *-*i̯a-*.[285] But in its newly thematized form the type became

[283] The vocalization pattern is of course analogical, with *-*m̥* - and *-*r̥* - taken from the underlying presents **dm̥-ná-* - and **źḫr̥-ná-* -, respectively. The strictly regular forms would have been **dm-n̥iá-* - and **źḫr-n̥iá-* -.

[284] This explanation supersedes the account of the *iṣaṇyáti* -type given in Jasanoff 1983: 72 ff., where the relationship to the *gr̥bhāyáti* -type was misunderstood. The connection between Ved. *-anya* - and Hitt. *-anna/i* -, although differently analysed, is correctly upheld by Oettinger 1992 [1994].

[285] It must remain a task for the future to determine whether the *gr̥bhāyáti* -type played any role in the history of the ubiquitous presents in *-*n̥ie/o* - in Albanian.

productive, splitting into the *gṛbhāyáti*-type proper, which retained its etymological link to the presents of class IX, and the more evolved *iṣaṇyáti*-type, which spread from the root **iš-* itself to other roots with present or aorist stems in **-á-*. In Hittite the *gṛbhāyáti*-type became productive as well. Here it was transformed into the *iyanna / i*-type—a process marked by two major innovations:

(1) extension of the sequence **-nh₂-i-* to thematic stems in **-i̯e/o-* (cf. *laḫḫiyanna/i-* from underlying *laḫḫiya-*) and subsequent reanalysis of the thematic vowel as part of the suffix (*-anni-* < **-e-nh₂-i-*); and
(2) analogical replacement of the inherited singular paradigm in **-anniḫḫi* (pret. *-anniḫḫun*), **-annitti, *-anni* by *-annaḫḫi* (*-annaḫḫun*), *-annatti, -annai,* on the model of the compounds of *nai-*.

Informally speaking, the *iyannai*-type in Anatolian has much the same typological 'feel' as the *iṣaṇyáti*-type in Indo-Iranian: both formations are productive, or recently were; both have been transformed by sweeping analogical changes; and both have become completely detached, in synchronic terms, from ordinary nasal presents. However far it may have come from its PIE origins, however, the *iyannai*-type retains its *h₂e*-conjugation inflection. If only for this reason, it remains a precious link in the chain of evidence reaching back from our data to the verbal system of the protolanguage.

5 The *h₂e*-conjugation: Other Characterized Presents

§76. The *i*-extended stems that inflect according to the *ḫi*-conjugation in Hittite, and that inflected according to the *h₂e*-conjugation in PIE, are impressive in number and variety. Yet there is also significant evidence for other kinds of characterized *ḫi*- and *h₂e*-conjugation presents.

One such type is the reduplicated class represented by Hitt. *mimma-* (NH also *memma-*) 'refuse'. The position of this verb has been considerably clarified by Melchert's philological demonstration (1984: 98 ff.) that the vowel of the first syllable, here and in other verbs of the same structure, can only go back to PIE *-*i*-. This discovery rules out the possibility of an inherited reduplicated perfect **me-m* … and strengthens the case for the comparison, due originally to Sturtevant (1933: 133), of *mimma-* with Gk. μίμνω 'stand fast'. The phonological change of *-*mn-* to *-mm-* in Hittite is independently motivated; semantically, the development from 'stand fast' to 'stand firm' and 'refuse' hardly requires comment. There is thus good reason to believe that *mimma-* and μίμνω constitute an exact word equation. But μίμνω is no different from other reduplicated thematic presents in Greek, such as γίγνομαι 'become', ἵζω 'sit down', ἴσχω 'hold back', νῑσομαι (< * -νσ->) 'go away', *πίπτω* 'fall', and *τίκτω (< * -τκ-)* 'bring forth, beget'. The type is attested all over the family. ἵζω (< **sí-zd-e/o-*) has cognates in Ved. *sī́dati* (for *sīḍati < **sizdati*) and Lat. *sīdō*; γίγνομαι is cognate with Lat. *gignō* 'beget'.[286] Well-documented cases not found in Greek are **pí-bh₃-e/o-* (< **-ph₃-*) 'drink' (cf. Ved. *píbati,* Lat. *bibit,* OIr. *ibid*) and **stí-sth₂-e/o-* 'stand, take a stand' (cf. Ved. *tíṣṭhati,* YAv. 3 pl. *hištə̊ṇti,* Lat. *sistō,* OIr. *sissedar*)>.[287] Other examples, obviously archaic but confined to a single language, include Ved. ū́hati (< **vú-uh-* for **u̯ú-ugʰ-e/o-*) 'removes', *ī́jate* (< **h₂i-hₓǵ-e/o-*) 'drives', *píbdamāna-* (< **pí-pd-e/o-*) 'standing firm', Lat. *serō* (< **sí-sh₁-e/o-*) 'sow', and OIr.

[286] Best kept separate, on the other hand, is the Vedic reduplicated aorist *ájījanat* and its Avestan cognate *zīzana* -, which was secondarily reinterpreted as a present stem and provided with primary forms (3 pl. *zīzanəṇti*).

[287] See below for Gk ἵστημι.

ro icc (< *h_1í-h_1nḱ-e/o-*) 'reaches'. It is usually assumed that the thematic inflection of these forms, although secondary, dates back to the parent language in some instances—e.g. in the case of **sí-zd-e/o-* and **pí-bh$_3$-e/o-*.[288] The true picture, as we shall see, is more complicated.

It is a remarkable fact, never accorded the importance it deserves, that *all such thematic or thematized reduplicated presents reduplicate with* *-i- *rather than with* *-e-. It is not at all obvious why this should be so. The parent language clearly had athematic presents with both *i-* and *e*-reduplication. In Indo-Iranian, the only branch of the family where the two types can be easily distinguished, the most salient examples of the *e*-reduplicated type are Ved. *dádhāti* and *dádāti* (both = GAv. *dadāiti,* YAv. *daδāiti*),[289] which correspond to forms with etymological *e*-reduplication in Balto-Slavic (cf. Ch. 3 n. 8). Other Indo-Iranian examples of *e*-reduplication include e.g. Ved. *jáhāti* 'leaves' (= YAv. *zazāiti*; cf. Hoffmann 1968*c*), *bábhasti* (3 pl. *bapsati*) 'devours', and **rarāti* (2 pl. mid. *rarīdhvam,* etc.) 'gives'. In general, it is clear that in Vedic, at least, the type in *-*a-* (< *-*e-*) is in the process of losing ground to the type in *-*i-*. Thus, the middle corresponding to Ved. *jáhāti* is *jíhīte* 'departs'; *gā-* 'go' makes a present *jígāti* but retains the substantivized participle *jágat-* 'world';[290] *sac-* 'follow' has a reduplicated 3 sg. *síṣakti* (= YAv. *hišhaxti*) but a 3 pl. *sáścati,* no doubt influenced by the substantivized participle *saścát-* 'pursuer'.[291] In Greek, the replacement of *-*e-* by *-*i-* is no longer a tendency but an accomplished fact. Here *e*-reduplication has been restricted to the perfect and reduplicated aorist, while *all* reduplicated presents, whether thematic or not, have *-i-* in the reduplication syllable (cf. τίθημι, δίδωμι). The other IE languages retain only scattered traces of reduplicated presents; these too have *-i-*, and are almost invariably thematic.[292]

Since the relative proportion of *e*-reduplicated to *i*-reduplicated presents must have been greater in PIE than in any of the attested daughter languages, it is genuinely astonishing to discover that all the thematized reduplicated presents with any claim to antiquity—**sí-zd-e/o-*, **pí-bh$_3$-e/o-*, **stí-sth$_2$-e/o-*, and the others cited above—have *i*-reduplication. The only way to explain this

[288] Thus, e.g. the editors of *LIV*[2] (16 f.) distinguish between an *i* -reduplicated athematic ("**sti-stéh$_2$- / *sti-sth$_2$ -*") type, into which they put thirty-five 'certain' examples, with twelve more listed as doubtful; and an *i* -reduplicated thematic ("**si-sd-é/ó -*") type, into which they put seven certain examples, with two more listed as doubtful. The reason for the assignment of a particular stem to the one or the other class is not always easy to determine.

[289] Younger Avestan also has a thematized present *daδa* - (Kellens 1984: 189 ff.). This, however, is an inner-Avestan *Entgleisung,* in no way comparable to the genuinely old type represented by *hišta* - 'stand', the Avestan counterpart of Ved. *tíṣṭhati.*

[290] As seen correctly by Thieme (1929: 54).

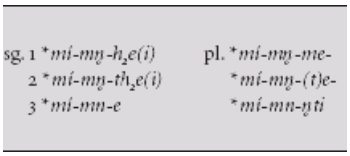
[291] Compare also the normalization of **vavášṭi* to *vivaṣṭi,* as mentioned in §26.

[292] Worth noting explicitly is Italic **dide/o* - 'give', which underlies Lat. *reddō* < **re-didō* and is attested outright in Vest. 3 sg. *didet.*

peculiarity is to suppose that the choice of *e*- or *i*-vocalism in the parent language was accompanied by a morphological difference of some kind that predisposed the type in *-*i*-, but not the type in *-*e*-, to undergo early thematization. In the context of the picture of the PIE verb developed in the preceding chapters, there is an obvious candidate for such a morphological difference: the contrast between the *mi*- and h_2e-conjugation modes of inflection. Lexical substance is added to this hypothesis by the etymological identity of *μίμνω* and the *ḫi*-verb *mimma*-.

§77. The PIE present **mí-mn-* 'stand firm' can accordingly be set up with the athematic h_2e-conjugation paradigm in Fig. 5.1:

FIGURE5.1



To the same type presumably also belonged **pí-bh$_3$-* < **pí-ph$_3$-* 'drink', **sí-ẓd-* 'sit down', **stí-sth$_2$-* 'stand (up)', **ĝí-ĝn(h$_1$)-* 'arise, be born', **h$_2$í-h$_3$ĝ-* 'drive', etc.—in short, *all* the reduplicated presents for which a significant pattern of thematization is observable in the daughter languages. Apart from its obvious utility as a bridge between Hittite and the rest of Indo-European, the choice of a h_2e-conjugation paradigm offers advantages at the individual word level. Thus, the root **steh$_2$-*, as we have seen, makes a thematic reduplicated present in Indo-Iranian (*tíṣṭhati,hišta-*), Latin (*sistō*), and (with the usual change to *-ie/o*-inflection) Old Irish (*·sissedar*). From a naïve point of view, it would seem almost axiomatic that the same kind of present should be reconstructed for **steh$_2$-* in the parent language as for **sed-* 'sit down', which is likewise represented by a thematic reduplicated present in three branches of the family (Ved. *sī́dati,* Gk. ἵζω, Lat. *sīdō*). Yet this is impossible under the standard hypothesis of a thematic stem **sí-ẓd-e/o-*, since Gk.ἵστημι (*-ā-*) 'set up, arrange', mid. ἵἵσταμαι 'take a stand, position oneself' shows that the present of **steh$_2$-* was still athematic in PIE. The h_2e-conjugation solution offers, as it were, the best of both worlds.

Under the reconstruction proposed above, both 'sit' and 'stand' were athematic, but with an invariant zero-grade stem and a 3 sg. in *-*e* that acted as a powerful inducement to thematization in the daughter languages. Thematization of 'stand' was resisted in Greek, where the h_2e-conjugation active inflection of *$steh_2$- was abandoned in favour of an athematic middle paradigm (3 sg. *$stí$-sth_2-*e* > *$stí$-sth_2-*toi,* 3 pl. *$stí$-sth_2-*nti* > *$stí$-sth_2-*ntoi*) before the normal thematic remodelling to *$stí$-sth_2-*e*/*o*- could occur. The active ἵστημι, with its transitive meaning, is not a direct reflex of the PIE h_2e-conjugation active *$stí$-sth_2-, but a back-formation from the middle ἵἵσταμαι.[293]

In Hittite the paradigm of **mí-mn-* was analogically reconstituted on the basis of the 3 pl. *mimmanzi,* leading to a stem *mimma*-, with 'thematic' *-a-* as, e.g., in *padd(a),*- 'dig'. The same treatment is found in other 'μίμνω-presents'. Hitt. *pippa*- (< **pí-pH*-) 'overturn' is attractively compared with the rare Vedic present *úd pipīte* (Br.) 'arises' by Hoffmann (*apud* Oettinger 498). A semantic bridge between the Hittite and Vedic forms is provided by the Hittite middle *pippattari* 'topples', to which *pippa*- serves as the oppositional transitive in much the same way that *kānki* 'hangs (tr.)' serves as the oppositional transitive to *gangattari* 'hangs (intr.)' (cf. §48). The parent language may have had both a transitive 3 sg. **pí-pH-e* (h_2e-conj.) and an intransitive **pí-pH-or* (middle).

Another inherited word equation probably lies behind *tittanu*- (also *titnu*-) 'install', evidently the productively formed causative to an underlying **titt(a)*- (< **$stí$-sth_2-*) 'stand'.[294] External comparanda are lacking for *šešḫa*- (representing OH **šišḫa*-) 'order', perhaps based on the unextended root **sh_2eh_1*- (**seh_2*-) 'bind'; and *lelḫuwa*- (**lilḫuwa*-) 'pour repeatedly', synchronically derived within Anatolian from the simplex *laḫu(wa)*- (< **leh_2-u*-; cf. §82) 'pour'.[295]

[293] Or alternatively, the h_2e -conjugation paradigm (3 sg. **$stí$-sth_2-e,* etc.) acquired transitive value by opposition to the new middle (3 sg. **$stí$-sth_2-toi,* etc.), and the active singular of the h_2e -conjugation paradigm was remade to **s(t)istāmi, *-stāsi, *-stāti* by back-formation from the active plural **s(t)istamen, *-state, *-stanti* (< **$stí$-sth_2* -). We need not make a choice; the essential point is that the full-grade active stem ἵστᾱ- is an inner-Greek creation.

[294] Otherwise Oettinger 350, but so already in principle Sturtevant 1933: 78 and *passim,* and Pedersen 1938: 183.

[295] *lelḫuwa*- can be seen as transitional to the kind of semi-productive reduplicated present seen in Hitt. *pariparai*-, CLuv. *ḫišḫiya*-, and Lyc. *pihije*- (cf. Ch. 4 n. 8). The latter forms, of course, are *ḫi*-conjugation *i*-presents like the simplex verbs on which they are based.Mention may also be made here of *šišd*- 'rest' (or rather 'grow'?), outwardly a *mi*-verb with 3 sg. *šišzi,* impv. *šišdu,* 2 pl. *šišten,* and verbal noun *šišduwar* (cf. Oettinger 216). Carruba's otherwise attractive derivation of this verb from a preform that would have to be set up as **sí-zd-e*/*o*- (*apud* Friedrich 1991: 454 f.) is out of the question morphologically: the absence of the thematic vowel in Hittite can hardly be due to 'Athematisierung' under the influence of *šeš-*/*šaš*- 'sleep', as suggested by Oettinger. The assumption of an originally athematic h_2e-conjugation paradigm makes the etymology easier. If the cluster **-zd*- was devoiced to *-st*- in Hittite—not an impossible treatment in a language where the PIE voicing contrast was reinterpreted as *fortis* vs. *lenis,* and where /s/ was notoriously prone to being 'strengthened' by a following consonant—then the *ḫi*-conjugation 3 sg. imperative **sizd-u* would have given **sistu,* which could easily have been resegmented as a *mi*-conjugation form **sis-tu*. This could in turn have become the basis for a new 2 pl. impv. **sis-ten* (Hitt. *šišten*), a 3 sg. **sis-ti* (Hitt. *šišzi*), etc. Alternatively, **sizd*- + *-ten* could have yielded *šišten* directly. The case is intriguing but undecidable—especially since the root etymology is in the last analysis uncertain.

If the above analysis is correct, PIE had at least two kinds of non-intensive reduplicated presents: (1) the *e*-reduplicated type of Ved. *dádhāti* (< **dhé-dheh₁-ti*) and *dádāti* (< **dé-deh₃-ti*), which some scholars reconstruct with *o*-grade in the active singular; and (2) the *i*-reduplicated *h₂e*-conjugation type of Gk. μίμνω and Hitt. *mimma-*. It is not at all clear whether a third type must be assumed as well.[296] In Greek, the *i*-reduplication of the μίμνω-type spread to all reduplicated presents; there is no need to posit a '*sti-stéh₂-ti*-type' simply to account for the *i*-reduplication of e.g. δίδημι 'bind', πι[μ]πρημι 'burn', or—still less—ἵστημι itself. It is only in Sanskrit and Avestan that we find *i*-reduplicated '*mi*-conjugation' presents distinct from the other two types. But even here at least some instances of *i*-reduplication are known to have replaced older reduplication with *-e-* (see above), and it is by no means self-evident that the rest cannot be explained in the same way. The problem clearly requires further study.[297]

§78. Closely related to the μίμνω-type is the Hittite iterative class in *-šš(a)-*. Unlike the highly productive iteratives in *-ške/a-*, the iteratives in *-šš(a)-* are a closed set, consisting only of *ḫalzišša-* (later *-ešša-*) 'call' (: *ḫalzai-*), *īšš(a)-* (later *ēšša-*) 'perform' (: *ie-/iya-* 'make'), *šišša-* 'impress' (: *šai-* 'release'), and *warrišša-* (:CLuv. **warri(ya)-* 'come to the aid of'; cf. Starke 1990: 155 f., Melchert 79). Here too belong Pal. *pīša-* 'give' and the common Luvian type in *-(š)ša-* (e.g. *pipišša-* 'give repeatedly', *tarmišša-* 'nail down', *tarpaša-* 'substitute, exchange').

As with any sigmatic category of unclear affinities, it is essential to begin by reviewing what we know about the inventory of formal types in the parent language. The sigmatic verbal formations reconstructible for PIE are notoriously varied. Apart from the *s*-aorist, which will be discussed in Ch. 7, we must reckon with at least the following kinds of inherited *s*-presents (cf. Jasanoff 1988*a*):

[296] A quite distinct formation, of course, was the reduplicated aorist. The familiar variety was thematic, with *e* -reduplication and zero grade of the root (cf. Ved. *vóca* - = Av. *vaoca* - = Gk. *(f)*)εἶπε/ο- 'say').

[297] Unbiased further study. There are few places in the study of the IE verb where the tendency to construct ideal types—with *i* - or *e* -reduplication, with *e* -, *o* -, or zero grade of the root, with accent on the reduplication syllable, root, or endings—bears as little relation to the actual data as here.

(1) An athematic ‘Narten’ type with **ē* : **ĕ* ablaut; representatives include Hitt. *ganēšzi* ‘recognizes’ (< **ĝnḗh$_3$-s-ti*; cf. Toch. A *kñas-* ‘find one's way’, Arm. aor. 1 sg. *caneay* (< **cn̥nīs(a)-*) ‘I knew’), the Baltic future (type Lith. 3 p. *duõs* ‘will give’; original 3 pl. **dúosinti* < **dō-s-n̥ti*),[298] the Italic *s*-future (type Osc. *fust* ‘will be’, Lat. *faxō* ‘I will do’ for **faksmi*), and probably the Old Irish unreduplicated *s*-future (type 3 sg. *reiss, ré* ‘will run’).

(2) A vestigial ‘*mólō*’ type with **o* : **e* apophony; representatives include the presents **h$_2$u̯óg-s-* / **h$_2$u̯ég-s-* ‘grow’ and pre-Greek **g^{u}ól-s-* / **g^{u}él-s-* ‘want’ (§49).

(3) A thematic type with *e*-grade of the root; the only certain representative is the Greek future, with its well-known preference for deponent inflection (type ὄψομαι ‘I will see’, ἀκούσομαι ‘I will hear’, γράψω ‘I will write’, etc.).

(4) A thematic *i̯e/o*-extended type; representatives include the Indo-Iranian future in *-*si̯a-* (type Ved. *vakṣyā́mi,* GAv. *vaxšiiā* ‘I will say’), the participle of the Lithuanian *s*-future (type *dúosiant-* ‘about to give’), and the isolated OCS adjective *byšǫšt-* ‘about to be’.

(5) An *i*-reduplicated thematic type with zero-grade of the root; representatives are the Indo-Iranian desiderative (type Ved. *cíkitsa-* ‘desire to know’, YAv. *irīrixša-* ‘desire to leave’) and the Old Irish reduplicated future (types 3 sg. *gigis, gig* ‘will pray’ < **g^{w}i-g^{w}ed-s-*, *célaid, céla* ‘will conceal’ < **ki-klā-s-*, etc.).[299]

To these can be added the presents in *-*sk̑e/o-*, an etymologically composite morpheme consisting of *-*s-* and an otherwise obsolete thematic suffix *-*k̑e/o-* (cf. Gk. τήκω (< *τā-) ‘melt’?). Individual PIE stems in -*sk̑e/o-* patterned as ordinary characterized presents, as e.g. in **pr̥(k̑)-sk̑é/ó-* ‘ask’ (= Ved. *pṛ́cchati* (aor. 3 sg. *áprāṭ* < **prēk̑-s-t*), Lat. *poscō* ‘demand’) and **h$_2$is-sk̑é/ó-* ‘seek’ (= Ved. *icchā́ti* (aor. 3 sg. *aiṣīt*)); later creations of the same type are Ved. *gácchati,* Av. *jasaiti* ‘goes’ (< **g^{u}m̥-sk̑é/ó-*; aor. **g^u(e)m-*), Gk. θνῄσκω ‘die’ (aor. ἔθανον), and Lat. *crēscō* ‘grow’ (perf. *crēui*). Productive elaborations of *-*sk̑e/o-* include (*inter alia*) the Latin inchoative presents in *-*ēscō* (e.g. *rubēscō* ‘turn red’, *calēscō* ‘become warm’), the Greek (Ionic) iterative imperfects in -σκε, -σκον (e.g. φέρεσκε

[298] The 3 pl. in *-*inti* < *-*n̥ti,* from which was extracted the theme vowel *-*i* - (cf. 1 pl. *dúosime,* 2 pl. *dúosite,* etc.), was subsequently replaced by the etymological 3 sg. form, as generally in Baltic. Lith. 3 p. *duõs* goes back to **dōsti,* with apocope of the final *-*i* and simplification of the resulting final cluster. The loss of final *-*i,* although not phonologically regular in disyllabic forms like **dōsti,* was regular in longer words; cf. §40, n. 64.

[299] The earlier thematic inflection of the Old Irish reduplicated future formations is shown by the loss of intervocalic *-*s* - in the type *célaid* < *-*āseti.* In the type *gigis,* the expected **gigsid* < **g^{w}ig^{w}esseti* < *-*ed-seti* was analogically replaced by a form modelled on the 3 sg. of the *s* -preterite.

'used to carry', ὀλέσκετο 'would perish'), the Hittite iteratives in *-šḱe/a-* (e.g. *akkuškizzi* 'drinks (repeatedly)', *uiškitta* 'comes (repeatedly)'), and the Tocharian B class IX causatives in *-sk-* (e.g. *śarsäsk-* 'proclaim' (: *kärs-* 'know'), *stamäsk-* 'put' (: *stäm-* 'stand')).

As is clear from these examples, presents in **-s-* and **-sḱe/o-* have a wide range of meanings—desiderative/future, inchoative, iterative, and causative. The desiderative sense, which is most pervasive, is also the likeliest to be original. A desiderative form meaning 'be disposed to be or do X' (or perhaps, with a conative nuance, 'be intent on becoming or doing X') could easily have acquired the consuetudinal value 'be accustomed to be or do X', from which the development to a full-fledged iterative ('does X repeatedly') would have been a short step, particularly in past-time contexts. Similarly, in verbs potentially denoting a change of state, the sense 'be disposed to become X' would often have been pragmatically indistinguishable from the meaning 'be in the initial stages of becoming X', which would have provided a natural bridge to the inchoative function. The causative value of *sk*-presents in Tocharian (and in isolated forms elsewhere; cf. Gk. πιπῑ́σκω 'cause to drink') is probably an outgrowth of the iterative sense, just as seems to have been the case in the PIE iterative-causatives in **-éie/o-*. In the latter forms, the transitive active 'causative' was originally an *Oppositionsbildung* to the intransitive middle 'iterative'; a transitive active like Gk. φοβέω 'put to flight' probably arose as a back-formation to φοβέομαι 'flee affrighted' (: non-iterative φέβομαι 'id.'). There is every reason to suspect that the prehistory of the Tocharian *sk*-causatives was the same.

The original shape of the sigmatic element in these forms was **-h_1s-*. The laryngeal is still detectable in productively built futures and desideratives to roots ending in a sonorant, as e.g. in Ved. *kariṣyánt-* 'about to do' vs. *vakṣyánt-* 'about to say', *cíkīrṣati* 'desires to do' (*-īr-ṣ-* <*-r̥̄-r-ṣ- < *-r̥-h_1s-) vs. *vívr̥tsati* 'desires to turn', Gk. τενέω 'I will stretch' (< *-εσω < *-h_1s-e/o-) vs. γρᾰ́ψω 'I will write',[300] and OIr. *célaid* (< *ki-klā-s- < *-kl̥-s- < *-kl̥-h_1s-) vs. *gigis*. After stops and **-s-* there is no trace of the laryngeal—an absence most easily accounted for, as we have already seen, by assuming that **-h_1-* was lost between obstruents by an inner-IE sound change (cf. Ch. 3 n. 37).[301] In *sḱe/o*-presents the

[300] Note the absence of a laryngeal reflex after the *o* -grade of Gk. βούλομαι < *βo λ-σ- —a nice example of Saussure's law of laryngeal loss (cf. §49, with nn. 28 and 29).

[301] The alternative to this analysis, of course, is the common view that the laryngeal associated with the **-s* - of the desiderative was not an organic part of the suffix at all, but a secondary accretion from roots that ended in **-h_1* -. This, however, does not seem very likely. There are no obvious candidates for the nucleus of roots in **-Rh_1* - from which the laryngeal might have spread. While the early IE languages certainly inherited verbs like **ĝenh$_1$* - 'be born, arise', **ǵemh$_1$* - 'vomit', **$h_2$enh$_1$* - 'breathe', **ǵerh$_1$* - 'say', and **terh$_1$* - 'bore', neither these nor any other roots in **-h_1* - would have been so closely associated with desiderative and/or future meaning that speakers would ever have been likely to mistake the final laryngeal for a constituent of the *s* -suffix. Besides, Indo-Iranian, Greek, and Celtic agree so precisely on the distribution of the laryngeal, restricting it to post-sonant position but employing it before both **-s-e/o* - and **-s-ie/o* -, and in both 'vocalizing' (*kaṛ̥ṣáti,* τενε̱[σ]ω) and 'lengthening' (*cikīr̥ṣati,* **kikīaseti*) environments, that it is almost inconceivable that this distribution could have come about any later than PIE itself. Once we decide to assign the **-s* - : **-h_1s* - alternation to the parent language, the choice between positing a sound law (**-Th_1T* - > **-TT* -) or assuming a misparsing of **ĝenh$_1$-s* - as **ĝen(h_1)-h_1s* - is simply a matter of preferring one internal reconstruction to another. The phonological explanation is much the simpler of the two, and is independently useful in other ways.

*-h_1- was lost even after sonorants; we thus find forms like Ved. *gácchati* and *r̥ccháti* 'goes' for theoretically expected **gā́ñchati* (with **gāñch-* < **g$^{u̯}$m̥̄sḱ-* < **g$^{u̯}$m̥h$_1$s-ḱ-*) and **ūrcháti* (with **ūrch-* < **h$_3$r̥̄sḱ-* < **h$_3$r̥-h$_1$s-ḱ-*). It is hard to tell whether the failure of the laryngeal to surface in these cases is due to analogy with obstruent-final roots, or to a further sound law that deleted *-h_1- before the cluster *-*sḱ*- even after liquids and nasals.[302]

§79. The principle that determined whether a given *s*-present would conform to the Narten, *molō*-, thematic, *i̯e/o*-, or reduplicated type in the parent language is not known. Certainly it would be rash, given the nature of the data, to attempt to correlate the five types listed above with specifically desiderative, future, inchoative, or iterative meaning. What seems likelier is that the enlargement *-*(h$_1$)s*- was added to roots to give them a distinctive—originally desiderative—semantic nuance, and that the *s*-enlarged root then formed a present according to the complex rules that governed the formation of PIE present stems in general. Thus, for example, roots that made Narten presents may have favoured Narten *s*-presents for their desideratives; roots that made reduplicated presents may have favoured reduplicated desideratives; and so on.[303] This is merely a theoretical possibility; the original situation is rendered almost impenetrable by the fact that the daughter languages all eventually favoured one, or at most two, of the sigmatic present formations to the near-exclusion of the others. What we can be sure of is that the parent language had a considerable variety of *s*-presents, and that any or all of them could in principle be reflected in an individual branch of the family such as Anatolian.

Hittite in fact preserves traces of several sigmatic formations. *ganēšš*- 'recognize', is a representative of the Narten type, pointing to an original stem

[302] Note that the common 'fientive' presents in *-*eh$_1$-(h$_1$)s*- and *-*eh$_1$-(h$_1$)sḱe/o*- (Hitt. -*ēšš*-, Lat. -*ēscō*; see below) would have been a conspicuous class of forms where the surface sequence *-*h$_1$s(ḱe/o)*- demanded the synchronic analysis *-*h$_1$-s(ḱe/o)*-—thus encouraging any tendency that late PIE speakers may have had to excise the laryngeal from forms where it was not clearly assignable to the root.

[303] One of the more suggestive correlations of this kind involves the Old Irish unreduplicated *s*-futures *sess*- (: *saidid* 'sits'), *ress*- (: *rethid* 'runs'), and *tess*- (: *techid* 'flees'), which are apparent reflexes of the Narten *s*-present type. The Narten affinities of the root **sed*- are well known; note also the lengthened-grade perfects associated with *rethid* (3 sg. *ráith* < **rōt-e*) and *techid* (*táich* < **tōk-e*).

*$\hat{g}n\bar{e}h_3$-s- / *$\hat{g}n\check{e}h_3$-s-. A productive outgrowth of this formation is the 'fientive' class in -$\bar{e}$šš- (e.g. *šalleš̲zi* 'grows great', *tepaw$\bar{e}$s̲zi* 'becomes small'), which shows the addition of *-(h_1)s- to the stative / inchoative stem in *-eh_1-; the parallel type in *-s*k*e/o- is found in the Latin inchoatives in -$\bar{e}$sc$\bar{o}$ (cf. Watkins 1971: 71 ff.). *pāš-* 'swallow', on the other hand, appears to rest on a *molō*-type *s*-present *poh_3-s- / *peh_3-s-.[304] *paḫ(ḫaš)š-* 'protect' (< *peh_2-s-) is exclusively deponent in the oldest Hittite (1 sg. *paḫḫašḫa,* 3 sg. *paḫša(ri),* etc.), and could therefore theoretically be assigned to either the Narten type (*p$\bar{e}h_2$-s- / *p$\check{e}h_2$-s-) or the *molō*-type (*poh_2-s- / *peh_2-s-).[305]

§80. After this extended but necessary digression, we may return to the iteratives *ḫalz̲iššа-*, *īšš(a)-*, *šiššа-*, and *warriššа-*. Within this group, the best point of departure is clearly *īšš(a)-*, both because it is by far the best attested such form, and because its phonological distance from the corresponding non-iterative *ie-/iya-* makes it the most likely to preserve archaic features. The underlying root is PIE *$H\underset{\wedge}{i}eh_1$- 'throw, set in motion', well known from Gk. ἵημι 'put forward, throw' and Lat. *iaciō* 'throw'.[306] The simple present *iez(z̲)i* 'makes, does' is a back-formation from the root aorist *$H\underset{\wedge}{i}éh_1$-t* (= Gk. ἧκα), exactly comparable to *t$\bar{e}$z̲z̲i* 'says' < *$dhéh_1$-t*.[307] The basically non-thematic iterative *īšš(a)-* must go back to an athematic *s*-present based on the same root; the problem is to determine what kind of athematic present would have yielded the *hi*-verb *īšš(a)-*. The possibility of a Narten stem *$H\underset{\wedge}{i}i\bar{e}h_1$-s- / *$H\underset{\wedge}{i}eh_1$-s-, which would have yielded a *mi*-verb *(i)$\bar{e}$šš- or *(i)$\bar{e}$šš- / *iyašš-, can safely be rejected. So can a *molō*-type *s*-present *$H\underset{\wedge}{i}oh_1$-s- / *$H\underset{\wedge}{i}eh_1$-s-, which would first have given Hitt. *iyāšš- / *(i)$\bar{e}$šš-, and then probably a partially levelled *iyăšš- (like *kăn*k-*) or a wholly levelled *iyašš(a)- (like *mall(a)-*). Thematic *$H\underset{\wedge}{i}eh_1$-s-e/o- and *$H\underset{\wedge}{i}eh_1$-s-i̯e/o- (types 3 and 4 above) can obviously be excluded as well. There remains only type 5—the *i*-reduplicated thematic class represented by Ved. *cíkitsati*. The *cíkitsati*-type is in every formal respect, including the position of the accent on the reduplication syllable, the sigmatic counterpart of the μίμνω-type. The natural inference is that, like

[304] *Pace* Oettinger 435 f., an *s* -aorist is out of the question; as will be seen in Ch. 7, the classical *s* -aorist did not yet exist when Anatolian split off from the rest of Indo-European.

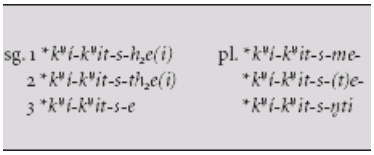
[305] The common 2 sg. impv. *paḫši* does not bear on the question of conjugation membership; see §106.

[306] The laryngeal is needed to account for the Greek rough breathing; bare *i̯-, as shown by Jochem Schindler in his Collitz lecture at the 1986 Linguistic Society of America Summer Institute, would have given Gk. ζ-. The preservation of initial *i̯- before *-e* - in Hitt. *ie* -, where it would normally have been lost, could either be due to the laryngeal or, as suggested by Melchert (129), to analogy with the weak stem *i̯ă-.

[307] The same *$H\underset{\wedge}{i}éh_1$-t(i)* and *$dhéh_1$-t(i)* are nicely preserved as *adi* 'makes' and *tadi* 'puts' in Lycian.

μίμνω and its congeners, *cíkitsati* rests on a reduplicated h_2e-conjugation present (Fig. 5.2):

FIGURE5.2



Just such a reduplicated sigmatic paradigm, as we shall see, will also account for the forms of Hitt. *īšš(a)-*.[308]

A pre-Hittite *cíkitsati*-type present of the root *$H\underset{\wedge}{i}eh_1$- could be set up in a number of ways, depending in part on the identity of the initial laryngeal. Probably the simplest option—and compatible with any laryngeal—would be to assume that the cluster *$H\underset{\wedge}{i}$- was first simplified to *$\underset{\wedge}{i}$- in initial position, and that a reduplicated stem *$\underset{\wedge}{i}i$-ih_1-s-, parallel to *k^{μ}í-k^{μ}it-s-, was then created on the basis of the resulting synchronic root *$\underset{\wedge}{i}eh_1$-. Alternatively, we could start from *$h_2\underset{\wedge}{i}i$-h_3ih_1-, with complete reduplication of the initial cluster and subsequent loss of *h_3- before *-$\underset{\wedge}{i}$- and medially; or from *h_3í-h_3ih_1-, if we assume that *h_3 was lost in initial position; or from *$\underset{\wedge}{i}i$-h_3ih_1-, with reduplication of the second member of the cluster only; or from *$h_2\underset{\wedge}{i}i$-h_1ih_1-, *h_1í-h_1ih_1-, or *$\underset{\wedge}{i}i$-h_1ih_1-, if we accept the possibility of a root with both initial and final *h_1. In any case, the form that emerged was *$\underset{\wedge}{\acute{i}}i$-s- or *$\acute{\underset{\wedge}{i}}$-s-, with an accented *-$\acute{\text{ī}}$- that resulted from contraction of the *-*i*- of the reduplicating syllable with the *-ī- (< *-ih_1-) of the zero-grade root. This vowel is what we actually find, written with *scriptio plena,* in OH 3 sg. *īššai,* 2 pl. *īšt$\bar{e}$ni,* 3 pl. pret. *īššer,* and 2 pl. impv. *īšte*[*n*]. The interesting failure of the 2 pl. forms *īšt$\bar{e}$ni* and *īšten* to share in the 'thematization' of the rest of the paradigm (3 sg. *īššai,* post-OH 1 sg. *iššaḫḫi* (NH *ešša-*), 2 sg. *iššatti,* etc.) is a feature that will be explained in Ch. 7 n. 21.

Of the three remaining iteratives in *-šš(a)-*, *šišša-* and *ḫalzišša-* are built to *i*-presents of the *dai*-type, and the third, *warrišša-*, gives evidence of originally having formed a *dai*-present as well. The most straightforward of these is

[308] A formal connection between *īšš(a)* - and the Indo-Iranian desiderative has been suggested before, though against the background of very different assumptions. See Oettinger 510.

šišša-, which can be explained in either of two equally plausible ways:

(1) As the regular reduplicated *s*-present of the simple (non-*i*-extended) root **seh$_1$-*. A preform **si-sh$_1$-s-*, with the normal loss of **-h$_1$-*, would have given *šišš-* directly.[309]

(2) As a dereduplicated form of **šišišš(a)-* (< **sí-sh$_1$i-s-* or **sí-sih$_1$-s-*), built to the *i*-extended root form **seh$_1$-i-*. Since verbs of the *dai*-type often had reduplicated (presumably expressive or 'intensive') byforms (cf. Lyc. *pibije-* beside Hitt. *pai-*, Luv. *ḫišḫiya-* beside Hitt. *išḫai-*, etc.), it would have been very natural for a reduplicated iterative of the type **pipišš(a)-* 'give repeatedly' (= Luv. *pipišša-*) to be synchronically reanalysed as a derivative of reduplicated **pipai-* (= Lyc. *pibije-*) rather than of unreduplicated **pai-*. This would have opened the way for the creation of a new **pišš(a)-* (> Pal. *pīša-*?) to serve as the iterative to **pai-*, and (*mutatis mutandis*) of a new **šišš(a)-* to serve as the iterative to **šai-*.

There remain only *ḫalzišša-* and *warrišša-*. *ḫalzišša-* stands in the same relation to *ḫalzai-* as *šišša-* to *šai-*; the simplest explanation would be via a proportion *šai-* : *šišša-* : : *ḫalzai-* : *X,* where *X* was solved as *ḫalzišša-*. The case of *warrišša-* is more complicated, largely because the form of the underlying simplex is uncertain. Melchert (78), citing OH 3 pl. pret. *ūrrier* and HL. 3 sg. pres. *wa + ra/i-ya-ya,* sets up an *i*-present **u̯érh$_1$-i- / *u̯rh$_1$-i-'*. Since the *i*-enlargement was regularly accompanied by state II of the root, however (see §64), it is far preferable to assume a paradigm **u̯réh$_1$-i-e(i)* : **u̯rh$_1$-énti,* with iterative **u̯u̯rh$_1$-i-s-*.[310] These forms, allowed to develop undisturbed, would have yielded Hitt. 3 sg. **w(a)rāi,* 3 pl. **ūrriyanzi,*[311] and iterative **wiwarrišš(a)-* —none of which, to be sure, are directly attested. But starting from the plausible assumption that such a paradigm existed, the attested *warrišša-* could be explained either as a dereduplication of **wiwarrišš(a)-*, or as the productively formed iterative, parallel to *ḫalzišša-*, of an analogically regularized **warrāi* : **ūrriyanzi.*

The four Hittite iteratives in *-šš(a)-*, and several of their obvious Luvian and Palaic counterparts, can thus be satisfactorily explained on the basis of a

[309] Under this scenario the geminate *-šš -* would be organic, the product of two etymological *s's* in contact. The *-šš -* of *išš(a) -* and the other iteratives in *-šš(a) -*, on the other hand, is either an effect of the preceding laryngeal, or—likelier in my opinion—the result of analogical generalization from anteconsonantal position, where 'gemination' (i.e. retained voicelessness of the **-s -*) was regular. The choices are discussed by Melchert (78 f.).

[310] For the etymology compare perhaps Gk. εὑρίσκω 'find', perf. εὕρηκα (< **u̯e-u̯rē -*), OIr. pret. pass. *fo fríth* 'was found'; the semantic evolution would have been from 'find' to 'come to the aid of'.

[311] With the regular change of word-initial and postconsonantal **wr* to *ūr* ; cf. Melchert 132.

reduplicated *h_2e*-conjugation paradigm. It must remain a task for the future to determine whether *all* the Luvian and Palaic iteratives in *-šša-* and *-ša-* can be accounted for in this fashion, or whether another, morphologically distinct *s*-formation played a role in the history of iteratives in these languages.

§81. The last major group of *ḫi*-conjugation verbs with etymological ties to a group of PIE characterized presents is the denominative factitive type represented by *newaḫḫ-* 'make new' (: *nēwa-* 'new'). The class is productive; other examples are *ḫappinaḫḫ-* (: *ḫappinant-* 'rich'), *manninkuwaḫḫ-* (: *manninkuwa(nt)-* 'short, near'), *maršaḫḫ-* (: *maršа-* 'unholy'), *šannapilaḫḫ-* (: *šannapiliḫḫ-* 'empty'), *šuppiyaḫḫ-* (: *šuppi-* 'pure'), *dannattaḫḫ-* (: *dannatta-* 'empty'). Internal evidence shows that these forms were originally associated with the-matic adjectives of the type *nēwa-, maršа-*, and *dannatta-*, and only later came to be built to other kinds of nominal stems (cf. Oettinger 240). The synchronic suffix *-aḫḫ-* is thus interpretable as **-e-h_2-*, where **-e-* represents the thematic vowel. Although older linguistic discussions routinely quote a 1 sg. '*newaḫḫmi*' and a 3 sg. '*newaḫzi*', the original *ḫi*-conjugation membership of *newaḫḫ-* and the class as a whole is no longer in doubt.[312]

The obvious extra-Anatolian comparanda of the verbs in *-aḫḫ-* are the *ā*-factitives of other IE traditions, especially Latin (*sōlāre* 'make solitary' : *sōlus* 'solitary'), Old Irish (*móraid* 'magnifies, praises' : *mór* 'great'), and Germanic (OHG *heilagōn* 'sanctify' : *heilag* 'holy').[313] The connection is underscored by the well-known equation of *newaḫḫ-* with Lat. *(re)nouāre* 'renew', Gk. νεάω 'plough up anew', and OHG *niuwōn* 'make new'—a comparison which remains impressive despite the synchronic association of νεάω with νεϊός 'new-ploughed land' (< **neu̯i̯ió-*), and the secondary reformation of OHG *niuwōn* on the basis of the productive Germanic word for 'new' (< **neu̯(i̯)io-*). In the context of our emerging picture of the IE verb, the historical interpretation of these facts is clear: the parent language had a *h_2e*-conjugation present **néu̯e-h_2-* 'make new', with a 3 sg. **néu̯e-h_2-e* and 3 pl. **néu̯e-h_2-n̥ti*. In Italic, Greek, Celtic, and Germanic, the *h_2e*-conjugation suffix **-eh_2-* was thematized to **-eh_2-e/o-* in the normal *h_2e*-conjugation manner, but the new sequence **-eh_2-e/o-* subsequently fell together with, or was simply replaced by, the more common present stem formative **-eh_2-i̯e/o- ('*-āi̯e/o-'). *-eh_2-i̯e/o-*, rather

[312] *mi* -conjugation forms are, however, common in Neo-Hittite. This is not surprising; the homophony of the 1 sg. in *-aḫḫi* (i.e. *-aḫḫ* - + *-ḫḫi*) with the 3 sg. in *-aḫḫi* (i.e. *-aḫḫ* - + *-i*), coupled with the fact that 1 sg. pret. in *-aḫḫun* (i.e. *-aḫḫ* - + *-ḫḫun*) was also interpretable as a *mi* -conjugation form (i.e. *-aḫḫ* - + *-un*), would have made the analogical creation of a new 1 sg. in *-aḫmi* all but inevitable. Cf. Oettinger 42.

[313] Cf. Watkins 1971: 61, 85 ff.

than *-*eh*$_2$*-e/o*-, was the immediate source of the stem-final complex in νεάω, and probably in *-nouāre* and *niuwōn* as well.[314]

There was one branch of the family other than Anatolian, however, where *-*eh*$_2$- — or rather *-*eh*$_2$*-e/o*- —was never phonologically or morphologically confused with *-*eh*$_2$*-i̯e/o*-, and where the treatment of the '*newaḫḫi*-type' can therefore be followed in some detail. This was Baltic. Lithuanian and Latvian distinguish formally between presents in *-*āi̯e/o*- (> Lith. 1 sg. *-oju,* Latv. *-āju*) and presents in *-ā- (> Lith. 1 sg. *-au,* Latv. *-u*); the latter have circumflex intonation of the stem vowel, pointing to contraction across a laryngeal hiatus.[315] The presents in *-*āi̯e/o*- are mainly denominatives (cf. e.g. Lith. *galvóju,* inf. *-óti* 'think' < *galvà* 'head'), but include a few obviously old iteratives (cf. Latv. lȩ̃kāju, inf. *-āt* 'jump', forming a word equation with Gk. ληκᾶν ·, τὸ πρὸς ᾠδὴν ὀρχεῖσθαι i.e. 'dance'). The present suffix *-*ā*-, on the other hand, is the characteristic Baltic replacement of the PIE iterative-causative suffix *-*ei̯e/o*-. PIE *-*ei̯e*- contracted to *-ī- in Balto-Slavic, and the resulting presents in *-ī- were subsequently provided with infinitives in *-*īt(e)i,* with acute *-ī-.[316] The synchronic association of infinitives in acute *-*īt(e)i* with presents in circumflex *-ī- is still very much alive in Slavic, as can be seen from the extensive attestation of the type *prositi* 'to ask', pres. *prošǫ, -siši, -sitь,* etc. in every Slavic language. The distinctive innovation of Baltic was to replace the *-ī- of the finite forms by *-ā-, thus producing the regular Lithuanian type *prašaũ* 'I ask', 2 sg. *prašaĩ,* 3 p. *prãšo,* but inf. *prašýti* (= OCS *prositi*).

In view of the close semantic link between causatives and de-adjectival facti- tives, it is very likely that the starting point for the replacement of *-ī- by *-ā- in Baltic was a nucleus of inherited causatives that happened to coincide in meaning with factitives built to verbal adjectives of the 'τομός' type. Thus, for

314 The development of *-*āi̯e/o* - to -άω in Greek was of course morphological—ultimately based on the pattern δέω : ἔδησα : εἰᾶσα, etc. (cf. §67). In Italic and Germanic, the replacement of *-*eh*$_2$*-e/o* - by *-*eh*$_2$*-i̯e/o* - is merely an inference from the complete, and probably early, merger of the two types.

315 *-*VHV*- sequences are the normal source of circumflex long vowels in Balto-Slavic final syllables; tautosyllabic *-*VH*- sequences produced acutes. The contrast is nicely displayed in the Lithuanian minimal pair nom. pl. *rañkos* 'hands' < *-*ā̃s*< *-*eh*$_2$*-es* vs. acc. pl. *rankàs* < *-*ā́s* < *-*eh*$_2$*-s* (= Ved. *-ā́s*) < pre-PIE **-*eh*$_2$*-ms.* For the final syllable rules cf. Ch. 2 n. 66.Since *all* stem-final long vowels in finite verbal forms are circumflex in Lithuanian—including some, like the *preterite* marker *-*ā*-, that are etymologically acute (cf. 3 p. pret. *sùpo* 'rocked' for phono- logically regular **supà*< *-*āt* < *-*eh*$_2$*-t*)—there is a theoretical possibility that the circumflex -ā- of presents like **praš*-ā-, **vart*-ā-, etc. (see below) is analogical. But the actual likelihood of this is not high. The presents in circumflex *-ā-, along with the vanished type in circumflex *-ī-, must themselves have been the principal point of departure for the more general rule mandating circumflexion of the stem-final vowel in finite tense stems.

316 The acute *-ī- is predictable, since all other infinitives in *-*v̄-t(e)i* go back to etymological *-*VH -t(e)i* (cf. Lith. *stóti* < * *stéh*$_2$*-ti-; dúoti* < **déh*$_3$*-ti-; minEti* < **mn̥(n)-éh*$_1$*-ti* -; etc.).

example, Baltic presumably inherited a causative present *$\underset{\frown}{u}$*art-ē-* 'turn (tr.)' (< *$\underset{\frown}{u}$*ort-$\underset{\frown}{e}$*ie/o-*; infinitive *$\underset{\frown}{u}$*art-$\underset{\frown}{i}$*-ti*), which would in principle have been associated with an *o*-grade thematic adjective *$\underset{\frown}{u}$*art-a-* 'turning (intr.)' (< *$\underset{\frown}{u}$*ort-ó-*). Like any such nominal stem, the adjective *$\underset{\frown}{u}$*art-a-* / *$\underset{\frown}{u}$*ort-ó-* would itself have been available to serve as the basis for a factitive present *$\underset{\frown}{u}$*art-ā-* 'make to be turning' (< *$\underset{\frown}{u}$*ort-é-h$_2$-e/o-*, thematized from *$\underset{\frown}{u}$*ort-é-h$_2$-*). This potential derivational channel was exploited on a large scale; the characteristic step taken by Baltic vis-à-vis Slavic was to substitute the factitive stem-type *$\underset{\frown}{u}$*art-ā-*, with circumflex *-ā- < *-eh$_2$-e/o-*, for the 'true' causative type *$\underset{\frown}{u}$*art-ē-*, thus giving Lith. *vartaũ,* inf. *vartýti* 'turn (tr.)'. That such factitives could be formed from verbal adjectives in Baltic is independently known from the example of Lith. *stataũ, statýti* 'build', clearly derived from the participle **stata-* < **sth$_2$-tó-* 'standing' (= Ved. *sthitá-*, Gk. στατός, etc.; cf. Jasanoff 1994: 163). Note also *glóstau, glóstyti* 'stroke', synchronically the iterative in *-styti* (a secondarily productive type) to the simplex *glódžiu, glósti* 'smooth, polish' (cf. Ger. *glatt,* Lat. *glaber* 'smooth' (< '**ghlādh-*')), but in origin probably the factitive in *-ā- to the *to*-participle **glāsta-* (Lith. *glóstas*). The formation of *stataũ* and *glóstau* is parallel to that of Lat. *cantāre* 'sing', *iactāre* 'throw', etc., built in precisely the same way to the participles *cantus* (: *canō*), *iactus* (: *iaciō*), etc.[317] But while the Latin frequentatives in *-tāre* probably passed through an intermediate stage with the remade suffix *-$\underset{\frown}{a}$$\underset{\frown}{i}$*e/o- / *-eh$_2$-$\underset{\frown}{i}$*e/o-*, the Baltic presents in *-ā-/ *-eh$_2$-e/o-* provide positive evidence for the survival of the *newaḫḫi*-type in exactly the shape predicted by the *h$_2$e*-conjugation theory.[318]

§82. It is not unlikely that further study will reveal the existence of yet other *h$_2$e*-conjugation present types in the parent language. One group of forms for which a *h$_2$e*-conjugation origin seems possible, although the facts are still inconclusive, is the somewhat shadowy category of PIE '*u*-presents'. These, as the name implies, were forms characterized by an invariant *u*-element added to the verbal root. The root itself typically appears in the *e*- or zero grade in the daughter languages, while the stem-forming *-*u*- is in the great majority of cases thematized to *-$\underset{\frown}{u}$*e/o-*. A *u*-present paradigm with **e* : *zero* ablaut (though

[317] I owe this interpretation of the Latin forms to Alan Nussbaum.

[318] It is interesting to compare the above account of the Baltic forms with that given by Stang (1966: 330). Stang likewise operates with a thematized version of the Hittite *newaḫḫi* -type; like other scholars of his generation, however, he assumes a PIE inflection *-eh$_2$-mi, *-eh$_2$-si, *-eh$_2$-ti,* etc. It is precisely the assumption of a *mi* -conjugation paradigm that makes this reconstruction unconvincing. A paradigm of the type envisaged by Stang would certainly have been renewed as a present in *-$\underset{\frown}{a}$$\underset{\frown}{i}$*e/o* - in Baltic, just as *$\underset{\frown}{i}$*éh$_2$-mi, *-si, *-ti* 'ride' (= Ved. *yáti*) and *h$_2$$\underset{\frown}{u}$*éh$_1$-mi, *-si, *-ti* 'blow' (= Ved. *vā́ti,* Gk. *ἄημι*) were renewed as *jóju, jója* and *véju, véja,* respectively.

not with *h₂e*-conjugation inflection) is assumed in *LIV,* where thirteen certain cases are listed, seven more being given as doubtful. Many are confined to a single branch; the best are the following:[319]

**dhénh₂-u- / *dhn̥h₂-u-'* 'move off' (Ved. *dhánvati* 'flows')
**ĝérh₂-u- / *ĝrh₂-u-'* 'wear out' (Ved. *jū́rvati*)
**gʷiéh₃-u- / *gʷih₃-u-'* 'live' (Ved. *jívati,* Lat. *uīuō,* OCS *živǫ,* etc.; Gk. ζώω (< **gʷiéh₃-u̯-*), Toch. B *śāw-* (< **gʷiéh₃-u̯-* or **gʷih₃-u̯-'*)
**sér-u- / *sr-u-'* 'watch, heed' (YAv. *ni-šhauruuaiti* 'watches')
**térh₂-u- / *tr̥h₂-u-'* 'overcome; cross over' (Ved. *tū́rvati* (= YAv. *tauruua-*) 'conquers', *tarute* 'crosses over')
**u̯él-u- / *1l-u-'* 'turn' (Lat. *uoluō* 'turn', Arm. *gelum* 'id.', Gk. εἰλέω 'wind around'; cf. also Go. caus. *wahwjan* 'turn over')
**u̯ér-u- / *u̯r-u-'* 'ward off' (Gk. ἔρυμαι, ῥῦσθαι; cf. also Ved. *várūtha-* 'protection')

The overall similarity of *u*-presents to *i*-presents of the *dai*-type, and their strong tendency to become thematic in the later languages, argue for a *h₂e*- conjugation interpretation of these forms. But the critical evidence of Hittite is indecisive. Corresponding to Ved. *tū́rvati* and *tarute* Hittite has an athematic stem *tarḫu-* 'overcome, be capable'; yet Hitt. *tarḫu-* is an unambiguous *mi*-verb, with a 3 sg. alternately written *taruḫzi* and *tarḫuzzi*. These spellings point to a phonetic reading [tarḫʷ-tsi], with the labiovelar fricative phoneme /ḫʷ/ that arose from the cluster *ḫ + *w* before vowels. The 3 sg. form *tarḫuzzi / taruḫzi* is thus not the direct reflex of a PIE **térh₂-u-ti,* which would have given Hitt. **tarruz(z)i,* but must have been back-formed from the 3 pl. **tr̥h₂-u̯-énti,* which gave the correct (though by chance unattested) **tarḫuanzi* [tarḫʷ-antsi].[320] There is at least a chance, therefore, that the 'original' *tarḫu-*, despite appearances, was a *ḫi*-verb, with a 3 sg. **tarḫui* [tarḫʷ-i] < **t(e)rh₂-u̯-e(i)* that was simply replaced by the back-formed *tarḫuzzi / taruḫzi*. Facilitating this replacement would have been the fact, never to be lost sight of in discussions of this word, that *tarḫu-* is merely a phonetic variant of the more common *mi*-verb *tarḫ-* (3 sg. *tarḫzi,* pret. *tarḫta,* etc.).

[319] The other roots for which such presents are listed, with varying degrees of credibility, are **kelh₁* - 'deceive', **melh₂* - 'grind', **pieh₂* - 'strike', **pster* - 'sneeze', **(s)pelH* - 'split', **spenh₁* - 'stretch', **terk* - 'turn', and, in the questionable category, **bhleiĝ* - 'strike', **dhu̯er* -, 'hurt', **leh₁* - 'leave', **leh₂* - 'pour' (see below), **terh₃* - 'wound', and **u̯erĝ* - 'cut'.

[320] Worth noting also is the Common Anatolian participle **tarḫʷ-ant* - < **tr̥h₂-u̯-ént* - or **tr̥h₂-u̯-n̥t-',* which gave the Luvian divine name *Tarḫunt* - (= Lyc. *trqqñt* -, with *q* < **ḫʷ*) and forms an exact word equation with Ved. *tū́rva(n)t* -, used as an epithet of Indra, Agni, and Mitra.

The possibility that **tarḫu-* was originally a *ḫi*-verb takes on added interest from the fact that the other clear example of a *u*-present in Hittite is the *ḫi*-verb *lăḫu-* 'pour'. Most of the attested Old Hittite forms of this verb point to a stem *lāḫu-*([-ḫʷ-]) throughout the paradigm (e.g. 3 sg. *lāḫui,* ptcp. *lāḫu(w)ant-*), with indications of an alternative weak stem *lăḫu-* in forms with accented endings (e.g. 3 sg. mid. *laḫuwāri* (OH+), ptcp. *laḫu(w)ānt-*). The bare root, without its *u*-extension, may be preserved in the irregular imperative *lāḫ,*[321] an etymological connection has been suggested with Lat. *lāma* 'bog'.[322] The stem *lăḫu-* would thus seem to invite analysis as a *u*-present paradigm of the type 3 sg. **léh$_2$-u̯-e(i)* : 3 pl. **l̥h$_2$-u̯-énti.* But there are phonological difficulties. The regular reflex of **léh$_2$-u̯-e(i)* would have been **laḫḫui,* with no lengthening of the vowel and no lenition of the laryngeal (contrast *paḫḫur* 'fire' < **péh$_2$-u̯r*). It may be that the vocalism of the actual 3 sg. form *lāḫui* is analogical to that of the simplex *lăḫḫ-*, as suggested by Melchert 72 f.; it may also be, as further suggested by Melchert (ibid.), that the lenited -ḫ- is ultimately of analogical origin as well. But the need for such ancillary hypotheses, both here and in the case of *tarḫu-*, effectively undermines the value of the Hittite evidence for *u*-presents, and shows why these forms, unlike the presents of the *molō, dai-*, μίμνω-, *cíkitsati-*, and *newaḫḫi*-types studied above, cannot yet be safely assigned a place in the *h$_2$e*-conjugation.

[321] But it is also possible that *lāḫ* simply reflects a reduction of **-ḫʷ* to *-j* in final position. It would be unsafe to draw any far-reaching conclusions from the 1 sg. pret. *laḫḫun* (MH +), which could equally well represent *la(ḫ)ḫ* - + - *un, la(ḫ)ḫ* - + -*ḫḫun, la(ḫ)ḫu* - + -n, or (haplologized) *la(ḫ)ḫu* - + -*ḫḫun.*

[322] So Schmitt-Brandt 1973: 65. There is no connection between the Hittite forms and the family of Lat. *lauō* and Gk. λούω 'wash', which presuppose a root **leuh$_3$* -.

6 Aorists of the *h₂e*-conjugation: Part I

§83. We have now met a fairly wide variety of *h₂e*-conjugation presents, and it is time to take stock of what we have learned. The approach of the preceding chapters has been basically comparative and empirical: in setting up forms like **mólh₂-h₂e(i), *dhéh₁-i-h₂e(i),* etc. as ordinary actives, we have simply tried to render the descriptive situation in the parent language, not to plead the case for making the perfect, the middle, or any other traditionally recognized category the 'source' of the *ḫi*-conjugation. The alternative strategy, which might be called the 'deductive' or 'etymological' approach, has repeatedly shown itself to be unproductive. Starting from the *a priori* assumption that if the *ḫi*-conjugation endings were those of the perfect, then the *ḫi*-conjugation must be a descendant of the perfect (Sturtevant, Risch, Eichner, Oettinger, etc.)—or from any other such line of reasoning (Rosenkranz, Cowgill, Meid, etc.)—simply interposes a barrier between the verbs that actually make up the *ḫi*-conjugation and their obvious formal comparanda elsewhere.

The guiding philosophy of this discussion has been the loose evolutionary hypothesis outlined in §§38–9. According to this view, the middle endings, in the course of their internal development within the prehistory of PIE, acquired their familiar formal and semantic properties through the renewal of an earlier unitary perfect/middle set with broadly stative, processual, and 'internal' functions.[323] The emergence of the canonical PIE middle, with its apophonic invariance, its use of *-*r* as a primary marker, and its *o*-coloured endings in the third person, was a gradual process that left a series of unrenewed 'neoactives' in its wake. One such group of forms was the complex we know as the perfect, semantically close to the middle in the earliest IE languages, but already patterning morphologically as an active category in the parent language. Another, less specialized, neoactive residue was the thematic conjugation, or at

[323] The semantic feature [+affected] is used by Bakker (1994: 24 ff.) to account for approximately the same range of values in the Greek middle.

least its 1 sg. in *-*o*-h_2. A third group of neoactives—the largest and most varied—was the set of athematic presents we have identified in Chs. 3–5 as forming the nucleus of the h_2e-conjugation.

The specific h_2e-conjugation presents encountered thus far can easily be understood within this framework. Among the *molō*-presents, the subgroup consisting of verbs of motion (Gmc. **gangan, *faran,* Ved. *dhā́vati,* etc.)can be thought of as representing the action of the verb as an internal, subject-involved process (cf. NE *betake oneself,* Ger. *sich wenden,* Fr. *s'en aller,* etc.); for typological parallels in the older IE languages we need look no further than deponents like Ved. *pā́dyate* 'goes', Gk. ἔρχομαι 'come', or Lat. *progredior* 'advance'. Even the 'violent action' subgroup of *molō*-presents (*$molh_2$-/*$melh_2$-'grind', *$bhodhh_1$-/*$bhedhh_1$-'dig', *bhorH-/*bherH-'strike', etc.), seemingly the very antithesis of middles in the ordinary sense, can be understood as former processual iteratives, perhaps originally object-demoting conatives of the type expressed in English by phrases like *grind away at, dig away at,* etc.[324]

Among the other h_2e-conjugation types, it is interesting to note that the typical *molō*-present meanings—motion and violent activity—tend to recur in the presents in *-nh_2-*i*-: cf. e.g. Hitt. *iyanna/i*-'get moving', *walḫanna/i*-'strike', *ḫattanna/i*-'chop', *paršiyanna/i*-'break', Ved. *gṛbhāyá-* 'seize', *śamāyá-* 'be active', *damāyá-* (*-anyá-*) 'subdue', *turaṇyá-* 'rush', Toch. B *mäntäññ-* 'injure', etc. Of the μι-μνω-presents, a healthy selection, including **sti-sth*$_2$-, 'stand up', **si-ʒd-* 'sit down', **pi*-bh_3- 'drink', **ǧi-ĝn*(h_1)- 'be born, become', and **mi-mn-* itself, refer to 'internal' physical activities or denote a change of state. The *dai*-presents include a sizeable number of verbs with inherently middle-like

[324] On object demotion in general, see Anderson 1988: 347 f., with references. It is a typologically interesting fact that in the Australian language Warlpiri (as described by Nash 1986: 197 ff.) transitive verbs whose normal case frame is Erg(ative)-Abs(olutive) may optionally 'demote' their object to Dat(ive), as e.g. inAccording to Hale (1978: 47) as quoted by Nash, 'the construction is evidently limited to verbs whose semantic structure is "bi-partite" in the sense that the effect caused by the agent is brought about by causing an instrument (stick, hand, missile, or the like) to move against the entity denoted by the object.' The parallel with Indo-European is obviously not exact; object demotion in Warlpiri, for example, is not reflected in the morphology of the verb. But it is nonetheless suggestive that verbs of 'violent action' in this language induce a form of grammatical behaviour—detransitivization—that in IE languages is characteristically marked by a shift from active to middle voice.I am indebted to Claire Bowern for calling my attention to this and similar phenomena in a variety of Australian languages.

meanings (**dh(e)h$_1$-i-* 'suck', **spē̆h$_2$-i-* 'be(come) sated' (: Ved. *sphāyate*), **tk(e)h$_1$-i-* 'obtain, possess' (: Gk. κτέομαι)), as well as others of the violent action type (**d(e)h$_2$-i-* 'cut', **sk̑(e)h$_2$-i-* 'cut open', perhaps **sh$_2$(e)h$_1$-i-* 'bind', **d(e)h$_1$-i-* 'id'.). Finally, the main group of *h$_2$e*-conjugation *s*-presents consists of desideratives (Indo-Iranian and Celtic) and iteratives (Anatolian).[325] The affinity of desideratives for the middle is well known from Greek present : future pairs of the type ἀκούω: ἀκούσομαι 'hear', πλέω : πλεύσομαι 'sail', etc. Iteratives too are commonly associated with middle morphology, a striking example being furnished by Old Hittite 3 sg. *uiškitta* and *paiškitta,* the deponent iterative forms corresponding to *uēzzi* 'comes' and *pāizzi* 'goes'.

It is also clear, however, that already within the parent language an important minority of *h$_2$e*-conjugation verbs had exchanged their intransitive, middle-like meaning for the transitive or causative value of oppositional actives. This was obviously the case with **k̑onk-/*k̑enk-* 'hang (tr.)', the originally intransitive sense of which was transferred to the typologically later, but still safely PIE, middle paradigm (cf. Ved. *śaṅkate,* Gmc. **hangaiþ,* Hitt. *gangattari*). The same can be assumed for Hitt. *pippa-* 'overturn' (§77). The fullest display of secondary transitivization is seen in the presents in **-e-h$_2$-* (*newaḫḫ-*, *nouāre,* etc.), which must have acquired their late PIE factitive value by opposition to newer, though sparsely attested, intransitive middles of the type **néu̯e-h$_2$-*(t)o(r) 'becomes new'.[326] Diathetic reversals of this kind, of which additional instances will be seen below, are encountered in all the older IE languages. The late expansion of the perfect middle in Greek and Indo-Iranian makes the perfect system a particularly rich source of examples; cf. e.g. Gk. λέλοιπε, originally 'is (= has been) left', later 'has left' by opposition to perf. mid. λέλειπται; Ved. *jajā́na,* originally * 'is (= has been) born' (= Gk. γέγονε), then 'has brought forth' by opposition to perf. mid. *jajñé*.[327]

§84. Since all the principal classes of *h$_2$e*-conjugation presents can thus be linked to the same hypothetical 'protomiddle' or *Urmedium* as the classical perfect and middle, something like the following scenario can be envisaged for the parent language. At an early stage in its history PIE had 3 sg. protomiddles

[325] To which may be added the minor type represented by **h$_2$u̯og-s* - / **h$_2$u̯eg-s* - 'grow', etc.

[326] Attested forms of this type include *šūniaḫta* 'is divinely afflicted' (OH+), 3 sg. pres. *išiaḫtari* 'is proclaimed' (MH+), 1 sg. pret. *innaraḫḫat* 'I was at the ready', and 2 sg. impv. *miyaḫuwantaḫḫut* 'grow old!'.

[327] Germanic, another branch in which the perfect was highly productive, naturally provides cases as well: cf. e.g. Go. *laihΛ* 'lent' (: Gk. λέλοιπε) and *ana-baup* 'ordered' (i.e. 'caused to take note'; contrast Ved. 3 sg. subj. *búbodhati* 'may be aware'). Note also the common back-formation of transitive actives from inherited intransitive middles, as in Ved. *ṓdhati* 'increases (tr.)' beside older *ódhate* 'increases (intr.)', or Lat. *uertō* 'turn (tr.)' beside *uertor* 'turn (intr.)'.

of the type **ḱe̯i̯-e* 'lies', **dhugh-*é 'gives forth', **mólh$_2$-e* 'grinds (away at)', **ḱónk-e* 'hangs (intr.)', **mí-mn-e* 'stands firm', and **me-món-e* 'has in mind'. In the course of the subsequent internal evolution of the verbal system, some of these, in particular the incipient deponents **ḱe̯i̯-e* and **dhugh-*é, were assigned to the emerging middle category—the 'stative' of Oettinger, Rix, *et al.*—and fitted out in the *hic et nunc* present with the particle **-r*. This set in motion a succession of further changes. Root-accented **ḱe̯i̯-er* became **ḱe̯i̯-or* by the phonological rule discussed in §38, giving rise to the *o*-coloured primary middle ending **-or*.*o*-timbre was then morphologized: the unaccented variant **-or* was analogically introduced into oxytone forms of the type **dhugh-*ér (⇒ **dhugh-ór*), and **-o* was extracted from 3 sg. presents like **ḱe̯i̯-or, *dhugh-ór,* etc. as a new, specifically middle, *secondary* ending (3 sg. imperfect/injunctive **ḱe̯i̯-e* ⇒ ** ḱe̯i̯-o, *dhugh-*é ⇒ ** dhugh-*ó). Eventually, the middle ending **-o(r),* together with its later variant **-to(r),* was contrastively introduced into paradigms of all kinds, including some that belonged to the emerging *h$_2$e*-conjugation type. Thus, for example, the 3 sg. present **mólh$_2$-e* acquired a middle in **-or*; here the basic active meaning 'grinds', by now no longer specifically iterative, intensive, or object-demoting, continued to attach to the old form in **-e,* while the new **mólh$_2$-or* (*vel sim.*) assumed the specifically self-benefactive and passive meanings 'grinds for himself/herself' and 'is ground'. In the case of intransitive **ḱónk-e,* the innovated middle **ḱónk-or* (*vel sim.*) may first have been employed as an optional, purely facultative variant of the older form in **-e*; only later did **ḱónk-e* become polarized as an oppositional transitive.[328] Whether the reduplicated **mí-mn-e* acquired a differently nuanced **mí-mn-or* at this stage is impossible to tell.

In the wake of these events, **mólh$_2$-e, *ḱónk-e, *mí-mn-e,* and their associated paradigms lost their diathetically 'special' marking and took on the status of synchronically active *h$_2$e*-conjugation presents. As such, they survived to the end of the PIE period. Owing to their grammatically active status in late PIE, *h$_2$e*-conjugation presents underwent further low-level changes of a formally 'activizing' type, such as (probably) the replacement of **-r̥s/*-ē*r by **-n̥ti/*-énti* in the 3 pl. of the present proper, the introduction of the *hic et nunc* marker **-i* in the 1, 2 sg., and (perhaps) the replacement of **-e* by **-et* as the 3 sg.

[328] The root vocalism of the middle forms here tentatively given as **mólh$_2$-or* and **ḱónk -or* is not entirely clear. On the one hand, we might have expected the middles corresponding to **mólh$_2$-e* and **ḱónk-e* to be **mélh$_2$-or* and **ḱénk-or,* with the *e* -grade of the weak stem; on the other, there is positive evidence that **-o* -, rather than **-e* -, was selected as the 'middle' vocalism under comparable circumstances in the aorist (cf. especially §110). Little can be gathered from forms like Hitt. *gangattari,* with analogical vocalism, and Gmc. **hangaip,* with *o* -grade but final accent, which have been extensively remodelled.

secondary ending (cf. §54). The evolution of such forms into the familiar-looking *ḫi*-verbs of Hittite was straightforward. In the other IE languages the typical, though not the only, fate of h_2e-conjugation presents was to undergo thematization on the basis of the 3 sg., with attendant levelling of ablaut differences.

One group of pre-PIE protomiddle forms which clearly did *not* share in the development of **mólh$_2$-e, *ḱónk-e,* and **mí-mn-e* to h_2e-conjugation presents were the nascent perfects **memón-e, *ĝeĝónh$_1$-e, *u̯eu̯ág-e,* etc., which eventually yielded Gk. μέμονε(= Lat. *meminit,* Go. *man*), γέγονε, *(ϝ)έ(ϝ)αγε, etc. Presumably owing to its special functional position, the perfect parted company from the main line of h_2e-conjugation development at a very early date. In the perfect system there was no emergence of a renewed middle—the type 3 sg. *memnór*—until relatively late in the PIE period (cf. §30). And while the perfect did, like normal h_2e-conjugation presents, eventually acquire an innovated preterite, the pluperfect, this tense for the most part simply added the athem-atic endings of the *mi*-series directly to the perfect stem (**memón-ŋ, *-s, *-t,* etc.; cf. §§25–6). Even in the 3 pl., where the perfect : pluperfect contrast was expressed differently, there was no overlap with the h_2e-conjugation pattern. The perfect, as discussed in §§27 ff., seems to have distinguished a 'primary' 3 pl. in **-ḗr / *-r̥* (Av. *-arə, -arə̄,* Lat. *-ēre*< **-ḗr-i*), normally with zero grade of the root, from a 'secondary' 3 pl. in **-ŋ̥s* (GAv. *ərəš*) with full grade, while the h_2e-conjugation proper probably opposed primary **-énti / *-n̥ti* to secondary **-é́r / *-r̥* (and **-ŋ̥s*?), as in Hittite. Symptomatic of the formal separateness of the perfect from the h_2e-conjugation in the parent language is the fact that, unlike the presents of the h_2e-conjugation, the perfect never developed a tendency toward thematization.

§85. It may be useful at this point to comment briefly on the place of the thematic conjugation in this picture. Pre-PIE evidently had a form **bhér-e* 'carries', which originally patterned as the 3 sg. protomiddle / *Urmedium* counterpart of the obsolescent, but surprisingly well-attested, Narten present **bhḗr-* (cf. Ved. *bhárti,* Gk. 2 pl. impv. φέρτε, Lat. *fert,* MIr. *birit* < **bher-n̥tī* 'sow', Toch. A 3 sg. impf. mid. *pārat* < **bhḗr-(a-)*).[329] Following the protomiddle 'split' described above, **bhér-e* had two later pre-PIE continuants—a neoactive **bhére* 'carries' and a middle **bhéror* (= OIr. *·berar*) 'is carried', standing in approximately the same relationship to each other as neoactive : middle pairs of the type **mólh$_2$e* : **mólh$_2$or.* Note that **bhéror,* as a specifically athematic

[329] Kim McCone (p. c.) first drew my attention to the importance of MIr. *birit.* The Tocharian lowering of PIE **ē* to **a* ('ā') before **a* in the following syllable is discussed by Adams (1988: 87 f.).

form (**bher-+*-or*; **bhére/o-+*-or* would have given ***bhérōr*), provides independent evidence for Watkins's analysis of the thematic stem **bhére/o-* as a relatively late, though inner-IE, creation (cf. App. 1). Watkins's theory of the thematic conjugation claims further that the thematic vowel of 1 sg. *bhéro-h_2,* 2 sg. *bhére-si,* etc. continues the 3 sg. ending **-e,* reinterpreted as a stem vowel and extended through the paradigm. This proposal, while not strictly provable, is eminently compatible with our results thus far. It is significant that thematic presents of the type **bhére/o-* and athematic *h_2e*-conjugation presents of the type **mólh$_2$-* / **mélh$_2$-* are in complementary distribution: there were no *e*-grade neoactive paradigms of the type **bhérh$_2$e, *bhérth$_2$e, *bhére,* etc., or thematic paradigms of the type **mólh$_2$oh$_2$, *mólh$_2$esi, *mólh$_2$eti,* etc., in late PIE. This distributional oddity is precisely what might have been expected if the missing athematic *e*-grade type had been thematized within the parent language.

As long suspected, then, the problem of the thematic 1 sg. in **-o-h_2* and the problem of the *ḫi*-conjugation are closely related. But there is no possibility of deriving the attested corpus of *ḫi*-verbs *from* thematic presents, nor do the specific thematic presents traditionally reconstructed for the parent language (**bhére/o-*, **h$_2$ég̑e/o-*, **u̯égʰe/o-*, **pékʷe/o-*, etc.) generally have counterparts in Anatolian. The relationship of the thematic conjugation to the *ḫi*-conjugation is more indirect. If Watkins's basic analysis is correct, then a nucleus of thematic presents, including **bhére/o-* and a handful of others, were originally *e*-grade *h_2e*-conjugation presents which parted company from the main body of *h_2e*-presents through thematization and extensive desinential remodelling within the protolanguage (3 sg. **bhére* ⇒ late PIE **bhéreti,* 2 sg. **bhér(e)th$_2$e* ⇒ late PIE **bhéresi,* etc.). In the post-IE period the ranks of the *bhéreti*-type were vastly swollen through secondary changes, including, but not limited to, the individual thematizations that produced Lat. *molō,* OIr. *melid,* Go. *malan,* etc. But late developments like the post-IE thematization of **molh$_2$- / *melh$_2$-* must not be allowed to obscure the fundamental difference between the *h_2e*-conjugation presents studied in Chs. 3–5, which were athematic in late PIE, and presents of the *bhéreti*-type, which took the familiar thematic endings **-oh$_2$/ *-om, *-esi / *-es, *-eti / *-et,* etc. in the late protolanguage. Stems of the type **bhére/o-* can perhaps be described, with an eye toward their prehistory, as 'thematic *h_2e*-conjugation presents', but from the synchronic point of view of a speaker of late PIE they were simply normal actives in which the expected 1 sg. ending **-mi* was anomalously suppleted by **-h$_2$.* We will have more to say about thematic presents below.

§86. If the PIE *h_2e*-conjugation presents and imperfects studied thus far are nothing more than denatured protomiddles—forms that never made the leap, so to

speak, to being true middles—then we should also expect to find evidence for *h_2e*-conjugation *aorists*. In Anatolian such forms would present themselves as ordinary *ḫi*-verbs: just as the PIE active (*mi*-conjugation) root aorists *$*dheh_1$-/ *dhh_1-* 'put' and *$*terh_2$- / *$*tṛh_2$-* 'overcome' gave rise in Hittite to the back-formed *mi*-conjugation presents *tēzzi* 'says' (as if < *$*dhéh_1$-ti*) and *tarḫzi* 'overcomes' (as if < *$*t(é)rh_2$-ti*), a *h_2e*-conjugation aorist in 1 sg. *$-h_2e$,* 2 sg. *$-th_2e$,* and 3 sg. *$-e$* would have engendered a back-formed *ḫi*-conjugation present in 1 sg. *-*ḫai* (> Hitt. *-(ḫ)ḫe, -(ḫ)ḫi*), 2 sg. *-*tai* (> Hitt. *-(t)ti*), and 3 sg. *-*ei* (> Hitt. *-i*). We have already met a few *ḫi*-verbs, such as *dă-* 'take' (OH 1 sg. *dāḫḫe,* 1 pl. *tumēni,* etc.; cf. §53), that call for such an analysis. The root *$*deh_3$-* 'give' formed a root aorist in the parent language (cf. Ved. *ádāt,* Gk. ἔδω[κα], ἔδομεν, Arm. 3 sg. *et* < *$*edōt$*), but shows no sign of ever having formed a root present, *h_2e*-conjugation or otherwise.[330] It is natural, therefore, to refer *dă-* to the protomiddle of the root aorist whose active appears in Ved. *ádāt*; the meaning 'take' can be neatly explained on the basis of the protomiddle sense 'give to oneself'. Other *ḫi*-verbs with an 'aorist' profile, most of which have been met before, are *ăr-* 'arrive' < *h_1er-* 'start moving, arise' (cf. Ved. aor. *ārta,* ptcp. *arāṇá-* 'move', Gk. aor. ὦρτο 'arose' (+ ἔρετὸ ὡρμήθη (Hesych.)), perf. ὄρωρε 'is arisen');[331] *arai-* 'rise' < *HreiH- '(start to) run, rise' (cf. Ved. *riṇáti* 'makes to flow', Gk. ὀρῖω 'stir up', Go. *rinnan* (< *-*nw-*) 'run', Arm. *y-ar·nem* 'rise', aor. *y-areay* < *$*ari(i̯) -a-$ < *HriH-*);[332] *karāp- / karip(p)-* 'eat (of animals)' < *$*ghrebh(H)$-* 'seize' (cf. Ved. *gṛbhṇáti,* aor. 3 pl. *agṛbhran,* ptcp. *gṛbhāṇá-*);[333] *lăk-* 'knock out, bend' < *$*legh$-* 'lie down' (cf. Gk. aor. λἐκτο 'lay down', OCS aor. *lęže* 'id.'); *šăkk- / šekk-* 'know' (cf. OCS pres. *sěką* 'chop', Lat. perf. *secuī* 'cut'); *šarap- / šarip(p)-* 'sip' < *$*srebh$-* 'sip up' (cf. Arm. aor. 3 sg. *arb* 'drank' < *$*(e)sṛbhet$*); and *wăk-* 'bite' < *$*u̯aĝ-$* 'break' (cf. Gk. (f)ἀγνυμι 'break', perf. (f)ἐ(f)ᾱγε 'is broken', Toch. B *wokotär* (class IV pres.) 'breaks open (intr.)').[334] What all these verbs have in common is that they pattern as *ḫi*-conjugation root presents in purely Hittite terms, but have etymological ties to root or thematic aorists, rather than to *molō*-presents, elsewhere in the family.[335]

[330] Lat. *dō, dare* 'give' and Arm. *tam* 'id.' are not root presents, but almost certainly dereduplicated forms of earlier *$*dida$ -* or *$*deda$ -* (so e.g. Leumann 1977: 527 f., Klingenschmitt 1982: 85 f.).

[331] The form of the root is notoriously disputed. Oettinger favours *h_3er -* (523 f.), though this would probably have given Hitt. *$*ḫar$ -*; *LIV*² sets up separate roots *h_1er -* 'arrive' (211) and *h_3er -* 'start moving' (266). Under any way of assigning the forms, the morphological patterning is clear. See further §123, with n. 57.

[332] Cf. Ch. 4 n. 4.

[333] Unless the root is rather *$*ghrebh$ -* 'dig'; cf. Ch. 3 n. 49.

[334] *Pace LIV*² 605, the reconstruction *$*u̯aĝ$ -* is preferable to *$*u̯eh_2ĝ$ -*. The hypothesis of an internal laryngeal is complicated by Ved. *vájra -* 'thunderbolt', which presupposes a Caland *ro* -stem adjective *$*u̯aĝ-ró$ -* 'smashing', standing in the same relationship to the 'ē-stative' stem *$*u̯aĝ-éh_1$ -* (: Gk. *(f)αγ-η- 'break (intr.)') as* Lat. *ruber* 'red' to *rubēre* 'be red', *piger* 'lazy' to *pigēre* 'be lazy', etc. See further n. 23.

[335] In the discussion that follows, the term 'aoristic root' will be retained to refer to roots that formed a root aorist, or a thematic aorist based on a root aorist, in the parent language. The traditional distinction between aoristic and presential roots still retains its usefulness, despite the fact that many PIE roots that formed a root aorist are now known also to have formed derived root presents of the Narten or 'stative-intransitive' type (see below).

§87. Since the lexical items just enumerated show *o*-grade in the singular like *molō*-presents, they can be set up as h_2e-conjugation root aorists with **o* : **e* ablaut.[336] Representative paradigms, at a recognizable pre-Hittite linguistic stage, would have included the forms shown in Fig. 6.1:

FIGURE6.1

sg. 1	**dā-ḫḫa*	(< **dóh₃-h₂e*)	**lāg-ḫa*	(< **lógh-h₂e*)
2	**dā-tta*	(< **dóh₃-th₂e*)	**lāg-ta*	(< **lógh-th₂e*)
3	**dā* / **da-e*	(< **dóh₃-e*)	**lāg-e*	(< **lógh-e*)
pl. 1	**dā-wen*	(< **déh₃-me-*)	**lēg-wen*	(< **légh-me-*)
2	**dā-tten*	(< **déh₃-(t)e-*)	**lēg-ten*	(< **légh-(t)e-*)
3	**dā-er*	(< **déh₃-ṛs*)	**lēg-er*	(< **légh-ṛs*)[a]

The aorists **doh₃-* / **deh₃-* and **logh-* / **legh-* would originally have meant 'took' (< * 'gave oneself') and 'lay down'; the transitive value of Hitt. *lăk-* ('knock out, bend') is, as we shall see below, secondary and oppositional vis-à-vis the middle *lagāri* 'bends (intr.)'. From **dā-ḫḫa,* **lāg-ḫa,* etc. it is but a short distance to the actually attested forms: the 1 sg. in **-(ḫ)ḫa,* with the Proto-Anatolian ending, was remade to *-(ḫ)ḫun* in Hittite (cf. §6) and the 3 sg. in **-e* was replaced by *-š* (§115). More important and earlier than these inner-Hittite changes, however, was the back-formation of the presents corresponding to Hitt. *dāḫḫi, dātti, dāi,* etc. and **lākₖḫi,* **lākₖti, lakₖi,* etc. In the 1-3 sg. the new forms were built to the corresponding preterites by substituting primary **-h₂ei* (**-(ḫ)ḫai*), **-th₂ei* (**-(t)tai*), **-ei* for secondary **-h₂e* (**-(ḫ)ḫa*), **-th₂e* (**-(t)ta*), **-e*—a trivial

[336] For **μaĝ-* and other roots with fundamental *a* -vocalism, I assume that **-ā-* took the place of **-o* -, as in Gk. *(f)ἐ(f)ᾱγε and Lat. scābī* (cf. §23).

step once the functional distinction between the PIE imperfect and aorist had been lost in Proto-Anatolian.[337] In the plural, as we have already seen in §53, there was a remarkable further detail: the new present plural in *-*weni,* *-*(t)teni,* *-*enti* (*vel sim.*) took zero-grade root vocalism and shifted the accent to the endings. The 3 pl. present of *lăk-* is thus *lăgānzi,* while the present plural forms of *dă-* are *tumēni, dăttēni, dānzi* (i.e. *dă-*+*-anzi*), all based on an underlying hyperweak stem (< *dh_3-) which surfaces as *du-* in the 1 pl. and as *dă-* elsewhere. The model for the zero-grade end-accented plural forms was supplied by the prehistoric *mi*-conjugation pattern **éswen* : **aswéni,* **épwen* : **apwéni,* etc., which enjoyed a period of productivity in Anatolian before the fixation of the accent on the root syllable.

§88. If our hypothesis of h_2e-conjugation root aorists of the type **logh-* / **legh-*, **doh$_3$-* / **deh$_3$-*, **h$_1$or-* / **h$_1$er-*, etc. is correct, then such forms ought to have left traces in other IE languages as well. How might such traces be expected to appear? Of the two theoretically possible indicators of former h_2e-conjugation aorist status—**o* : **e* ablaut and the h_2e-conjugation endings—the first is *a priori* much likelier to surface in the attested languages than the second. This is because, as we have now repeatedly seen, the h_2e-conjugation endings were lost or obscured everywhere outside Anatolian, while the stem structure and ablaut patterns of h_2e-conjugation paradigms showed considerably greater staying power. *molō*-presents can be recognized in Germanic, Balto-Slavic, Latin, etc. by their retention of *o*-vocalism, not by their maintenance of the dentalless 3 sg. in *-*e*. We should also expect to find this pattern in the aorist. If the pre-Hittite **logh-* / **legh-* type has any detectable cognates outside Anatolian, we should be able to identify them by their vocalism.

Much of the remainder of this chapter and the next will be devoted to showing that the h_2e-conjugation aorists posited in the preceding sections on the strength of Hitt. *dă-*, *lăk-*, etc. were indeed a PIE category, with clear reflexes elsewhere in the family. As will emerge, the cognates of the aorist-based *ḫi*-verbs of Hittite fall into two groups. The first consists of the Indo-Iranian 'passive' aorist (type Ved. 3 sg. *ábodhi,* pl. *abudhran* 'awoke') and related formations associated with 'stative-intransitive systems', a term that will be defined below. The second group consists of the *s*-aorist and an assortment of more or less obscure forms associated with the *s*-aorist, such as the Vedic

[337] This formulation assumes, as we must, that the 3 sg. of the h_2e -conjugation aorist ended in *-*e* in late PIE—thus differing from the corresponding 3 sg. imperfect, which may have ended in *-*et* (§§54–5). There is, however, no solid inner-Hittite evidence for such a contrast, suggesting that if it existed at all it was lost very early.

precative type *jéṣma* 'we would conquer' and the Younger Avestan optative type *vainīṯ* 'might win'. In both cases a substantial part of the evidence will be drawn from a branch of the family that has so far played little part in our investigation of the *h₂e*-conjugation—Tocharian.

§89. From a purely descriptive point of view, there are two kinds of middle root aorists in Indo-Iranian. The more ordinary type has invariant zero grade or (less often) full grade of the root, and employs the endings *-ta* in the 3 sg. and *-ata* (< *-n̥to*) in the 3 pl. Examples include Ved. *ákṛta* 'made (for himself)', pl. *ákrata*; 3 sg. *áyukta* 'yoked (for himself)', pl. *yujata*; 3 sg. *árta* (i.e. *á* + *arta*) 'moved', pl. *árata*; 3 sg. *áv̥rkta* 'twisted'; 3 sg. *áspaṣṭa* 'saw'; GAv. 3 sg. *maṇtā* 'remembered' (< **mén-to*; contrast Ved. *ámata* 'id.' < **mn̥-to*); and 3 sg. *gərəžḏā* 'complained'. The PIE status of this type, which includes both deponents and 'true' (i.e. self-benefactive) middles opposed to actives, is uncontroversial.

The second type is the so-called 'passive' aorist, with historical *o*-grade of the root in the 3 sg.[338] and zero grade, if possible, in the 3 pl. The Vedic endings are *-i* in the 3 sg. indicative and injunctive, *-ran* / *-ram* in the 3 pl. indicative, and *-anta* in the 3 pl. injunctive. There are no distinctive first or second person forms. Well over fifty roots make aorists of this kind in the Rigveda; the sense is prevailingly, though not invariably, passive when the corresponding active is transitive (e.g. *ákāri* 'was done'; *áyoji* 'was yoked', pl. *áyujran; ádarśi* 'appeared, was seen', pl. *ádr̥śran; ásarji* 'was released', pl. *ásr̥gran* (*-ram*)), and simply intransitive otherwise (e.g. *ábodhi* 'woke up', pl. *abudhran* (*-ram*), inj. *budhánta; aroci* 'shone forth'; *ápādi* 'went, fell', pl. *apadran*). The passive aorist is also found in Iranian, where GAv. *srāuuī* 'was heard, was famed as' and *vācī* 'was said' correspond exactly to Ved. *śrávi* and *(a)vāci*.[339]

The origin of the apophonically anomalous 3 sg. in *-i* is a mystery. For most of the twentieth century the prevailing tendency was to see it as a morphological interloper—a nominal form, properly neither passive nor an aorist, that somehow managed to be reinterpreted as a verb and integrated into a middle paradigm in Indo-Iranian. A useful summary of the earlier literature is given by Kümmel (14 ff.), whose own position puts him squarely in the mainstream of scholarly opinion. In Kümmel's view (19, 157), the 3 sg. of the passive aorist

[338] As shown by the operation of Brugmann's Law, which lengthened *-*o* - to -ā- in open syllables; cf. *ákāri, ápādi,* etc. below.

[339] Although not strictly accurate, we will continue to use the traditional term 'passive aorist' without quotation marks. The same practice is followed by Kümmel, whose 1996 monograph on the passive aorist (henceforth 'Kümmel') is an indispensable resource on these forms.

was originally the neuter singular of an *i*-stem adjective; the *Musterbeispiel* is Gk. τρόφις 'grown up' (: τρέφω 'nourish'), an isolated word that, as an adjec-tive, appears only twice in the entire Greek corpus. Kümmel is unable to explain, however, why so marginal a form (rather than, say, the participle in *-tá-* or any of a variety of more robust formations) should have been selected to take the place of a perfectly well-formed 3 sg. *-*a* < *-*o,* or why, for instance, the 3 pl. in -*ra*[*n*] was not replaced at the same time by the corresponding adjectival neuter plural in *-ī< *-*i-h*$_2$. Questions of this kind can be multiplied.[340] In fact, the 'nominal' approach to the problem of the 3 sg. passive aorist is a counsel of despair, born of the unprecedented and dismaying spectacle of a middle paradigm with ablaut. But the obvious alternatives are unattractive as well. An ambitious attempt to explain the pattern *ábodhi* : *abudhran* on the basis of a more familiar kind of middle was made by Insler (1968), who argued, perfectly reasonably, that forms like *ábodhi, áyoji, ápādi,* etc. might have been altered from earlier **ábhaudha, *áyauja, *ápāda,* with the normal ending *-*a*. But Insler's next step—deriving **ábhaudha, *áyauja, *ápāda* from still earlier **ábhudha, *áyuja, *ápada* by means of an elaborate series of analogies with the perfect (332 ff.)—was not convincing. The formal and semantic links between the passive aorist and the perfect are too weak to motivate the transformation of an inherited aorist type **ábhudha* : **ábhudhra, *áyuja* : **áyujra, *ápada* : **ápadra,* with regular and consistent zero grade, into the morphological anomaly of an ablauting middle.[341]

§90. A clue to the origin of the passive aorist is afforded by its distribution. It is generally recognized that the *non*-passive, simply intransitive, use of the passive aorist represents its earliest and most basic function. Triplets like the following, in which an intransitive aorist, marking entry into a state, occurs beside a stative perfect and an intransitive present in *-ya-*, make a particularly

[340] More generally, it is worth noting that none of the early IE languages ever replaces the aorist with a periphrastic construction. Within the context of the PIE tense-aspect system, the natural candidates for periphrastic renewal are the imperfect, which invites replacements of the type BE + imperfective / progressive verbal adjective (cf. Lat. *dūcē-bam,* OCS *vedě-axŏ* 'leading I-was' = 'I was leading'), and the perfect, which invites replacements of the type BE / HAVE + resultative / stative verbal adjective (cf. Lat. *ductus sum,* Skt. *nīto 'smi* 'having-been-led I-am' = 'I have been led', Hitt. *appan ḫarmi* 'taken I-have / hold' = 'I have taken'). The Slavic type OCS *ve(d)lŏ jesmŏ* 'having-led I-am' = 'I led', which tends to replace the aorist *vědŏ* 'I led', is not a real counterexample, since the aorist in Slavic is a simple past tense with none of the 'perfective' attributes that the aorist had in late PIE and early Indo-Iranian.

[341] In a more recent publication, Insler (1995: 102) abandons his 1968 analysis in favour of a view similar to the one taken here.

archaic impression:

Table 6.1

Middle root aorist	Perfect	i̯e/o-present	Root stative-intransitive
Arm. barjaw 'went up'[342]	Ved. babṛhāṇá-'elevated'	Hitt. parkiya-	Toch.A pärkatär
Ved. ábodhi 'awoke'	Ved. bubudhāná- Gk. πέπυσται 'understands'	Ved. búdhyamāna-	OCS bъditь
Ved. ajani 'was born' Gk. ἐγένετο Arm. cnaw	Ved. jajñé Gk. γέγονε	Ved. jā́yate OIr. gainithir	—
Gk. λέκτο 'lay down'	Gk. λελόχυῖα 'woman in childbed'	OIr. laigid OE licgan	Hitt. lagāri 'bends (intr.)' OCS ležitь
Ved. aroci 'shone forth'	Ved. ruroca, -ucé	—	Toch. B lyuketär
Ved. ámata (=GAv. maṇtā) 'remembered'	Ved. mamnā́t(h)e Gk. μέμονε Go. man	Ved. mányate Gk. μαίνομαι 'run mad' Or. ·moiniur	Lith. míni OCS mъnitь Go. munaiþ
Ved. ámṛta 'died' Arm. meṙaw[343]	Ved. mamā́ra	Ved. mriyáte Lat. morior	—
Ved. mṛ́ṣanta 'forgot'	Ved. mamárṣa	Ved. mṛ́ṣyate	Toch. B märsetär
Ved. ásādi 'sat down'	Ved. sasā́da	OE sittan Arm. hecanim	Lith. sė̃di OCS sěditú
—['fell asleep']	Ved. suṣupuḥ	RCh.Sl. u-sъpljǫ 'fall asleep' (?)Ved. supyate	OCS sъpitь 'is asleep' (?)Hitt. šuppari 'falls asleep'
Ved. tṛ́ṣāṇá- 'thirsty'	Ved. tātṛṣúḥ, -āṇá-	Ved.tṛ́ṣyant- Go. þaursjan	OHG dorrēn (<*þurzai-) 'dry up'
—['broke (intr.)'][344]	Gk. entity foundθᾱγε<!fêfθᾱγε	—	Toch. B wokotär 'is broken'
Ved. aviśran 'entered'	Ved. vivéśa, -iśe	—	(?)Toch. A wikatär 'disappears'[345]

Similar to these, but in part transitive and with a middle root aorist in 3 sg. *-ta,* are

passive aorist	perfect	i̯e/o-present
ábodhi, abudhran 'awoke'	*bubudhāná-*	*búdhyamāna-*
ájani 'was born'	*jajñé*	*jā́yate*
ápādi, ápadran 'fell'	*papā́da*	*pádyate*
áśoci 'was kindled'	*śuśukvā́ṃs-*	*śúcyati*
tṛ́ṣāṇá- 'thirsting'[346]	*tātṛraṇá-*	*tṛ́ṣyant-*

The Vedic pattern seen in these forms is simply the Indo-Iranian manifestation of a more general phenomenon. Many PIE roots denoting entry into a state were associated in the parent language with a characteristic array of aorist, perfect, and present stems, forming what may be called, somewhat inaccurately but usefully, a *stative-intransitive system.*[347] The typical constituents of stative-intransitive systems at the PIE level were (1) a middle root aorist, which more often than not surfaces as a passive aorist in Indo-Iranian; (2) a stative perfect; (3) a 'stative-intransitive' *i̯e/o*-present of the type seen in Ved. *búdhya-*, *jā́ya-*, *mánya-*, etc.; and (4) a 'stative-intransitive' athematic root present in 3 sg. *-*ó(r)*. The last of these, most commonly evidenced by a Tocharian class III / IV present in 3 sg. A *-atär,* B *-etär* (class III) or *-otär* (class IV), a Germanic class III weak verb in 3 sg. *-*ai*[þ], and / or a Balto-Slavic present in *-ī̆-, requires a brief digression.

§91. In Jasanoff 1978*a* a new analysis was presented of the '*ē*-verbs' or '*ē*-statives' that appear in the majority of IE traditions. That analysis uncontroversially assumed a PIE stative morpheme *-*eh*$_1$-, with reflexes in a wide variety

[342] To this subtype also belongs the etymologically difficult *täm* - 'be born', with an *s* -preterite (A *tamät,* B *temtsate*) and the remains of a present in *-näs* - (A *tämnäṣtär* 'is born'), but no thematic present.

[343] *Pace* Oettinger 313 f.

[344] On the forms and their interpretation see Morpurgo Davies 1982–3: 261 f. I am grateful to Prof. Morpurgo Davies for helpful discussion of this word.

[345] A full survey of the literature on *u̯óid - / *u̯id -' is given by di Giovine (1996: 127 ff.), whose own view favours an inner-IE loss of reduplication.

[346] To which can probably be added OIr. *ad·condairc* 'saw', although the possibility of an underlying root aorist cannot be altogether excluded.

[347] Corresponding to a probable, though unattested 3 sg. **átarṣi*.

of formations around the family (e.g. the Latin present type *taceō, -ēre* 'be silent', the Greek types ἀνθέω, -ῆσαι 'bloom' and ἐμάνην, -ῆναι (aor.) 'run mad', the Baltic type *senéju, -ėti* grow old' and its Slavic counterpart *starějǫ, -ěti* 'id.', the Latin inchoatives in *-ēscō,* and the Hittite 'fientives' in *-ēš(š)*-, etc.). Two new claims, however, were made. The first was that *-*eh*$_1$- was not properly a verbal suffix at all, but was extracted from a nominal construction—specifically, the predicate instrumental construction associated in the Rigveda with the adverbs *gúhā* 'in concealment' and *mŕ̥ṣā* 'in vain' (122–6). This hypothesis, which has since proved its utility in a number of ways, will be taken for granted here.[348] The second claim, more immediately relevant to the problem

[348] With probable, though unattested 3 sg. **ámr̥ṣṭa* ; a transitive **ámarṣi* 'forgot' would have no parallel in the synchronic grammar of Vedic. The former existence of just such a form, however, is suggested by the transitive value of the 3 pl. injunctive *mr̥ṣranta,* corresponding to a transitive indicative **ámr̥ṣran.* Note also transitive *ájuṣran* 'took a liking to' (§97).

of the passive aorist, was that the supposed ē-statives of Tocharian and Germanic, as well as certain of the Balto-Slavic forms traditionally thought to contain the suffix *-*eh*$_1$-, were in fact reflexes of a different and unrelated formation.

The putative ē-verbs of Tocharian are the overwhelmingly intransitive, though usually processual rather than stative, presents of classes III and IV, which *LIV* (366 and *passim*), following Ringe (1991: 83 ff. and 1996: 57 f.), traces to the supposed PIE 'essive' type in *-*h*$_1$*i̯e/o*-. There are insuperable phonological and morphological objections to this view. The pre-Tocharian forerunners of class III forms like A *pärkatär* 'ascends' and B *lipetär* 'is left over', and class IV forms like B *wokotär* 'breaks open' are in fact unproblematically reconstructible as **bhr̥ĝh-ó-tor,* **lip-ó-tor,* and **u̯ag-ó-tor*—thematic or the-matized deponents with 'persistent' *o*-colour of the thematic vowel.[349] And since persistent *-*o*- implies an originally dentalless 3 sg. in *-*or* or *-*oi* (cf. §33), **bhr̥ĝh-ó-tor,* **lip-ó-tor,* and **u̯ag-ó-tor* can in turn be projected back to still earlier **bhr̥ĝh-ór,* **lip-ór,* and **u̯ag-ór*.

The situation is similar in Germanic. The class III weak verbs in 3 sg. *-*aiþ* (e.g. Go. *habaiþ,* 3 pl. *-*and* 'have', *munaiþ,* -*and* 'have in mind', OHG *lebēt,* -*ēnt* 'live') frequently correspond to forms in *-ē- elsewhere in the family (cf. e.g. Lat. *habēre* 'have', Lith. *minė́ti* 'remember', OCS *pri-lьpě́ti* 'stick to'), but a formal connection between Gmc. *-*ai*- / *-ā- and PIE *-*eh*$_1$—-whether via *-*eh*$_1$*i̯e/o*- or * -*h*$_1$*i̯e/o*- —is out of the question.[350] The Germanic forms point rather to a middle paradigm in 3 sg. *-*ai* < *-*oi,* with renewal of *-*ai* to *-*aiþ* as in **hangaiþ* 'hangs

[349] The phrase is calqued on the term 'Caland system', as used by Nussbaum (1986). In the discussion that follows, the term 'stative-intransitive' is merely a label, inspired by the traditional (and equally inaccurate) description of presents like *mriyáte* (= Lat. *morior*) and (transitive!) *mányate* (= Gk. μαίνμαι) as 'stative-intransitive *i̯e/o* -presents'.

[350] The peremptory dismissal of this analysis by Harðarson 1998 (325 f. n. 7) ignores, *inter alia,* the following facts:(1)*-*eh*$_1$- is a Caland suffix, alternating with *-*ro*-, *-*i*-, *-*es*-, and other nominal suffixes according to a regular pattern (cf. **h*$_1$*rudh-éh*$_1$- 'be red' (Lat. *rubēre,* Lith. *rudė́ti,* etc.) : **h*$_1$*rudh-ró-* (Lat. *ruber,* Toch. B *ratre,* etc.) : **h*$_1$*rudh-í-* (Ved. *rudhi-krā́-* 'scattering blood') : **h*$_1$*réudh-es-* (Gk. ἐρευθος); **h*$_2$*ek-éh*$_1$- 'be sharp' (Lat. *acēre*) : **h*$_2$*ék-ró-* (Gk. *ἀκρος,* OCS *ostrъ,* etc.) : **h*$_2$*ék-i-* (Gk. ἀκίς) : **h*$_2$*ék-es-* Lat. acus, -eris; etc.˜. No other verbal suffixes participate in Caland alternations, and for good reason: while Caland systems consist of parallel derivatives (in *-*ro*-, *-*i*-, etc.) of root nouns (cf. OIr. *rú* 'redness' < **h*$_1$*rudh*-), the principal PIE tense / aspect stems are derivationally based not on root *nouns,* but on roots proper. Since the existence of an instrumental **h*$_1$*rudh-éh*$_1$ 'with redness' is *presupposed* by the corresponding Caland system, its availability to serve as the basis for an 'ē-verb' **h*$_1$*rudh-éh*$_1$- (+ *-*i̯e/o*-, *-*s(ḱe/o)*-, etc.) can be assumed, so to speak, free of charge (cf. Nussbaum 1999: 404, Schindler 1980: 392).(2)*-*eh*$_1$- also appears in Latin compounds of the type *calefacere* 'make hot' (: *calēre* 'be hot'), *ārefacere* 'make dry' (: *ārēre* 'be dry'), etc., where the first term is obviously a nominal form (cf. archaic *facit ārē, ferue bene facitō* 'bring it to a good boil', etc.). The same is true of the imperfect type seen in Lat. *calēbam, dūcēbam* 'I used to lead' (≅ OCS impf. *veděxъ(dot)* 'id.').(3)*-*eh*$_1$- cannot be assigned any identifiable function within the traditional framework of PIE verbal categories; 'ē-verbs' may be either stative presents (e.g. Lat. *rubeō,* -*ēre,* probably Hitt. *dannatteszzi* 'is empty' (Watkins 1971: 72 ff.)), inchoative presents (e.g. Lat. *rubēscō,* Hitt. *dannatteszzi* 'becomes empty'), stative preterites (e.g. Lith. *minė́jau* (replacing earlier **minė̃-s-*) 'I had in mind, remembered', OCS *pri-lьpěxъ* 'I stuck to, adhered'), or true aorists (e.g. ἐμάνην 'I went mad', Lith. *atsiminė* 'brought to mind, remembered', *gimė* 'was/were born'). Nothing is gained by inventing ad hoc and redundant categories like 'essive' and 'fientive', which in no way capture their full range of meanings.Harðarson is correct, however, in objecting to the specific mechanism by which I tried in 1978 to explain the rise of finite verbal forms from predicate instrumentals. As will be set forth at greater length elsewhere, I now believe that there were three basic channels for the development of 'ē-verbs':(1)Predicate instrumental X-*eh*$_1$ 'with X-ness ⇒ present X-*eh*$_1$*i̯e/o*- 'be with X-ness, be X' (**h*$_1$*rudh-éh*$_1$ ⇒ **h*$_1$*rudh-eh*$_1$*i̯e/o*- 'be red'; similarly **h*$_1$*rudh-eh*$_1$*-s(ḱe/o)*- 'become red'). Here belong the typical stative and / or inchoative presents of Italic, Celtic, Balto-Slavic, Greek, Anatolian(!), and probably Armenian.(2)Predicate instrumental X-*eh*$_1$ 'with X-ness' ⇒ abstract noun X-*eh*$_1$*-ti-* '(state of) being with X-ness, being X' > (Balto-Slavic) 'to be with X-ness, to be X'. From such abstracts, reinterpreted as infinitives, Balto-Slavic mechanically created stative preterites (misleadingly termed 'aorists') in *-*eh*$_1$*-s-* (**h*$_1$*rudh-éh*$_1$ ⇒ **h*$_1$*rudh-eh*$_1$*-tí-* '(state of) being red > to be red' ⇒ **h*$_1$*rudh-éh*$_1$*-s-m̥* 'I was red').(3)Predicate instrumental X-*eh*$_1$ 'with X-ness' ⇒ verbal adjective X-*eh*$_1$*-(e)nt-* 'having become with X-ness, having become X'. From such verbal adjectives, reinterpreted as aorist participles, Greek back-formed a finite aorist paradigm (**mn̥(n)-éh*$_1$- 'minded, having in mind' ⇒ **mn̥(n)-éh*$_1$*-nt-* 'having become minded, having thought of' ⇒ **mn̥(n)-éh*$_1$*-m* 'I became minded, thought of, remembered').

(intr.)' < *_hangai_ (= Hitt. _gangattari_; cf. §48). We can thus reconstruct pre-Gmc. *_mn̥(n)-ói_ 'has in mind' and *_lip-ói_ 'lives' < * 'hangs on', representing still earlier *_mn̥(n)-ór, *lip-ór_. That these forms were athematic is shown by the fact that the _thematic_ ending *-_oi_ was remade to *-_otoi_ in Germanic (cf. Go. 3 sg. pass. _bairada_).

In Balto-Slavic, the type Lith. _senė́ju, -ė́ti,_ OCS _starějǫ, -ěti_ is denominative only. Primary or 'deverbative' statives have presents in -_i-_ (Baltic; cf. Lith. 3 p. _mìni,_ inf. -_ė́ti,_ 3 p. _bùdi, -ė́ti_ 'be awake') or *-ī- (Slavic; cf. OCS 3 sg. _mrъnitъ,_ inf. -_ěti,_ 3 sg. _bъditъ,_ inf. -_ěti,_ 3 sg. -_lьpitъ,_ inf. -_ěti_), which cannot go back to presents in *-h_1-_ie/o_-,[351] but ultimately rest on athematic middles like their Germanic counterparts. The point of departure was the 3 pl., where the middle ending *-_n̥toi_ / *-_n̥tor_ (replacing earlier *-_roi_ / *-_ro(r)_) regularly yielded *-_intoi_ / *-_intor,_ with an *-_i-_ that was morphologically reanalysed as a stem vowel and generalized to all persons and numbers. Slavic subsequently identified the resulting conjugation in *-ĭ-, by now mechanically activized, with that of the inherited iterative-causatives in *-ī- < *-_e̯ie-_ (type OCS _prositъ, -iti_ 'ask'). The result was a mixed paradigm, with *-ī- (< *-_e̯ie-_) before consonantal endings, but -_ętъ_ (< *-_inti_ < *-_n̥t-_) in the 3 pl.[352]

Taken together, the Tocharian class III / IV presents of the type B _lipetär, wokotär,_ the Germanic class III weak verbs of the type *_munaiþ, *libaiþ,_ and the Balto-Slavic presents of the type Lith. _mìni, bùdi,_ OCS _mrъnitъ,bъditъ, -lьpitъ,_ point to a single PIE formal category. Morphologically, the hallmarks of this formation were zero grade of the root, athematic middle inflection, and the dentalless ending *-_o(r)_ in the 3 sg. Functionally, the presents in 3 sg. *-_o(r)_ denoted a non-perfective change of state—a value that tended to shift toward actual stative meaning as new ingressive and inchoative formations arose in the daughter languages.[353] Since exactly the same meanings are also associated with stative-intransitive _ie/o_-presents of the type *_mn̥-ie/o-_, *_ĝn̥h$_1$-ie/o-_, etc., the forms in question may be referred to as 'root stative-intransitive presents', or simply 'root stative-intransitives'.[354] Individual root stative-intransitives can

[351] See Jasanoff 1978_a_ : 35 ff. The idea that PIE formed 'presents' in *-h_1-_ie/o_ - to 'aorists' in *-eh_1 - is undercut from the start by the twin facts that *-eh_1 - was not an aorist marker in the parent language, and that the normal result of adding *-_ie/o_ - to *-eh_1 - was not *-h_1-_ie/o_ - but *-eh_1-_ie/o_ - (cf. n. 23). In Tocharian, Ringe maintains (1996: 57 f. , 119 f.) that *-h_1-_ie/o_ - yielded a special vowel *-ö-, which normally fell together with *-ë- (< PIE *-_o_ -), but which in class IV roots induced the special umlaut and rounding effects seen in B _wokotär_ < CToch. *_wǫkǫtär_. Notwithstanding its acceptance by Harðarson (op. cit. 332), this scenario postulates far too much apparatus for what it achieves. The most natural way to explain class IV is to assume that *_bhr̥ĝh-o_ -, *_lip-o_ -, and *_u̯aĝ-o_ - initially yielded *_pərk-o_ -, *_l(ə)ip-o_ -, and *_wak-o_ -, respectively, but that prior to the normal unrounding of PIE *_o_ to CToch. *_e_ (= Ringe's *ë), *_wak-o_ - underwent bidirectional assimilation to *_wǫkǫ_ -. For the phonology, compare B _onolme_ 'creature' from *_an-olmo_ - (i.e. *h_2_enh$_1$_ - 'breathe' + Toch. *-_olmo_ -); Ringe's implicit suggestion (120–1) that this form goes back to a sequence *_ana-olmo_ -, with a vocalized laryngeal, is unconvincing.

[352] The problems are discussed in Jasanoff 1978_a_ : 60 ff. The modern history of the reconstruction with *-h_1-_ie/o_ - goes back to Bennett 1962. Apart from the inherent unlikelihood that a sequence *-h_1-_ie-ti_ would have been vocalized as '*-_əi̯eti_ ' (> 3 sg. *-_aip_ ?) in Germanic (or anywhere else in Indo-European; cf. Pinault 1982)), the projected development is directly falsified by the present _arjan_ 'plough' < *h_2_erh$_3$_-_ie/o_ -, with 3 sg. _arjiþ,_ not *_araiþ_.

[353] Here again, the verb 'to plough' (Lith. _arìu,_ pres. _ãriu, ãria_ ; OCS _orati,_ pres. _orjǫ, orjetъ_) is the fatal counterexample.

[354] So in a similar vein, but apparently independently, Rasmussen 1993: 483 f.

be assigned to the parent language on the basis of word equations. Thus, a PIE **lip-ór* seems assured by the three-way equation Toch. B *lipetär* = Gmc. **libaiþ* = OCS *lьpitь,* and a PIE **mn̥(n)-ór* is suggested by the match between Gmc. **munaiþ* and Lith. *mìni,* OCS *mьnitь.* Also significant is the pair Toch. A **sikatär* (3 pl. *sikaṃtär*) 'floods' = Slav. **sьČitь* 'pisses' (with irregular infinitive **sьcati*). A small number of equations involving Indo-Iranian and Hittite examples underscore the survival of root stative-intransitives elsewhere in the family; cf. especially Ved. *duhé* 'gives milk' (= Gmc. **dugaiþ,* OIcel. *dugir* 'gives help'),[355] Ved. *vidé* 'is known (as), knows' (= Go. *witaiþ* 'observes'),[356] Hitt. *lagāri* 'bends, is bent' (= OCS *ležitь,* inf. *-ati* < **-ěti* 'lie'), conceivably also Hitt. *šuppari* 'falls asleep' (= OCS *sъpitь,* inf. *-ati* 'sleep'?). On the Hittite forms see further below.

§92. The existence of stative-intransitive systems in the parent language accounts for the kind of morphological patterning shown in Table 6.1 overleaf. Owing to synchronic derivational processes in the daughter languages, of course, not all the forms in this display necessarily go back to the parent language. Our purpose here, however, is not to establish a precise inventory of PIE forms, but merely to draw attention to patterns of co-occurrence that might not otherwise seem remarkable or that might escape notice altogether. Just such a pattern is the indirect association of class III / IV presents in Tocharian with passive aorists in Indo-Iranian. The number of actual instances in Table 6.1 where the same root surfaces with both a class III / IV present in Tocharian and a passive aorist in Vedic is very small; the only unshakable example is Toch. B *lyuketär* : Ved. *aroci,* possibly or probably joined by Toch. B *märsetär* : Ved. *mr̥ṣanta* and Toch. A *wikatär* : Ved. *aviśran.* Yet the co-occurrence relation is still significant, because it is not an isolated juxtaposition, but a direct reflection of the fact that *the roots which formed the nucleus of classes III and IV in Tocharian, and the roots which formed the nucleus of the passive aorist in Indo-Iranian, were the same.* It is of no small interest, therefore, to find that within Tocharian itself the presents of classes III and IV are closely linked to another, quite separate verbal formation with **o* : **ǝero* ablaut. This is Krause and Thomas's subjunctive class V, to which we must now turn.

[355] In both Germanic and Balto-Slavic, but especially the latter, the ingressive sense was typically taken over by new intransitive nasal presents of the type Lith. *bundù,* 3 p. *buñda* 'wake up', OCS *-bъ(d)nǫ,* 3 sg. *-bъ(d)netъ* 'id.', and Gmc. *waknan* 'id.' In Jasanoff 1978*a* (*passim* ; see also, however, p. 120) an unsatisfactory attempt was made to separate the forms with true stative meaning, which were traced to perfect middles (e.g. **(me)mn-ór* 'has in mind', **(bhe)bhudh-ór* 'is awake', etc.), from the forms denoting entry into a state, which were described as 'aorist presents' (e.g. **lukór* 'shines forth'). In fact, the distinction is only apparent—a consequence of the natural tendency of presents denoting a gradually evolving state to develop into simple statives.

[356] Compare the identically formed *LIV* present class 1C ('schwundstufiger Wurzelstativ'), to which the editors assign a handful of Hittite and Indo-Iranian forms.

ámata, GAv. *maṇtā* ‘remembered’	*mamnā́t(h)e*	*mányate*
ámṛta ‘died’	*mamā́ra*	*mriyáte*
mṛ́ṣanta, 2 sg. *mṛṣṭhā́ḥ* forgot’[357]	*mamā́rṣa*	*mṛ́ṣyate*

[357] Cf. also Gk. κλύθι, κλύτε ‘hear!‘

§93. The subjunctive in Tocharian is widely recognized to be a repository of older indicative forms that have acquired modal or future value (cf. Adams 1988: 51, Lane 1959). Thus, the class VI subjunctive B *kärnā-* (: *käry-* 'buy') goes back to earlier **kᵘrina-* and is exactly cognate with OIr. *crenaid* 'buys' and Ved. *krīṇáti* 'id.' (with -ī- for *-ĭ-); the indicative functions of the inherited present stem **kᵘri-n(é)h₂-* are continued by the formally renewed present *kärnāsk-* (class X). Similarly, A subj. VII *riñ-* (: *ri-n-* 'leave') goes back to **ri-n(e)u-*, which is clearly older than pres. X *rinäsk-* (< **rinu-sk-*);[358] B subj. I *yok-* (: *yok-* 'drink') continues the same athematic indicative **h_{1}ēᵘh-* (cf. Lat. *ēbrius* 'drunk') as pres. I *yok-*; and so on. The largest primary (i.e. non-causative) subjunctive class in Tocharian is class V, characterized by the stem-final vowel CToch. *-ē-. The type was highly productive; Krause and Thomas (1960: 227 ff.) give an incomplete list of over a hundred examples. The bulk of these forms are associated with the deponent presents of classes III and IV and with the nasal presents of class VI. Roots with *i-*, *u-*, and *ä-* vocalism, which are very numerous, usually show ablaut: *-i-* is replaced by *-ai-* (monophthongized to *-e-* in Tocharian A), *-u-* is replaced by *-au-* (> A *-o-*), and *-ä-* is replaced by A -a-/B -ā- in the active singular (cf. e.g. A 3 sg. *wekaṣ* but vb. n. *wikālune,* B 3 sg. mid. *wikātär* (: *wik-* (pres. III)); B 3 sg. *saukaṃ* but vb. n. *srukalñe* (: *sruk-* (pres. III) 'die'); A 3 sg. *tarkaṣ* but 3 pl. *tärkeñc,* B 3 sg. *tārkaṃ* but 2 pl. *tarkacer* < **tárkā-* (: *tärk-* (pres. VI) 'release').[359] The classic discussion of these ablaut phenomena is by Cowgill (1967), who, building on earlier work by Winter (1962: 32 f.), conclusively showed that the strong vocalism *-ai-* / *-au-* / *-ă-* goes back to a PIE *o*-grade. This fact is alone sufficient to dismiss the comparison, common in the older literature, of the Tocharian 'ā-subjunctive' with the ā-subjunctive of Italic and Celtic (cf. Lat. *feram, -ās,* etc., OIr. 3 sg. subj. *beraid, ·bera* < *-*āti*). Even if CToch. *ē were the phonological reflex of PIE and post-PIE *ā, which it is not,[360] the structure of the Tocharian forms would strongly favour taking the stem- final vowel from a zero-grade element of some kind, the obvious choice being a vocalized laryngeal. Cowgill's derivation of the ablauting class V subjunctives

[358] The corresponding perfect appears in Go. *daug* (= OHG *toug,* OE *dēag*) 'is fitting'; the fundamentally aoristic character of the root is shown by Gk. τὐγχάνω, aor. ἔτυχον 'hit upon, obtain'.

[359] Although *vidé* is analysable as a perfect middle in Vedic (cf. Kümmel 101 ff.), it patterns distributionally as a root stative-intransitive—a fact that will figure crucially in App. 2. A typologically similar case is Gk. εἵμαι 'I wear', synchronically a perfect middle but historically an ordinary present (: Ved. *váste,* Hitt. *wešta(ri)*).

[360] The development the class VII subjunctive sign -ñ- from *-*n(e)u* - (following van Windekens 1982: 225 f.) will be discussed elsewhere.

from older indicatives with **o* : *ẓero* ablaut and a root-final laryngeal abstracted from *seṭ* roots is implicitly accepted by all modern students of Tocharian historical grammar.[361]

But indicatives of what kind? It is when we turn to the problem of locating a PIE formation that could reasonably have yielded pre-Tocharian stems of the form **Co(R)C(H)- / *C(R̥)C(H)-* that problems arise. Cowgill's own tentative candidate for the source of the class V subjunctives was the perfect—a selection obviously motivated by the shared **o* : *ẓero* ablaut pattern of the two categories. The choice of the perfect, however, is unsatisfactory in almost every other respect. We have no evidence that the perfect ever underwent the evolution from a stative to an eventive category in Tocharian; yet the attested class V subjunctives, including those built to presents of classes III and IV, are overwhelmingly eventive in meaning. Indeed, there is surprisingly little evidence for the perfect in Tocharian at all; the only certain perfect reflexes are the reduplicated past (i.e. resultative) participles in A *-u* (with oblique *-unt*), B *-u* (obl. *-oṣ*) and *-au* (obl. *-aṣ*), such as A *kaknu,* B *kekenu* 'having become, γενόμενος (as if < **ĝoĝonh$_1$-u̯(o)s*); A *kākotu,* B *kakautau* 'split' (as if < **kokaudh-u̯(o)s*); A *wasu* 'worn' (as if < **u̯ou̯os-u̯(o)s*).[362] From such forms the suffix **-u̯(o)s* was extended to *all* Tocharian past participles, thus giving rise to the common unreduplicated type B *wikau* (obl. *-oṣ*) 'disappeared', *srukau* 'having died', *tärkau* 'released', etc. (= A *wiko, -ont,* etc.). These go back to preforms in CToch. **-ǫ-wäs,* obl. **-ǫ-weṣ*—evidently inner-Tocharian creations on the basis of earlier unreduplicated finite preterites in CToch. **-ǫ-* (< *-ā- < *-eh$_2$-*).[363] Forms like *wikau* and *srukau* are thus not really 'dereduplicated' at all, and they are not in any meaningful sense reflexes of the perfect. Reduplication is in fact very consistently retained in Tocharian, as is clear not only from the participial remains of the perfect, but from the treatment of the PIE reduplicated aorist as well. The latter formation was the source of the causative preterites of class II, which preserve their reduplicated structure both in the participle (cf. e.g. A *wawiku,* B *yaiku*; A *caclu,* B *ceclu* (: *täl-* 'lift, endure')), and in the finite forms that survive only in Tocharian A (3 sg. *cacäl, wawik,* etc.).

[361] For a survey of the basic facts of Tocharian historical phonology see Ringe 1996. Tocharian ablaut is characterized by an alternation between a 'high-vowel grade', characterized by one of the high vowels *i, u,* or ä (= [ɨ]) and usually going back to a PIE zero or *e* -grade; and a 'low-vowel grade', characterized by a mid or low vowel and usually going back to a PIE *o* - or (less often) ē-grade. The clarity of the system is frequently obscured by low-level phonological effects, such as the susceptibility to syncope of the 'Fremdvokal' ä and the Tocharian B change of å to *a* (= [ʌ]).

[362] It is now clear that, despite older views to the contrary, the normal Common Tocharian reflex of PIE *ā and tautosyllabic *eh$_2$ was the low mid vowel here noted *ǫ, which gave *a* in Tocharian A and *o* in Tocharian B (cf. A *pracar,* B *procer* 'brother'). The vowel transcribed asā in Tocharian was simply [a], representing CToch. **a* ; its usual PIE sources were **a,* '*ə', and **o* before a low vowel in the following syllable.

[363] So e.g. Adams 1988: 76 ff. CToch. **-a* - was also generalized as the theme vowel in other categories, notably including the preterites of classes I and II. An obvious typological parallel is provided by the spread of *-i* - as a union vowel in Sanskrit and Middle Indic.

Cowgill's cautious derivation of class V subjunctives from perfects has become the standard view. Yet the 'perfect' theory of the class V subjunctives bears a suspicious resemblance to the perfect theory of the *ḫi*-conjugation. In both cases the perfect is invoked to explain a formation whose existence was unknown when the classical model of the parent language was evolved in the late nineteenth century; in both cases the alleged reflex of the perfect shows certain perfect-like features (*o*-grade and the *ḫi*-endings in Hittite; **o* : *ϛero* ablaut in Tocharian) but conspicuously lacks reduplication and the appropriate stative meaning; and in both cases, not coincidentally, the proposed explanation has the effect of leaving the canonical picture of the protolanguage unchanged. We have seen that the h_2e-conjugation theory offers a better way to explain the supposed counterparts of the perfect in Anatolian. It also allows a better explanation of the ablauting class V subjunctives in Tocharian.

§94. The implications of our Tocharian : Indo-Iranian comparison can now be spelled out. In Tocharian, the roots that continue PIE stative-intransitive systems—the roots, in short, that make class III / IV deponent presents—also make class V subjunctives with **o* : *ϛero* ablaut. The following examples are typical:

class III / IV present	class V subjunctive	pre-Toch. subj. stem
A *pärkatär* 'ascends'	B 3 sg. mid. opt. pärkoytär	**bhorĝh- / *bhr̥ĝh-*
B *lipetär* 'is left over'	B 3 sg. mid. *lipātär*	**loip- / *lip-*
A *litatär* 'departs'	A 3 sg. act. *letaṣ,* vb.n. *litālune*	**loit- / *lit-*
B *l̥yuketär* 'shines'	(unattested)	(**louk- / *luk-*)
B *märsetär* 'forgets'	B 3 sg. act. *märsaṃ,* inf. *marsatsi*	**mors- / *mr̥s-*
A 3 pl. *sikaṃtär* 'are flooded'	A 3 sg. act. *sekaṣ*	**soik- / *sik-*
A *trikatär,* B *triketär* 'gets lost'	A 3 sg. act. *trekaṣ,* B *trikalñe*	**TroiK- / *TriK-*
A *wakatär,* B *wokotär* 'bursts open'	A 3 sg. act. *wākaṣ,* ger. II *wākal,* B 3 sg. act. *wākaṃ*	**u̯aĝ- / *u̯aĝ-*[364]
A *wikatär,* B *wiketär* 'disappears'	A 3 sg. act. *wekaṣ,* vb. n. *wikālune,* B 3 sg. mid. *wikātär*	**u̯oik- / *u̯ik-*

[364] The thematic aorist is reflected in Ved. *ávidat,* Gk. ἔ(*F*)ιδε, and Arm. *egit* 'found', which together constitute one of the best morphological equations in IE comparative grammar (cf. Ch. 8 n. 5). *LIV,* which anomalously denies PIE status to the thematic aorist, sets up a root aorist **u̯eid -* / **u̯id -*, from which both the thematic forms and Lat. *ūdī* 'I saw' are said to be derived (606 f.). But Lat. *ūdī* is better explained otherwise (see below), and it is scarcely credible that the Indo-Iranian, Greek, and Armenian forms represent independent thematizations.

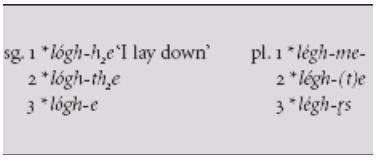
Compare with this a representative sample of the patterning of stative- intransitive roots in Vedic:

stative-intrans. *-ie/o-*present	passive aorist	pre-IIr. aorist stem
búdhya- 'awake'	*ábodhi, abudhran*	**bhoudh- / *bhudh-*
jáya- 'be born'	*ájani*	**ĝonh$_1$- / *ĝnh$_1$-*
pádya- 'fall'	*ápādi, ápadran*	**pod- / *ped-*
śúcya- 'be kindled'	*áśoci*	**k̑ouk- / *k̑uk-*

It is impossible to escape the conclusion that the proper comparanda of the pre-Tocharian subjunctive stems **loit- / *lit-*, **mors- / *mr̥s-*, **u̯aĝ- / *u̯aĝ-*, etc. are the pre-Indo-Iranian passive aorist stems **bhoudh- / *bhudh-, *pod- / *ped-*, etc. The ablaut patterns of the Indo-Iranian passive aorist and the Tocharian class V subjunctive are identical. The Indo-Iranian forms are synchronically middle, albeit with the active-like feature of paradigmatic ablaut; the Tocharian forms are basically active (cf. A *letaṣ, wekaṣ, wākaṣ,* etc., B *mārsaṃ, wākaṃ*), though usually intransitive and prone to adopt middle inflection under the influence of the corresponding deponent presents (cf. B subj. *lipātär, wikātär,* like pres. *lipetär, wiketär*).

How, then, should we reconstruct the common ancestor of the Indo-Iranian passive aorist and the Tocharian class V subjunctive? Recall that the root **legh-* 'lie down', which underlies a well-attested stative-intransitive system (cf. Gk. λέκτο, λελοχυῖα, OIr. *laigid,* OCS *ležitъ,* Hitt. *lagāri,* etc.), also underlies the Hittite *ḫi*-verb *lāk-* 'bend', which goes back to a *h$_2$e*-conjugation aorist **logh- / *legh-*. The paradigm of the aorist **logh- / *legh-* was reconstructed in §87; it is repeated here (Fig. 6.2):

FIGURE6.2



Precisely such a paradigm provides the best way to account for the passive aorist in Indo-Iranian and the class V subjunctive in Tocharian (Fig. 6.3):

FIGURE6.3

sg. 1	**bhóudh-h₂e* 'I awoke'	pl. 1	**bhéudh-me-*[a]
2	**bhóudh-th₂e*	2	**bhéudh-(t)e*
3	**bhóudh-e*	3	**bhéudh-r̥s*
sg. 1	**u̯áǧ-h₂e* 'I broke (intr.)'	pl. 1	**u̯áǧ-me-*
2	**u̯áǧ-th₂e*	2	**u̯áǧ-(t)e*
3	**u̯áǧ-e*	3	**u̯áǧ-r̥s*

Aorists of this type, which underlie most of our clearest examples of stative-intransitive systems, will be called 'stative-intransitive *h₂e*-conjugation aorists'. The study of these forms, as we shall see, sheds light both on the internal history of the PIE verbal system and on the relative chronology of the breakup of the family in the early dialectal period.

§95. Stative-intransitive *h₂e*-conjugation aorists, including the three examples just presented and many others (e.g. **bhorĝh-* / **bherĝh-* 'ascend', **ĝonh₁-* / **ĝenh₁-* 'be born', **louk-* / **leuk-* 'shine forth', **mors-* / **mers-* 'forget', **sod-* / **sed-* 'sit down', **su̯op-* / **su̯ep-* 'fall asleep'), were the root aorists *par excellence* of stative-intransitive systems. As *h₂e*-conjugation forms, they were by definition grammatically active. Yet in meaning they were close to middles, and the extended *averbo* to which they belonged included at least one component—the root stative-intransitive present type **lgh-ór, *u̯aǧ-ór, *bhudh-ór, *luk-ór,* etc.—which was *medium tantum*. The position of stative-intransitive *h₂e*-conjugation aorists in the verbal system of the emerging IE dialects was thus somewhat analogous to that of the inherited perfect. Just as 'active' perfects like Ved. *vavárta* (usually 'has directed, caused to turn') and Gk. λέλοιπε (usually 'has abandoned') tended to take on transitive and causative meanings and to be replaced by overtly middle forms in their original intransitive sense (*vāvr̥té* 'has turned (intr.)', λέλειπται 'is left'), the *h₂e*-conjugation aorists associated with stative-intransitive systems generally tended either to be transitivized or

medialized. The beginnings of this process can probably be dated to the parent language itself. In a very few cases the root aorists corresponding to stative-intransitive systems were 'true' middles rather than h_2e-conjugation forms; here belong e.g. Ved. *á́mata* (GAv. *maṇta*), *á́mṛta* for expected **á́māni,* **á́māri,* pointing to an inner-IE replacement **món-e,* **mór-e* (h_2e-conj.) ⇒ **mén-to,* **mér-to* (mid.).[365] In the great majority of cases, however, the conversion of aorists of the **logh-* / **legh-*, **bhoudh-* / **bheudh-* type into overtly middle forms was a sporadic development of the individual IE dialects. Examples, as we shall see, are to be found even in Anatolian.

§96. Anatolian inherited at least five clear cases of roots with stative-intransitive h_2e-conjugation aorists: **legh-*, **u̯ag̑-*, **bherg̑h-*, **leuk-*, and **su̯ep-*. The Hittite treatment of **logh-* / *legh-* has already been discussed: the outcome was the *ḫi*-verb *lăk-* (3 sg. *lākі*), with secondary transitivization vis-à-vis the middle (< root stative-intransitive) *lagāri* (= OCS *ležitъ*). The treatment of **u̯āg̑-* / *u̯ag̑-*, which gave the transitive *ḫi*-conjugation verb *wăk(k)-* 'bite', was exactly the same, except that here the expected root stative-intransitive **wakāri* (< **u̯ag̑-ór*; cf. Toch. B *wokotär*) happens not to be attested. The roots **bherg̑h-*, **leuk-*, and (less clearly) **su̯ep-*, however, present a fundamentally different picture. **bherg̑h-* and **leuk-* are represented not by transitive *ḫi*-verbs **părk-* *'raise' and **lŭk(k)-* *'light, set on fire' in Hittite, but by the simple intransitive middles **parkta* 'goes up' (3 sg. impv. *par(a)ktaru*) and *lukta* (*lukkatta*) 'grows light' (3 sg. pres.). These are probably best analysed as inner-Anatolian medializations (**bh(e)rg̑h-(t)o,* **l(e)uk-(t)o*) of older **bhorg̑h-* / **bherg̑h-* and **louk-* / **leuk-*—possibly low-level, semantically motivated substitutions of the middle for the active, as in PIE **mén-to* for ***món-e* (cf. above), or possibly oppositional intransitives correlated with the no longer extant transitive actives **pārkі* and **lūk(k)i* (like *lākі* and *wākі*).[366] (A much more remote possibility, given the *t*-endings and apparent root accentuation of *parkta(ru)* and *lukta,* is that these forms go directly back to root-stative intransitive presents of the *lagāri* type.) In the less clear-cut case of the root **su̯ep-*, the archaic-looking *šuppari* 'falls asleep' can be taken either as a direct medialization like *parkta(ru)* and *lukta,* or as an underspecified writing for the root stative- intransitive **šuppāri* (= OCS *sъpitъ*). The byforms *šuppa, špuppatta,* and

[365] The vowel of the reduplication syllable in Tocharian always goes back to PIE **-o* -; or rather, it has the form it would have had if the corresponding PIE form had reduplicated with **-o* -. The starting point was no doubt in the perfect, where structures of the type **Te-To(R)T* - were remade to **To-To(R)T* -, just as OLat. *memordī* (: *mordeō* 'bite') and *spepondī* (: *spondeō* 'vow') were remade to classical *momordī* and *spopondī*.

[366] For the reconstruction **-o-wäs* in the nom. sg., see Thórhallsdóttir 1988: 189 ff. The pre-Tocharian preterite in **-o* - < *-ā- was the Tocharian counterpart of the 'ā-preterite' of Italic, Celtic, and Balto-Slavic.

šuptari tend to support the first interpretation. But whatever the details, the general picture in Hittite is clear enough: two of the five inherited stative-intransitive h_2e-conjugation aorists yielded transitivized *ḫi*-verbs (*lāki, wāki*), and at least two of the remaining three were replaced by 'normal' intransitive middles (*parkta(ru), lukta,* possibly *šup(t)a(ri)*).[367]

The treatment of stative-intransitive h_2e-conjugation aorists in Tocharian was in some respects more conservative than in Hittite. The class V subjunctives corresponding to *pärk-, lip-, märs-, wāk-, wik-*, and other stative-intransitive roots remained active in some cases and were medialized in others (cf. §94), but never developed secondary transitive readings. Thus, for example, the Tocharian B subjunctive 3 sg. act. *wākaṃ* 'will burst open' gives a better picture of the meaning of the PIE source form **u̯ā́ǵ-e* than does the cognate Hittite 3 sg. act. *wāki* 'bites'. On the other hand, Tocharian innovated drastically in other ways—by vastly extending the domain of the stem vowel *-ē-, by apparently generalizing zero grade at the expense of *e*-grade as the weak vocalism,[368] and, above all, by abandoning the difference between the *mi-* and h_2e-series of endings. The endings of an active class V subjunctive are the same as those of any other active subjunctive, or of any active present.

The Indo-Iranian reflex of the aorist type **logh- / *legh-*, **bhoudh- / *bheudh-*, etc. was the passive aorist. Two of the most problematic characteristics of this formation—the ending *-i* and the absence of distinctive first and second person forms—will best be deferred to §121, when our survey of h_2e-conjugation aorists is complete. But the essential point to note about the relationship between Ved. *ábodhi* : *abudhran,ápādi* : *ápadran,* etc. (= IIr. **ábhaudhi* : **ábhudhra, *ápādi* : **ápadra*) and PIE **bhóudh-e* : **bhéudh-r̥s, *pód-e* : **péd-r̥s,* etc. can be fully appreciated now: *the Indo-Iranian 'paradigm' of the passive aorist, such as it is, is the partial medialization of its PIE* h_2e*-conjugation predecessor.* The medialization process was complete in the 3 pl., where the replacement of PIE **bhéudh-r̥s* by pre-IIr. **bhudh-ró*[369] was an event no different from e.g. the replacement of

[367] The strong and weak stems were no doubt initially distinguished in Tocharian, **u̯āǵ-* giving **wǫk-* and **u̯aǵ-* giving **wak-* (> AB *wāk-*). In the environment before the secondarily added stem vowel **-a-*, however, **-ǫ-* was evidently lowered to **-a-*, causing the two stem variants to fall together as **wak-a-* (> AB *wāk-ā-*).

[368] To which may be added the forms traditionally reconstructed "**ér-to* " 'started moving' (: Ved. *ārta,* ptcp. *arāṇá-*) and "**ór-to* " 'arose' (: Gk. ὦρτο); cf. n. 9 and §123 with n. 57.

[369] Note in this connection the factitive *parganu-* 'elevate, raise', perhaps standing in the same relation to a lost transitive **pärk-* as NH factitive *laknu-* to older *läk-*.

Common Tocharian 3 sg. **waikaṣ* 'will disappear' (= A *wekaṣ*) by Toch. B *wikātär* 'id.', or from any other renewal in which a form with quasi-middle meaning was equipped with overtly middle morphology. Similarly, the participle corresponding to the passive aorist, which presumably took the 'active' suffix *-*(é)nt-* in PIE, was medialized to IIr. *-*ānáⁿ-*, thus producing forms of the type *budhānáⁿ-* (*rucāṇáⁿ-*, *tr̥ṣaṇáⁿ-*,*śucānáⁿ-*, etc.), which are relatively common. The 3 sg. **bhóudh-e,* had it been treated in the same fashion, would have been remade to pre-IIr. **bhudh-ó,* and the resulting paradigm (> Ved. **áⁿbudha*[t] : *áⁿbudhran*) would have been a perfectly normal Indo-Iranian middle of the 'stative' type, like Ved. *áⁿduha*[t] : *áⁿduhran*. But for reasons that can now only be guessed at, **bhóudh-e* was *not* medialized to **bhudh-ó*; instead, it kept its *o*-grade, and in a later development that will be described in Ch. 7, acquired the analogical 3 sg. ending *-i*. The result was IIr. **áⁿbhaudhi*—neither a nominal form nor a bizarre transformation of 'regular' **áⁿbhudha,* but a *h₂e*-conjugation aorist that archaically retained its PIE vocalism.

The only other branch of the family with a significant attestation of root aorists is Greek. Here, to judge from the case of λἐκτο < **logh-* / **legh-* and ἐγένετο < **ĝonh₁-* / **ĝenh₁-*, there was complete medialization of the stative-intransitive paradigm, bringing about its complete merger with the paradigm of middle root aorists of the 'normal' type (ἔθετο,ἔδοδο, ἔκτατο, etc.). ἐγένετο forms a post-IE word equation with Arm. *cnaw* < **ĝénh₁-to*; the contrast with the more archaic Ved. *ájani* (+*jáni* 1X) < **ĝónh₁-e* is noteworthy. See further §122.

§97. The facts just surveyed invite a brief excursus on the inner-IE history of some of the verbal categories discussed in the preceding sections. The formal resemblance between the aorist type **logh-* / **legh-*, which properly denoted entry into a state, and the perfect, which denoted the state itself, is obvious and unmistakable. The following pairs, all by now familiar, are typical:

3 sg. *h₂e*-conjugation aorist	3 sg. perfect
**lógh-e* 'lay down'	**lelógh-e* 'lies'
**bhóudh-e* 'woke up'	**bhebhóudh-e* 'is awake'
**μeu̯ā́ĝ-e* 'broke'	**μeμeu̯ā́ĝ-e* 'is broken'
**ĝónh₁-e* 'was born'	**ĝeĝónh₁-e* 'is / has been born'
**lóuk-e* 'shone forth'	**lelóuk-e* 'shines'
**ḱóuk-e* 'was kindled'	**ḱeḱóuk-e* 'is aflame'
**mórs-e* 'forgot'	**memórs-e* 'is unaware of'

Other conspicuous cases include

**k*ʷóit-e* 'appeared' (cf. Ved. *áceti*)	**kʷekʷóit-e* 'appears' (cf. GAv. *cikōitərəš*, Ved. *cikitė*)
**ḱlóu̯-e* 'became famed as' (cf. Ved. *śrā́vi*, GAv. *srāuuī*)	**ḱeḱlóu̯-e* 'is famed as' (cf. Ved. *śuśruve*)
**ĝóus-e* 'took a liking to' (cf. Ved. *ájuṣran, juṣāṇá-*)	**ĝeĝóus-e* 'likes, enjoys' (cf. Ved. *jujoṣa, jujuṣė*)

The resemblance between columns 1 and 2 in the above lists does not extend mechanically to the corresponding plural forms, where the aorists had *e*-grade (3 pl. **bhéudh-r̥s*, **kʷéit-r̥s*, etc.) while the perfects had zero grade (**bhebhudhḗr*, **kʷekʷitḗr*). But this difference, as we have seen in connection with the Gathic Avestan pluperfect *cikōitərəš* (§29), is in fact probably secondary; the perfect originally had **o* : **e* ablaut as well.

Merely to view this display is to see the PIE perfect in a new light. The formal relationship of a perfect like **bhebhóudh-* / **bhebh(é)udh-* to an aorist like **bhóudh-* / **bhéudh-* is exactly comparable to that of a present like **dhédheh₁-* / **dhédhh₁-* 'put' to an aorist like **dhéh₁-* / **dhh₁-*. The perfect evidently originated within PIE as a kind of *h₂e*-conjugation (< protomiddle) reduplicated present, characterized by the same endings and the same ablaut pattern as the *h₂e*-conjugation (< protomiddle) root aorist on which it was derivationally based. By late PIE the synchronic situation had changed; the perfect had evolved into a separate non-eventive category, distinct from *mi*- and *h₂e*-conjugation presents alike.[370]

§98. The shift of the perfect from a reduplicated present to a non-eventive resultative stative created a structural gap which was filled by two more recent formations. One of these was the stative-intransitive present type in *-*i̯e/o*—-the class represented by Ved. *mányate* and *jā́yate* and OIr. *·moinethar* and *·gainethar*—which became especially productive in Indo-Iranian.[371] The other 'new' present formation, more archaic in structure and therefore presumably

[370] Here too may belong the etymologically difficult *au(š)* -/*u* - 'see', perhaps transitivized from an aorist **h₁ou* - / **h₁eu* - 'appear, be seen'. If so, the original sense would survive in the Hittite middle *uw(a)* - (3 pl. impv. *uwandaru,* etc.), formally matching Ved. *uvé* 'ich sehe an mir' (*LIV* 216). The substitution of 3 sg. *aušzi* for expected **awi* has been discussed in §72.

[371] Any such statement must be qualified by the fact that in the great majority of cases *e* - and zero grade can only be distinguished in Tocharian by their palatalization effects, which are notoriously susceptible to analogical alteration.

older, was the root stative-intransitive type in 3 sg *-*ór,* represented by examples like the following:

3 sg. h_2e-conjugation aorist	3 sg. root stative-intransitive
⋆*lógh-e* 'lay down'	⋆*lgh-ór* 'is lying down' > 'lies'[46]
⋆*bhóudh-e* 'woke up'	⋆*bhudh-ór* 'is waking up' > 'is awake'
⋆*bhóudh-e* 'woke up'	⋆*bhudh-ór* 'is walking up' > 'is awake'
⋆*lóuk-e* 'shone forth'	⋆*luk-ór* 'is shining forth' > 'shines'
⋆*mórs-e* 'forgot'	⋆*mr̥s-ór* 'is forgetting' > 'is unaware of'
⋆*sóik-e* 'flooded'	⋆*sik-ór* 'is flooding' > 'is awash'
⋆*sód-e* 'sat down'	⋆*s̥d-ór* 'is sitting down' > 'sits'

To these can be added three striking Indo-Iranian cases:

⋆*kʷóit-e* 'appeared' (Ved. *ćeti*)	⋆*kʷit-ór* 'appears' (cf. Ved. *cité* 'is recognized')
⋆*klóu̯-e* 'became famed as' (Ved. *śrávi,* GAv. *srāuui*)	⋆*kluu̯-ór* 'becomes/is famed as' (cf. GAv. *sruiiē* 'is famed')[372]
**u̯óid-e* 'came to light' (cf. Ved. *avedi* 'was found')	**u̯id-ór* 'comes to light, is known' (cf. Ved. *vidé* 'is known')[373]

and the thoroughly remarkable

**stóu̯-e* 'became publicly known' (cf. Ved. *ástāvi* 'was praised')	**stuu̯-ór* 'becomes / is publicly known' (cf. Hitt. *ištuwāri* 'becomes public', OHG *stuēt* < **stuwaiþ* 'atones for, stands condemned of')[49]

Here too the h_2e-conjugation aorist stands at the centre of an ancient derivational process. To understand the operative mechanism we have only to recall that the h_2e-conjugation : middle contrast is ultimately secondary, and that middles in 3 sg. *-*ór* and 3 pl. *-*ró(r)* presuppose older protomiddles in 3 sg. *-*é* and 3 pl. *-*érs* (cf. Fig. 6.4) Stripped of late changes in the form of the endings, the

[372] *LIV* classifies the perfect **dedórk -e* as 'sicher' (105); **k̑eklóu̯ -e* receives a question mark (297), implying merely 'eine gewisse Wahrscheinlichkeit' that it goes back to PIE.

[373] There is good reason to believe, in fact, that the shift from **u̯id -ór* 'is / becomes visible' to **u̯id -ór* 'is known' was not absolute; the older (root stative-intransitive) and newer (perfect middle) readings co-existed, perhaps as separate lexical items, in late PIE. In Germanic and Balto-Slavic the presential reading of **u̯id -ór* ('is / becomes visible') led to the back-formation of a present active **u̯éid-mi, *-si, *-ti* 'see' (NB: not **u̯ēid-mi, pace* Jasanoff 1978*a* : 108), which survives in OLith. *veizdmi* 'I see', OCS impv. *vižďь* 'see!' (< **-d-i̯ēs*), and possibly OE *wītan* 'guard, look after'. In relation to the new active, the stative-intransitive paradigm acquired the subsidiary value of a 'true' middle ('sees with reference to oneself', etc.), and in this capacity gave rise to Go. *witaiþ* 'observes', Lith. *pa-vỹdi* (inf. -*ėti*) 'envies', and probably OCS *viditь* (inf. -*ěti*) 'sees'. It is also possible that an athematic active **u̯éid-mi,* etc. existed in the prehistory of Greek, where (*F*)ε̈ἴδεται 'appears' can perhaps be seen as the old root stative-intransitive **u̯id-ór,* with analogical *e* -grade from the (lost) active *(*F*)ε̈ἶδω 'see'.

root stative-intransitive presents **l̥gh-ór* (**-ró(r)*), **bhudh-ór* (**-ró(r)*), **kʷit-ór* (**-ró(r)*) differ only in ablaut and accent from the corresponding stative- intransitive *h₂e*-conjugation aorists. The relationship between present and aorist in these cases is thus one of *internal derivation,* a term coined by the late Jochem Schindler to describe derivational processes that involve no affixation, but only ablaut and accent changes 'internal' to the stem. Internal derivation for Schindler consisted principally of noun-related processes like the formation of **u̯éd-ōr* 'water (collective)' from non-collective **u̯ód-r̥,* or that of **tomh₁-ó-* 'cutting (adj.)' (= Gk. τομός) from **tómh₁-o-* 'act of cutting' (= Gk. τομός), or that of **-p(é)h₂-tor-* 'father' in compounds (cf. Gk. εὐπάτωρ 'having a noble father') from free-standing **ph₂-tér-* (Gk. πατήρ).[374] But it is clear that the same mechanisms also played a role in the workings of the PIE verbal system—a role whose study has barely begun.

FIGURE6.4

h₂e-conj. aor.	<	protomiddle	root stat.-intrans.	<	protomiddle
3 sg. **lógh-e*	<	**lógh-e*	**l̥gh-ór*	<	**l̥gh-é*
3 pl. **légh-r̥s*	<	**légh-r̥s*	**l̥gh-ró(r)*	<	**l̥gh-érs*
3 sg. **bhóudh-e*	<	**bhóudh-e*	**bhudh-ór*	<	**bhudh-é*
3 pl. **bhéudh-r̥s*	<	**bhéudh-r̥s*	**bhudh-ró(r)*	<	**bhudh-érs*
3 sg. **ku̯óit-e*	<	**kʷóit-e*	**kʷit-ór*	<	**kʷit-é*
3 pl. **kʷéit-r̥s*	<	**kʷéit-r̥s*	**kʷit-ró(r)*	<	**kʷit-érs*

§99. The subject of *h₂e*-conjugation aorists is sufficiently complex to warrant an interim review of our findings. The existence of root aorists that inflected according to the *h₂e*-conjugation is predicted by our overall framework and supported by the substantial number of aoristic roots (**deh₃-*, **legh-*, **h₁er-*, etc.) that underlie root *ḫi*-verbs in Hittite. To find independent evidence for such aorists, however, we have had to look outside Anatolian. In the

[374] Strictly speaking, the apophonic replacement of **bhéudh-* by **bhudh-*' had nothing to do with the medialization process as such, but was simply another instance of the well-known tendency of zero grade to replace *e*-grade in paradigmatically 'weak' positions, especially in roots of the structure **CeRC-*. Note the distinction between the 'organic' zero grade of 3 pl. stative-intransitive *presents* of the type *duhré, vidré,* etc. (PIE **dhugh-ró(r), *u̯id-ro(r),* corresponding to 3 sg. **dhugh-ór, *u̯id-ór*), and the 'substitutive' zero grade of 3 pl. *aorists* of the type *abudhran, aviśran,* etc. (PIE **bhéudh-r̥s, *u̯éik̑-r̥s,* corresponding to 3 sg. **bhóudh-e, *u̯óik̑-e*). The older and newer zero grades are confused by Kümmel, who attempts (20) to derive the 3 pl. of the passive aorist from the paradigm of the non-aoristic 'stative.'

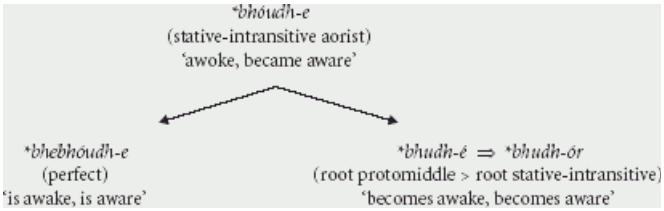
non-Anatolian languages two potential *h₂e*-conjugation aorist reflexes present themselves: the Indo-Iranian 'passive' aorist and the Tocharian class V subjunctive. The passive aorist (type Ved. 3 sg. *ábodhi* 'awoke', pl. *abudhran*) combines a strikingly deviant *o*-grade 3 sg. in *-i* with a more ordinary-looking 3 pl. in (Ved.) *-ran* (*-ram*); from a synchronic point of view, it can be described as a kind of middle root aorist with ablaut. The Tocharian class V sub- junctives (type A 3 sg. *wekaṣ* (< **waika-*) 'will disappear', pl. **wikeñc*) have *o*-grade throughout the active singular and zero grade elsewhere; they are typically active, even when associated, as they often are, with deponent class III / IV presents (cf. A *wikatär,* B *wiketär*). The two formations, linked by word equations, are clearly cognate. Both figure prominently in 'stative-intransitive systems'—families of related forms clustered about a root aorist that denoted a change of state. Our most important discovery thus far is that with a few lexical exceptions (PIE **mén-to, *mér-to,* etc.), the root aorists associated with stative-intransitive systems ('stative-intranistive aorists') were not ordinary middles, but *h₂e*-conjugation aorists with **o* : **e* (whence later **o* : *zero*) ablaut. The *o*-grade of *ábodhi* (< **bhóudh-*) is an archaism, the residue of a Tocharian-like active paradigm with *o*-grade throughout the singular. The more evolved IE languages show only normalized middles in the corresponding structural position. In Greek, for example, the form corresponding to *ábodhi* is the fully medialized thematic aorist ἐπύθετο 'became aware of, learned'.

The original *h₂e*-conjugation inflection of stative-intransitive aorists survives in Hittite, where two individual lexical items link the *ḫi*-conjugation to the nexus of forms just discussed. The first is *lăk-* 'bend (tr.)', corresponding to the stative-intransitive system meaning 'lie (down)' outside Anatolian (cf. OE *licgan,* Gk. λελοχυῖα, OCS *ležĭtь*). The PIE starting point was a *h₂e*-conjugation aorist **logh- / *legh-* 'lie down'. Hittite kept the old form (*lāki* < **lógh-e(i)*) but transitivized its meaning by polarization with the middle *lagāri* (**lgh-ór*) 'bends (intr.), is bent'; Greek kept the old meaning but medialized the form (λέκτο). The other key Hittite example is *wăk(k)-* 'bite', originally 'break (intr.)' (cf. Gk. perf. (f)έ(f)ᾱγε, Toch. B class III pres. *wokotär*). Here too the meaning in Hittite is secondarily transitive; both the original intransitive sense and the active morphology of the PIE stative-intransitive aorist **u̯āĝ- / *u̯aĝ-* survive in Tocharian (3 sg. subj. A *wākaṣ,* B *wākaṃ* 'will break (intr.)'). In the two or three cases where the intransitive value of a stative-intransitive aorist is retained in Hittite, the form is medialized (*parktaru, luk(kat)ta,* probably *šup(t)a(ri)*).

The discovery of stative-intransitive aorists sheds light on some of the oldest derivational processes in Indo-European. If it is true, as we have argued, that the PIE perfect was originally characterized by **o* : **e,* rather than **o* : *zero*

ablaut, then a perfect like 3 sg. **bhebhóudh-e* : 3 pl. **bhebhudh-ḗr* < ***bhebhéudh-r̥s* can be seen as a reduplicated derivative of the stative-intransitive aorist **bhóudh-e* : pl. **bhéudh-r̥s*. And if it is also true that the late PIE middle in 3 sg. **-(t)o(r)* / 3 pl. **-ro(r), *-nto(r)* goes back to an older protomiddle in 3 sg. **-e* / 3 pl. **-(e)rs,* then a 'root stative-intransitive present' like 3 sg. **bhudh-ór* : 3 pl. **bhudh-ró(r)* must reflect a parallel process of *internal* derivation. The situation is shown schematically in Fig. 6.5:

FIGURE6.5



Stative-intransitive aorists were thus not only an integral component of stative-intransitive systems; they were their very *raison d'être*.

Many questions remain. Still in need of explanation are the ending *-i* of the Indo-Iranian passive aorist, the rationale for the restriction of the *o*-grade of the passive aorist to the third person, and, within Anatolian, the affinities of the aorist-based *ḫi*-verbs that are *not* associated with stative-intransitive systems. Answers to these questions will emerge from the study of the more 'global' problem that forms the subject of Ch. 7—the relationship of the *ḫi*-conjugation / h_2e-conjugation to the PIE sigmatic aorist.

7 Aorists of the *h₂e*-conjugation: Part II

§100. With the discovery of *h₂e*-conjugation aorists we are finally in a position to confront a major problem that has been sidestepped thus far—the origin and distribution of the Hittite *ḫi*-conjugation 3 sg. preterite ending -š. In one sense, to be sure, there is no problem at all. According to a longstanding consensus (see e.g. Eichner 1975: 83, 91; Kronasser 1956: 191 f.; Sturtevant 1933: 258 f.), the *ḫi*-conjugation 3 sg. pret. in -š goes back to PIE *-*s-t,* the 3 sg. of the sigmatic aorist, which lost its *-*t* by regular sound change.[375] Spreading from a nucleus of inherited sigmatic aorists, the ending *-*s(t)*—so the argument runs—penetrated the *ḫi*-conjugation, where it supplanted the etymologically 'correct' 3 sg. in *-*e.*

Most of this is surely correct as far as it goes. As we have seen in §72, independent evidence for the otherwise lost final *-*t* is furnished by the 3 sg. form *aušta* 'saw', in which the final stop was protected from loss by virtue of its secondary identification with the *mi*-conjugation ending *-t(a).* And while Hittite is not rich in inherited verbal roots that can be shown to have formed an *s*-aorist in PIE, it has one very good such example in *nai-* 'lead (act.); turn, direct oneself (mid.)'. *nai-* is obviously cognate with Ved. *náyati* (= YAv. *naiieiti*) 'lead', which makes an *s*-aorist *anaiṣam,* 3 sg. *anaiḫ* (cf. GAv. 3 sg. subj. *naēšaṯ*). Despite the absence of any further verbal cognates, the antiquity of the Indo-Iranian *s*-aorist **năiš-* is guaranteed by the parallelism between the pair *náyati : anaiṣam* and the semantically related pairs **u̯ĕ́gh-e/o-* : **u̯ĕ́gh-s-* 'convey' (cf. Ved. *váhati* : *ávākṣam,* Lat. *uehō* : *uēxī*), **u̯édh-e/o-* : **u̯ĕ́dh-s-* 'lead' (cf. OCS *vedǫ* : *vĕsъ,* OIr. *fedid* 'goes' : *s*-subj. *fess-*), and **h₁néḱ-e/o-* : **h₁nĕ́ḱ-s-* 'carry' (cf. OCS *nesǫ* : *nĕsъ,* GAv. 1 pl. subj. *nāšāmā*). Within Hittite, the paradigm of *nai-* is particularly rich in sigmatic forms *outside* the 3 sg. pret. (e.g. 2 pl. impv. *naišten,* 2 sg. impv. mid. *naišḫut,* 2 pl. impv. mid. *naišdumat*)—exactly what one might

[375] Note that if this analysis is correct, the 3 sg. perfect **memón-e* provides another reason to believe that the corresponding 3 sg. aorist was originally **món-e,* replaced within the parent language by **mén-to* (cf. §95). A trace of the eventive, fully presential character of the perfect survives in the Greek 'intensive' type βέβρυχε, μέμῡκε, ἄνωγε, etc.

have expected to find if *nai-* was the locus from which sigmatic forms were introduced into the *ḫi*-conjugation as a whole. Nevertheless, puzzling questions remain. If it is really the case that the ending *-š(t)* was an intrusion from the *s*-aorist, why was there no comparable influx of sigmatic forms in the first and second persons, the plural, or the middle, and why was it specifically the *ḫi*-conjugation that was open to sigmatic interference? To answer these questions we will have to take a fresh look at the *s*-aorist itself.

§101. If there were nothing to go on but the evidence of Indo-Iranian, Greek, and the other IE languages that were known before the discovery of Hittite and Tocharian, the reconstruction of the PIE *s*-aorist would be entirely straightforward. The 'classical' *s*-aorist, as we glimpse it in these languages, had Narten ablaut, with lengthened grade in the active singular (cf. Ved. *ávākṣam, ánaiṣam,* etc.) and *e*-grade in the middle and perhaps the active plural (cf. Ved. 1 sg. mid. *áneṣi,* 3 sg. *áneṣṭa*).[376] There was also a well-developed *s*-aorist subjunctive, which had the expected *e*-vocalism of a 'short-vowel' subjunctive (cf. Ved. 3 sg. *vákṣat, néṣat*); Gk. 1 sg. subj. τέρψομαι (: τέρπομαι, aor. ἐτέρψάμην 'take pleasure'), 1 pl. ἐγείρομεν (: ἐγείρω, aor. ἠγερα 'wake'); OIr. *s*-subj. 3 pl. *˙ressat* (< **ret-s-e/o-* 'run'), *˙ainset* (< **aneg-s-e/o-* 'protect'). A special feature of the *s*-aorist system was the 2 sg. imperative in **-si* (cf. Ved. *vákṣi, néṣi*; OIr. **foir* 'help!' < **wo-ret-si,˙ain* 'protect!' < **aneg-si*), historically a haplologized 2 sg. subj. in **-sesi*.[377]

This more or less traditional picture, however, does not square well with the facts of Hittite or Tocharian. Like its Hittite counterpart, the active of the Tocharian *s*-aorist ('*s*-preterite') presents itself not as a full-fledged sigmatic category, but as an intrusive 3 sg. form embedded in an otherwise *s*-less paradigm. The relevant forms of Toch. A *prak-* / B *prek-* 'ask' and the *ḫi*-conjugation preterite of Hitt. *dă-* are shown alongside each other in Fig. 7.1. The shared restriction of the *-s-* to the 3 sg. in the two languages is rendered all the more significant by the fact that the non-3 sg. forms bear a strong family resemblance as well. As in Hittite, the non-sigmatic endings of the Tocharian *s*-preterite are of the perfect / h_2e-conjugation type. The Tocharian 1 sg. in **-wa* is an import from the preterite of 'long-vowel' roots, where the sequence **-oH-h_2e* yielded **-oHu* (probably **-oh_2u*) in the parent language; the resulting final **-ō̲u̯* was subsequently renewed as **-ō̲u̯a* (*vel sim.*) and resegmented as **-ō-u̯a* (cf. §40,

[376] *-yá* - became the productive mark of the present passive in Indo-Iranian (cf. *vidyáte* 'is found (as)', *chidyáte* 'is cut off', *kriyate* 'is done', etc.); its spread in this function was exactly matched by the passage of the corresponding h_2e -conjugation aorists to true aorist passives (*avedi* 'was found (omega)as)', *achedi* 'was cut off', *ákāri* 'was done').

[377] Cf. n. 28. The development from processual to stative meaning was completely parallel to the development of dialectal PIE **l̥gh-ié/ó* - 'lie down' to OIr. *laigid* and OE *licgan* 'lie' (stative), or that of PIE **mn̥-ié/ó* - 'bring to mind, turn over in one's mind' to Ved. *mányate* 'think, be minded' (stative). An original processual value must also be assumed to explain the passive meaning of root stative- intransitives like Ved. *cité* 'is recognized' in Indo-Iranian; again, the development was precisely the same as in the presents in *-yá* -.

with n. 70). Similarly, the Tocharian 2 sg. in *-*sta,* like the Latin 2 sg. perfect in *-istī* < *-*i-sta(i),* is a variant of PIE *-*ta* < *-*th₂e,* with an *-*s*- that ultimately goes back to the PIE *-*T+T*->=*-*TsT*- rule.[378] Nothing can be learned from the generic 1 pl. ending A -*mäs*/B -*m* or the utterly obscure 2 pl. in *-*sä,* but the 3 pl. in *-*är* (*vel sim.*) is an obvious reflex of the perfect / *h₂e*-conjugation ending *-*r̥* or *-*r̥s.* In all structurally significant details, therefore, the Hittite and Tocharian paradigms are identical.

FIGURE7.1

	Toch. A	Toch. B		CToch.	Hitt.
sg. 1	*prakwā*[a]	*prekwa*	<	*prek-(ä)wa	*daḫḫun*
2	*prakäṣt*	*prekasta*	<	*prek-(ä)sta	*datta*
3	*prakäs*	*preksa*	<	*prek-(ä)s-a(t)	*dāš* < *dā-s-t
pl. 1	*prakmäs*	*prekam*	<	*prek-(ä)mä-	*dāwen*
2	**prakäs*	*prekas*	<	*prek-(ä)sä	*datten*
3	*prakär*	*prekar*	<	*prek-är (or *-(ä)rä(s)?)	*dāir*

§102. The full significance of these facts, which were first noticed in the 1950s, has never been appreciated.[379] The mainstream Tocharian tradition, as represented, for instance, by Adams (1988: 82 f.), van Windekens (1982: 226) and Krause and Thomas (1960: 247), takes the *s*-preterite to be a hybrid of the *s*-aorist (A *prakäs,* B *preksa*) and the perfect (A *prakwā,* B *prekwa,* etc.); the implicit assumption is that the perfect and the aorist merged into a single functional category in pre-Tocharian, thus allowing the (formal) perfect to intrude on the domain of the (formal) aorist. A comparable blend of the perfect and *s*-aorist is posited for Hittite under the perfect theory, which crucially assumes a confluence of the perfect, aorist, and imperfect into a single Anatolian preterite category. But neither the Tocharian nor the Anatolian version of this

378 The archaic character of the pair *srāuiiē* : *śruuī/ śrā́vi* is correctly appreciated by Kümmel (152 ff.).

379 The roots **k̑ᵘ̯eit* -, **k̑leu* -, and **u̯eid* - seem originally to have had two sets of readings—one associated with the active ('catch sight of', 'hear', 'recognize visually' (*vel sim.*)), and the other associated with the middle and protomiddle ('become visually / audially / cognitively perceptible'). The middle / protomiddle values were archaically proper to the perfect as well, as can be seen e.g. from the intransitive sense ('appeared') of GAv. *cikōitərəš̌.* The topic is resumed in App. 2.

scenario is at all plausible on its own terms. On the Tocharian side, we have no independent evidence that the perfect lost its reduplication or became a preterite at all (cf. §93). Even if such evidence existed, it would be difficult to see why the form chosen to supplete the 3 sg. of the perfect would have been taken from the otherwise moribund *s*-aorist rather than, for example, from the productive preterite type in CToch. **-a-* (class I). The same objections can be raised from the Anatolian side. Quite apart from the more general difficulties associated with the perfect theory, it is hard to understand why the early Anatolians, if they had wished to replace their 3 sg. perfect in **-e,* would have turned specifically to the *s*-aorist, a category which they otherwise eliminated altogether.

In fact, the mere juxtaposition of these proposed histories, each of which faces nearly insuperable difficulties when considered individually, exposes the utter inadequacy of the standard approach. Even if we could believe that either Anatolian or Tocharian had (1) merged the perfect and the aorist into a single 'preterite' category, (2) replaced the 3 sg., and only the 3 sg., of the formal perfect by the formal *s*-aorist, and (3) eliminated the *s*-aorist everywhere else, the chances of exactly the same scenario having played itself out twice, once in Anatolian and once in Tocharian, are virtually nil.[380] The received view of the *s*-aorist, reasonable enough for the IE languages that were known before 1900, turns out to be a Procrustean bed as far as Anatolian and Tocharian are concerned. Nothing—not even the history of the reception of the laryngeal theory in mid-twentieth-century Germany—so well illustrates the way that a pre-existing set of assumptions about the protolanguage can bias the interpretation of new data. In fact, the curious blend of sigmatic and perfect-like forms that we find in Hittite and Tocharian is an obvious archaism. While there is no way that the paradigms in §101 could have arisen independently, the creation of the 'classical' *s*-aorist from an earlier *partly* sigmatic paradigm can easily be explained by levelling. We must conclude, therefore, that the standard theory of the *s*-aorist, which posits a stable and invariant **-s-* in all paradigmatic positions, is incorrect. The mixed paradigm of Hittite and Tocharian was a feature of the parent language itself.

§103. If the PIE ancestor of the *s*-aorist—we may call it the 'presigmatic' aorist—was a mixed category, we must ask ourselves exactly what it was a mixture of. The non-3 sg. forms of the active, as the evidence of Hittite and Tocharian shows, were non-sigmatic and took the perfect endings. These

[380] Otherwise Kümmel 135, who compares *ištuwāri* with the Vedic present middle *stáve* 'is praised' (: act. *stáuti* 'praises'). Both the accent and ablaut of the Hittite form make this impossible.

forms cannot, however, actually have *been* perfects, since they were functionally aorists, and the perfect, while well-positioned to develop into a preterite in the daughter languages, was clearly not serviceable as an aorist in PIE. In fact, the only PIE forms known to us which had the value of aorists and took the perfect endings were the ablauting h_2e-conjugation root aorists discussed in Ch. 6. In the light of our present knowledge, the PIE '*s*-aorist' fairly cries out to be interpreted as a h_2e-conjugation aorist whose 3 sg. active was replaced *within the parent language* by an unrelated suppletive form, originally proper to a wholly different paradigm. The source of this intrusive form, which had lengthened grade of the root and ended in *-*s-t,* cannot, of course, have been the *s*-aorist itself, which *ex hypothesi* did not yet exist.[381] An obvious possibility, which will be pursued below, is that it was the historical imperfect, aspectually reinterpreted, of an *s*-present of the Narten or *ganešzi*-type (< *ĝnḗh_3-s-ti*; cf. §78). But whether this idea is right or wrong, the descriptive paradigm of the PIE presigmatic aorist must be reconstructed as in Fig. 7.2:

FIGURE7.2

sg. 1	**prók̂-h_2e* 'I asked'	pl.	**prék̂-me-*	sg. 1	**nóiH-h_2e* 'I led'	pl.	**néiH-me-*
2	**prók̂-th_2e*		**prék̂-(t)e*	2	**nóiH-th_2e*		**néiH-(t)e*
3	**prḗk̂-s-t*		**prek̂-r̥s*	3	**nḗiH-s-t*		**néiH-r̥s*

It follows that we must distinguish at least two kinds of h_2e-conjugation aorists in the parent language. Both were characterized by **o* : **e* ablaut and the perfect / h_2e-conjugation endings. But while the one type denoted entry into a state and was typically associated with a stative perfect and a stative-intransitive root present in *-*ór,* the other was conspicuously 'active' in its semantics and characteristically *not* associated with a stative-intransitive system. It was a subset of this latter type that, for reasons yet to be explored, gave up its 3 sg. in *-*e* for *-*s-t* and thus became the ancestor of the *ḫi*-conjugation preterite in Hittite, the *s*-preterite in Tocharian, and the classical *s*-aorist of the other languages.

381 See further Watkins 1982: 261 f. and, at greater length, Nussbaum 1986: 102 ff. Schindler's groundbreaking work on internal derivation in the IE nominal system, informally presented in lectures at Harvard University in the 1970s, has never been published.

This result, like our original decision to set up h_2e-conjugation presents in Ch. 3, brings home once again the importance of distinguishing between the synchronic grammar of late PIE, which is partly accessible to us through the comparative method, and the historical rationale or 'explanation' for this synchronic grammar, which we can only recover by internal reconstruction. In the present case, the decision to set up a mixed, rather than a fully sigmatic (or fully non-sigmatic) paradigm for the parent language rests on the descriptive fact that virtually identical mixed paradigms are found in Hittite and Tocharian. It would clearly be desirable, at a deeper level of analysis, to know *why* the expected 3 sg. **prók̑-e* 'asked' and **nóiH-e* 'led' were replaced by **pr**é**k̑-s-t* and **n**é**iH-s-t* in pre-PIE—just as in Ch. 3 it was desirable, *ceteris paribus,* to know why the reconstructed form **mólh$_2$-e* should have meant 'grinds' and not e.g. 'is ground' or 'has been ground'. A possible scenario for the creation of the presigmatic aorist paradigm will be suggested in §§112 f. below, after our survey of the relevant middle, subjunctive, and optative forms is complete. But the problem of motivating the replacement **prók̑-e, *nóiH-e* ⇒ **pr**é**k̑-s-t, *n**é**iH-s-t* must be viewed in perspective from the outset. Even if it should prove impossible, six or seven thousand years after the fact, to discover the rationale for the peculiar PIE mixed inflection of the inaccurately named '*s*-aorist,' it is still far simpler to operate with a single unexplained suppletion in the parent language than to assume two separate and unexplained suppletions, one in Hittite and one in Tocharian.

§104. Reconstructing the middle of the presigmatic aorist is somewhat more complicated. In Hittite, the preterite middle of the *ḫi*-conjugation, where it is attested, is resolutely non-sigmatic (cf. 3 sg. pret. mid. *dattat* (NH) beside pres. *dattari; niati* (OH+; later *neyat, neyattat,* etc.) beside pres. *nēari,* etc.). In Tocharian, however, the middle of the *s*-preterite appears in two guises. The regular type has the union vowel **-a-* and is fully sigmatic, as shown in

FIGURE7.3

	Toch. A		Toch. B	
sg. 1	*präkse*	pl. *präksāmät*	*parksamai*	pl. *parksamt(t)e*
2	*präksate*	*präksac*	*parksatai*	*parksat*
3	*präksāt*	*präksant*	*parksate*	*parksante*

On the other hand, the 'bivalent' roots[382] *näk-* 'destroy / perish' (PIE **nek̂-*), *täsk-* 'burn (tr.) / burn (intr.)' (PIE **dheg^{u}h-*), *päk-* 'cook (tr.) / cook (intr.), grow ripe' (PIE **pek$_{\hat{u}}$-*), and *täm-* 'beget / be born' (PIE **dhem-*?), which systematically distinguish between transitive active and intransitive middle forms, combine normal *s*-preterite actives (e. g. A *ñakäs,* B *neksa* 'destroyed', B *tseksa* 'burned (tr.)', etc.) with intransitive *non*-sigmatic middles. The *s*-less forms, which, interestingly, have *o*-grade of the root, are directly preserved in Tocharian A: cf. 3 sg. *nakät* (pl. *nakänt*) 'perished' < **nok̂-to* (**nok̂-ŋto*); *tsakät* 'burned (intr.)' < **dhog$_{\hat{u}}$h-to; pakät* 'became ripe' < **pok$_{\hat{u}}$-to; tamät* 'was born' < **dhom-to (?).* The corresponding forms in Tocharian B have been sigmatized but retain their *o*-vocalism (3 sg. *nek*[*sa*]*te,* 1 sg. *tsek*[*sa*]*mai,* 3 sg. *tem*[*(t)sa*]*te*). Here too belongs the passive causative A 3 sg. *lyokät* 'was illuminated' (= B *lauk*[*sā*]*te*; act. A *lyokäs,* B *lyauksa*).[383]

The interpretation of these facts is not self-evident. It is almost inconceivable that the preforms **nok̂-to, *dhog$_{\hat{u}}$h-to,* and **pok$_{\hat{u}}$-to,* with their anomalous *o*-grade and synchronically irregular lack of **-s-*, are wholly recent creations. On the other hand, it would clearly be desirable, if possible, to connect the regular middle type (*präkse, präksāte, präksāt,* etc.) with its straightforward formal analogues in Indo-Iranian and Greek (Skt. *aneṣi, aneṣṭhāḥ, aneṣṭa,* etc.; Gk. ἐλυσάμην, ἐλύσα[σ]ο, ἐλύσατο,, etc.). In what follows, therefore, we will make the working assumption that the parent language had both types, employing the *s*-less middle for the intransitive paradigm of bivalent roots like **nek̂-*, **dheg^{u}h-*, and **pek^{u}-*, and the sigmatic middle for self-benefactive, reciprocal, and other 'true' middle functions.

§105. The curious mixture of sigmatic and *s*-less forms that we find in the presigmatic aorist indicative recurs in the corresponding modal forms. As we shall see, the PIE subjunctive of the presigmatic aorist was fully sigmatic, while the optative was formed directly from the stem of the underlying h_2e-conjugation aorist.

The presence of a robust *s*-aorist subjunctive in Indo-Iranian, Greek, and Celtic (cf. §100) tells us very little about the status of the presigmatic

[382] A dissenting opinion is that of Watkins (1962: 90 ff., 1969: 53), who takes **-s* to be a person- and number-indifferent *élargissement.*

[383] But the active plural has lengthened grade in Indo-Iranian (cf. Ved. 2 pl. *anaiṣṭa,* 3 pl. *ávākṣuḥ,* etc.)—a feature that may well be original (cf. Fig. 7.11, note (a)).

aorist subjunctive in the parent language, since extensive sigmatization of the presigmatic aorist is a hallmark of the 'inner' IE branches.[384] Highly significant, on the other hand, is the fact that a fully sigmatic counterpart to the classical *s*-aorist subjunctive is found in Tocharian, where the indicative, being largely *non*-sigmatic, could not itself have exerted a sigmatizing influence on the subjunctive. The forms in question are the presents of Krause–Thomas's class VIII, characterized by the thematic suffix *-*se/o*- (type A *arsam* / B *ersau* 'I raise, produce', 3 sg. A *aräṣ* (< **arṣäṣ*) / B *erṣäṃ* < **Hor-se/o*-). The great majority of these forms, which are overwhelmingly transitive and/or causative, are associated with class III (*s*-) preterites, and the correlation is mutual: the most archaic-looking *s*-preterites, at least in their transitive readings, are associated with transitive class VIII presents. The present of A *prak*- / B *prek*- is typical (Fig. 7.4):

FIGURE7.4

	Toch. A			Toch. B	
sg. 1	*praksam*	pl. *praksamäs*	sg. 1	*preksau̯*	pl. *preksem(o)*
2	*prakäṣt*	*prakäś*	2	*prekṣt(o)*	*prekścer*
3	*prakäṣ*	*prakseñc*	3	*prekṣäṃ*	*preksem*

Similarly, *näk*- in the meaning 'destroy', *tsäk*- in the meaning 'burn (tr.)', and *päk*- in the meaning 'cook (tr.)' make presents *näk-s-, tsäk-s-, päk-s-*.[385] While, as always in Tocharian, there has been much levelling of vocalism and palatalization, the PIE antecedents of these forms are unproblematically reconstructible as **prék̑-se/o*-, **nék̑-se/o*-, **dhég̑ʷh-se/o*-, and **pékʷse/o*-, with *e*-grade of the root.[386]

[384] Cf. Jasanoff 1986, 1987*b* : 94–106, arguing for the PIE character of the purely Indo-Iranian haplology posited by Szemerényi 1966. Other *si* -imperatives outside Indo-Iranian include Hitt. *paḫši* 'protect!' (cf. Ved. subj. *pā́sa* -) and Toch. B *päklyauṣ* (< **k̑léusi* or (analogical) **k̑lēusi*); see the discussion in §106 below.

[385] Cf. Jasanoff 1987*a,* following Cowgill 1965: 172 f. I cannot accept Ringe's view (1990: 211 f.) that the -*s* - of CT *-*sta* —the ending common to *all* 2 sg. preterites in Tocharian—ultimately rests on a 'classical' *s* -aorist 2 sg. in *-*s-s.* Compare the views of Adams 1994, especially 5–8.

[386] The importance of the similarity between the Hittite and Tocharian paradigms was first noted by Watkins (1962: 61 ff., 99 ff., citing Ivanov 1959: 29–31), who correctly concluded that the fully sigmatic *s* -aorist of Indo-Iranian, Greek, etc. must be a late development. Watkins, however, did not discuss the Hittite and Tocharian *non* -sigmatic forms.

Against the identification of the Tocharian *s*-presents with *s*-aorist subjunct-ives it has been objected (e.g. by Adams 1994: 4) that no other examples are known of PIE subjunctives yielding indicatives in Tocharian. This is not, however, strictly correct. The PIE subjunctive, with its 'prospective' meaning approaching that of a future, was semantically very close to some of the uses of the present indicative.[387] One old subjunctive that made the transition to an indicative very early, perhaps already in the parent language, was the stem **ḱléuse/o-* 'listen, hear' (cf. Ved. *śróṣamāṇa-*, *śroṣantu,* etc., Toch. B 3 sg. *klyauṣäṃ,* A 3 sg. mid. *klyoṣtär*), originally the subjunctive—perhaps with analogical lengthened grade—of a Narten *s*-present **ḱlḗu-s- / *ḱleu-s-*.[388] Interestingly, the Tocharian verb *klyaus- / klyos-* 'hear' belongs to the relatively small number of verbs that form both a class II (thematic) present and a class II (thematic) subjunctive—a fact which suggests that even after the subjunctive **ḱléuse/o-* had moved into the role of an indicative in late PIE or early pre-Tocharian, it still retained its old modal value. But if this is true, then the other Tocharian verbs with both class II presents and class II subjunctives, *over half of which are built to roots ending in* *-s- (A *pās-* 'protect', AB *yärs-* 'honour', A *wles-* / B *lāṃs-* 'accomplish', A *pros-* 'be ashamed', B *ṣäṃs-* 'count'), probably represent old subjunctives as well. The class II presents of *pās-, yärs-*, etc., like the class II present of *klyaus- / klyos-* itself, seem to have originated as subjunctives in **-s-e/o-* which were predisposed, presumably through some nuance of meaning proper to the *s*-element, to become indicatives. It is safe to assume that this semantic component, whatever it was, was also present in the subjunctive stems **préḱ-se/o-*, **néḱ-se/o-*, **dhégʷh-se/o-*, and **pékʷ-se/o-*.

§106. It is a remarkable fact, considering the scarcity of modal forms in Hittite, that a full-blown *s*-aorist subjunctive in **-se/o-* can also be shown to have existed in Anatolian. Let us recall the PIE status of *si*-imperatives—haplologized 2 sg. subjunctives in **-si* < **-sesi* that were specialized as imperatives in the parent language. Such forms are best known from Indo-Iranian, where Vedic attests over thirty examples, the great majority of them associated with *s*-aorist subjunctives.[389] A probable Tocharian example is A *päklyoṣ,* B *päklyauṣ* 'hear!', which, if correctly traced to a preform **ḱléusi* or **ḱlḗusi* (< pre-PIE 2 sg.

[387] In the event, of course, the Hittite and Tocharian facts rarely *are* considered together. One inevitably thinks of the metaphor of ships passing in the night.

[388] To be sure, this is not literally true: pre-PIE *could* have had a fully sigmatic *s* -aorist which donated its 3 sg. to the suppletive paradigm of the presigmatic aorist before disappearing as an autonomous category. It would be difficult, however, to construct a believable theory on the basis of so gross a violation of Occam's Razor.

[389] The term 'bivalent' will be used below in a quasi-technical sense to refer to roots which had, or which tended to develop, morphologically conditioned transitive and intransitive readings.

subj. **k̑léusesi*), would form a word equation with Ved. *śróṣi* 'id.' and provide an independent argument for taking pre-Toch. **kleuse-* from an etymological subjunctive. In addition, about half a dozen forms of this kind have been identified in Old Irish (cf. Jasanoff 1986).[390] The most interesting imperatives in **-si* outside Indo-Iranian, however, are the Hittite forms *eši* (NH) 'settle!', *ešši* (<e-iš-ši>) (OH+) 'perform!', and above all the common *paḫši* (OH, etc.) 'protect!'. To be sure, these forms are not usually classified as *si*-imperatives; the traditional view is that they contain the same *-i,* ostensibly a desinence, as in forms like *iyanni* 'get moving!', *tarni* 'leave!', and a small number of other *ḫi*-conjugation imperatives. As seen by Melchert, however (1984: 145), this analysis cannot be correct. The *-i* of *iyanni* is not an ending but part of the stem (**-nH-i-*; cf. §73), while late and sporadic forms like *tarni* (beside normal *tarna*; cf. also *ḫāni* 'draw (water)!' beside *ḫān*) have simply copied the word-final sequence *-ni* from the type *iyanni.* The only genuinely old imperatives in *-i* in which the *-i* is *not* analysable as a stem-component are precisely the three forms *eši, ešši,* and *paḫši,* all of which happen to be based on stems ending in -š-. Unless this agreement is simply a coincidence, which seems extremely unlikely, *eši* must go back to a 2 sg. subj. **$h_{1}\bar{e}_{s\text{-}(e\text{-}s)i}$* or **$h_{1}eh_{1}s\text{-}(e\text{-}s)i$* (: root present **$h_{1}\bar{e}_{s}$-* or **$h_{1}eh_{1}s$-* 'sit'), [391] *ešši* to a 2 sg. subj. **$\hat{}$üh$_{1}$-s-(e-s)i* (: reduplicated *s*-present **$\hat{}$üh$_{1}$-s-* (*vel sim.*; cf. §80), and *paḫši* to a 2 sg. subj. **peh$_{2}$-s-(e-s)i* (: *s*-present **poh$_{2}$-s-* / **peh$_{2}$-s-* or **p$\bar{e}$h$_{2}$-s-* / **peh$_{2}$-s-*).[392] The capital significance of these forms is that they establish the existence of the PIE 'short-vowel' subjunctive in the prehistory of Anatolian.

Being based on present stems in **-s-*, the three forms *eši,ešši,* and *paḫši* tell us nothing directly about the subjunctive of the presigmatic aorist in Anatolian. For this we must turn rather to the peculiar, yet surprisingly well-attested 2 sg. middle imperative *naišḫut* 'turn (intr.)!', which is twice found in Middle Hittite in the more archaic shape *nešḫut.*[393] The notable oddity of this form is its -š-. The regular 2 sg. mid. impv. would have been **n$\bar{e}$ḫḫut,* beside which we might have expected to encounter—and eventually do in fact find—a pseudothematic

[390] The initial palatalization in A *lyokät* must be secondary; the original state of affairs is preserved in the B form. The root *luk-* is conspicuously susceptible to non-phonological palatalization and depalatalization, a notable instance being furnished by the class III present B *lyuketär* < **lukotor.*

[391] We will henceforth use the term 'Inner IE' to refer to the collectivity of IE languages other than Anatolian and Tocharian.

[392] To express the intransitive sense, Tocharian B uses the middle of the same *s*-presents (*nakṣtär* 'perishes', etc.), while Tocharian A, clearly more archaic in this respect, employs the class X stems *näk-näs-*, *tsäk-näs-*, and *päk-näs-* (*näknäṣtär,* etc.). The latter forms, as suggested to me many years ago by Patrick Hollifield, are probably replacements of older presents in **-$\hat{}$ie/o-*. Cf. n. 46 below.

[393] Otherwise Hackstein (1995: 159 ff.), whose reluctance to assume analogical depalatalization leads him to posit an original zero grade of the root. The flaws in Hackstein's argument are well pointed out by Penney 1998: 93 f. In the special case of the present A *prak-s-*, B *prek-s-*, the root vocalism has clearly been taken from the corresponding class III preterite and class I subjunctive.

doublet *neyaḫḫut*. In purely descriptive terms, *nešḫut* can be characterized as a sigmatized version of the theoretically expected form **nēḫḫut*. This, however, is merely a label, not an explanation; sigmatic endings like 2 sg. pret. *-šta* beside *-tta* and 2 pl. *-šten(i)* beside *-tten(i)* clearly enjoyed a period of mild productivity in Hittite, but bona fide sigmatic / non-sigmatic pairs are limited to endings that originally began with a dental. Nowhere else in Hittite do we find a 2 sg. mid. impv. with *-šḫut* for *-ḫut,* nor is there any obvious reason why a regular form like **nēḫḫut* would have been eliminated from the language at a date so early that its replacement, *nešḫut,* should itself have required remodelling to *naišḫut*.

The picture becomes clearer once we recall the special status of PIE **neiH-* as an original bearer—perhaps the sole surviving original bearer—of the morphology of the presigmatic aorist in Hittite. As such, **neiH-* made a sigmatic subjunctive **néiH-s-e/o-* and an imperative **néiH-si,* both of which are preserved in Vedic (subj. 3 sg. *neṣati, néṣat*; impv. *néṣi*). Hittite may therefore be presumed to have inherited an imperative **nēši* (with *-ē- < *-ḛ-) as well. This form did not survive into our actual records, having been replaced by the attested 2 sg. impv. *nai* under the influence of the *i*-presents of the *dai*-class. But, as already briefly described in §72, the transitive and active *si*-imperative **nēši* was responsible for the creation of the oppositional intransitive middle *nešḫut* and, via the same mechanism, the plural forms *naišten* < **nešten* and *naišdumat* < **nešdumat*. From *naišten* was back-formed the 2 pl. present *naišṇtani, -šteni*. A close typological parallel to *nešḫut* is provided by the Vedic middle imperatives *mátsva* (: *mad-* 'exhilarate') and *rā́sva* (: *rā-* 'give'), which, though traditionally assigned to the non-existent root presents **mátti* and **rā́ti,* are in fact simply mechanical medializations, with *-sva* substituted for *-si,* of *mátsi* and *rā́si*.[394] Thus, with the exception of the 3 sg. preterite *naiš* itself, the sigmatic forms of *nai-* rest exclusively on the *si*-imperative **nēši,* which in turn points to a fully sigmatic PIE aorist subjunctive **néiH-s-e/o-*.[395]

§107. While the subjunctive of the presigmatic aorist was precociously sigmatic in PIE, the optative, by contrast, seems to have had no *s*-forms at all. For information on this point we cannot, of course, rely on Hittite, where the PIE optative was lost without a trace. Tocharian is not ideally informative either, for

[394] We thus find a sporadic, but perfectly common, development of subjunctives to presents all over the IE family; cf. e.g. Ved. *bódhati* 'notices', properly the subjunctive to the root aorist *abodhi, ábudhran,* etc.; Go. *beitan* 'bite', properly the subjunctive corresponding to the Vedic root aorist *ábhedam* ; and Gk. λείπω 'leave', properly the subjunctive corresponding to Ved. aor. 2 du. *riktam*.

[395] Cf. Jasanoff 1987*b* : 102 f. The subjunctive value is still palpable in the Vedic ritual cry *śrauṣaṭ,* lit. 'let him hear!' (Narten 1964: 260), and is presupposed by the *si* -imperative *śróṣi* (= Toch. B *päklyauṣ* ; cf. below).

although verbs of the *prak-* / *prek-* type have non-sigmatic optatives (cf. B 3 sg. *parśi* (: *prek-*), *eri* (: *er-* 'produce'), etc.), this is interpretable, in Tocharian terms, as an automatic consequence of the fact that the great majority of 'presigmatic' verbs have class I (athematic non-sigmatic) subjunctives.[396] The decisive evidence proving that the optative of the presigmatic aorist was non-sigmatic in late PIE comes rather from Indo-Iranian. Here there is *no* active optative of the *s*-aorist in the Rigveda and in Gathic Avestan.[397] As demonstrated by Karl Hoffmann (1967*b*: 31 f.), Vedic regularly employs the optative of the root aorist in situations where an active optative of the *s*-aorist would have been expected; cf. e.g. opt. *vanyā́-* beside indic. / subj. *vā́ṃs(a)-* 'gain', opt. *sahyā́-* beside indic. / subj. *sā́kṣ(a)-* 'prevail', opt. *yamyā́-* beside indic. / subj. *yā́ṃs(a)-* 'yield', opt. *avyā́-* beside indic. *áviṣ-* 'favour'. The same rule holds for Avestan, as shown by GAv. 1 pl. opt. *zaēmā* beside indic. **zāh-* 'win' (= Ved. *hās-* 'leave'; Hoffmann 1968*c*) and YAv. 3 sg. opt. *vainīṯ* beside indic. / subj. *vəŋh-* 'gain'. Under the standard view of the *s*-aorist, it is impossible to account for this curious suppletion pattern, which has no conceivable motivation in synchronic terms. Within the framework adopted here, however, the explanation is straightforward. The root aorist optative forms that take the place of the expected *s*-aorist optative in Indo-Iranian are simply the forms that Indo-Iranian inherited from the optative of the PIE presigmatic aorist. Since the spread of **-s-* across the extended paradigm of the presigmatic aorist had apparently not yet affected the optative in the parent language, Vedic and Avestan continue to associate *s*-aorist indicatives and subjunctives with optatives of the type originally proper to h_2e-conjugation root aorists.

This analysis, it will be noted, embodies a prediction. If suppletive root aorist optatives like *vanyā́-*, *sahyā́-*, and *yamyā́-* in fact go back to the optatives of h_2e-conjugation aorists **u̯on-* / **u̯en-*, **sog̑h-* / **seg̑h-*, etc., then it ought to be possible to distinguish such optatives, which would originally have had stable root accent and consistent zero grade of the optative suffix (**u̯én-ih₁-*), from optatives of the normal hysterokinetic type with zero grade of the root and **e* : *ze̯ro* ablaut of the optative suffix (e.g. **dhh₁-ié̯h₁-* / **dhh₁-ih₁-*').[398] This predic-tion is borne out by YAv. *vainīṯ,* which points to a preform **u̯én-ih₁-t.*

[396] To which can be added GAv. *dōišī* 'show!' (Y. 33. 13) beside 1 sg. subj. *dōišā* (Y. 51. 2).

[397] The major examples, apart from those already cited in §101 (**foir* 'help!' < **wo-ret-si, ·ain* 'protect!' < **aneg-si*), are *coméir* and *at.ré* 'arise!' < **(kom-ess-)reg-si, tog* 'choose!' < **to-geus-si, aic* (*c*)' invoke (as surety)!' < **ad-gʷed-si,* and *tair* 'come!' < **to-ar(e)-ink-si.*

[398] With secondary transitivization, presumably by polarization with the middle imperative *ēšəṯ.*

(The 'regular' 3 sg. root aorist optative of *van-* would have been **vainiiāṯ* (< **u̯n̥-i̯éh₁-t*), exactly like e.g. YAv. *buiiāṯ* (: *bū-* 'become') and GAv. *diiāṯ* (: *dā-* 'make').) GAv. *zaēmā* < **ĝʰéh₁-ih₁-me* is consistent with this reconstruction as well.[399] It is in Indic, however, that the most interesting reflexes of the *s*-less optative of the presigmatic aorist are to be found.

§108. The peculiar Rigvedic forms 1 sg. *jeṣam,* 2 sg. *jeḥ,* 1 pl. *jéṣma* (: *ji-* 'conquer' < **gʷei-*), and 1 sg. *yeṣam* (: *yā-* 'go' < **i̯eh₂-*) have been shown by Hoffmann (1969*b*) to be irregular precatives, i.e. sigmatized root aorist optatives. In the later Vedic language this formation became mildly productive, spreading from *yā-* to other roots in **-ā-* (cf. *geṣam* (VS), *geṣma* (AV) (: *gā-* 'go'); *stheṣam* (VS), *stheṣuḥ* (AV) (: *sthā-* 'stand'); *deṣma* (VS) (: *dā-* 'give'), etc.). The roots which underlie this secondary tier of precatives to roots in *-ā-* have root aorist indicatives (*ágāt,ásthāt, ádāt,* etc.). *ji-* and *yā-*, however, form *s*-aorists (cf. *ajaiṣam, ajaiḥ, jéṣat, jéṣi; ayāsam, ayās*[*īt*], *yāsat, yāsi*), and it is clearly on the basis of these, rather than *gā-,sthā-*, etc. that the type must be explained.

Since the PIE presigmatic aorist **u̯ón- / *u̯én- / *u̯ēn-s-* (> IIr. **u̯ăn-s-*) made an acrostatic optative **u̯én-ih₁-* (> YAv. *vainīṯ*), the presigmatic aorist **i̯óh₂- / *i̯éh₂- / *i̯ēh₂-s-*, which eventually became the Vedic *s*-aorist *ayāsam,* must originally have had an optative **i̯éh₂-ih₁-*. It was probably once the case that optatives of this type, being built to *h₂e*-conjugation indicatives, took the *h₂e*-conjugation endings in the parent language. But as the example of YAv. *vainīṯ* shows, by Indo-Iranian times the *h₂e*-conjugation endings **-h₂e, *-th₂e, *-e,* etc. had been replaced in the optative by the **-m, *-s, *-t,* etc. of the active. The only place in the *h₂e*-conjugation optative paradigm where the 'correct' ending seems to have been retained in Indo-Iranian was in the 3 pl. Here the *h₂e-* conjugation sequence **-ih₁-ṛs* survived and was analogically generalized, becoming the source of the standard Vedic 3 pl. opt. in *-yuḥ* (e.g. Ved. *syúḥ, bháreyuḥ, bhūyúḥ*) and the corresponding Avestan 3 pl. opt. in *-iiārəš* (e.g. GAv. *būiiārəš* beside *būiiąn*).[400]

[399] Oettinger, as already noted, takes the underlying Hittite verb *paḫš-* (1 sg. *paḫ(ḫa)šḫa,* 3 sg. *paḫša(ri),* etc.) from an *s*-aorist rather than an *s*-present. But since there is no other evidence for a fully sigmatic *s*-aorist in Anatolian, and since the root **peh₂-* 'protect, graze' is independently known to have formed an *s*-present in both Tocharian (A *pās-*) and Slavic (OCS *pasǫ*), there is every reason to favour an *s*-present analysis for *paḫš-* as well. Cf. §79.

[400] The *-e-* of *nešḫut* is unmotivated and hence original; the *-ai-* of *naišḫut* is obviously an analogical import from indicative forms like 3 sg. pret. *naiš.*

Following the substitution of *-m, -s, -t* for **-h_2e, *-th_2e, *-e* in the presigmatic aorist optative and the extension of *-s-* through the paradigm of the presigmatic aorist indicative, the pre-Indo-Iranian aorist optative and indicative of the root **i̯ā-* would have inflected as in Fig. 7.5:

FIGURE7.5

	optative		indicative	
sg.	1 *i̯á-ī̆-*m*	(replacing *i̯éh$_2$-ih$_1$-h$_2$e)	*i̯á-s-*m*	(replacing presigmatic *i̯óh$_1$-h$_2$e)
	2 *i̯á-ī̆-*ś*	(replacing *i̯éh$_2$-ih$_1$-th$_2$e)	*i̯á-s-s	(replacing presigmatic *i̯óh$_1$-th$_2$e)
	3 *i̯á-ī̆-*t*	(replacing *i̯éh$_2$-ih$_1$-e)	*i̯á-s-*t*	(< *i̯éh$_1$-s-t)
pl.	3 *i̯á-*r̥i̯-r̥ś*	(< *i̯éh$_2$-ih$_1$-r̥s)	*i̯á-s-*n̥t*	(replacing presigmatic *i̯éh$_1$-r̥s)

The 3 sg. opt. *i̯á-ī̆-*t* in this display was a form of exactly the same structure as YAv. *vainīṯ*. In Indic, however, all root aorist optatives were eventually subject to 'precativization'—the process by which the 3 sg. in *-*t* was replaced by *-s* < *-*s-t,* as in Ved. 3 sg. opt. aor. *bhūyáḥ, gamyáḥ, dheyáḥ,* contrasting with present optatives of the type *syā́t, hanyā́t,* etc. The source of the new *-*s-t* in the 3 sg. was the indicative of the *s*-aorist, where the sequence *-*s-t* was synchronically perceived as consisting of the 2 sg. in *-*s* (< *-*s-s*) followed by *-*t* (cf. 2 sg. *i̯ā́s[*s*], 3 sg. *i̯ā́*st*; also 2 sg. *dhā́kš[š], 3 sg. *dhā́kš*t* (< **dhe̯gʷh-s-t* 'burned'), etc.). The transfer of the pattern 2 sg. *-*s* : 3 sg. *-*st* from the indicative to the optative must have begun in the subset of optatives which actually corresponded to *s*-aorist indicatives, i.e. in the acrostatic type illustrated here. The 3 sg. *i̯ā́ī̆*t* was thus early replaced by precativized *i̯ā́īšt. In exactly the same way, pre-Indic *u̯ánīt was remade to *u̯ánīšt, and *ja̯íīt (< **gʷéi-ih$_1$-t*), the 3 sg. optative corresponding to Ved. *ajaiṣam, ajaiḥ,* etc., was remade to *ǰa̯íīšt.

The new 3 sg. forms in *-*īšt* (> Ved. -*īḥ*) were treated in two ways. *i̯âīšt and *ǰa̯íīšt themselves were retained as archaisms, eventually giving Ved. **yéḥ* and **jéḥ* (cf. 2 sg. *jeḥ*). In the normal case represented by *u̯ánīšt, however, the 3 sg. in *-*īšt* was subject to the general Indic substitution of *-yā-* for *-ī- in the optative active—the same process that led in the present system to the replacement of forms like 1 pl. opt. **sīmá* 'we would be' by *syā́ma,* and 3 sg. opt. **dadīt* 'would give' (= GAv. *daidīṯ*) by *dadyāt*. The paradigm **u̯ánīm, *u̯ánīš, *u̯ánīšt,* etc. was thus remodelled to **u̯aṇiā́m, *u̯aṇiā́s, *u̯aṇiā́st,* bringing it into partial agreement with 'normal' root aorist optatives of the type **bhūiā́m,*

bhū̯iā́s, *bhū̯iā́t,* etc. The two types now differed only in the 3 sg., where 'normal' **bhū̯iā́t* contrasted with **u̯aniā́st,* and in the 3 pl., where 'normal' **bhū̯iā́nt* (*vel sim.*) contrasted with **u̯aniə́rš*. This difference was too slight to be maintained. The 3 sg. in **-i̯ā́t* was in due course replaced by **-i̯ā́st* everywhere in the root aorist, and the 3 pl. in **-i̯ə́rš* (> Ved. *-yúḥ*) was generalized not only to all root aorist optatives but to all active optatives in the language.[401] Later, the **-s-* of the 3 sg. aorist optative (i̯ā́išt, *ǰ́ā̯išt, *u̯aniā́st, *bhū̯iā́st,* etc.) was extended to the other persons and numbers, giving rise both to the regular precative in *-yās-* (1 sg. *bhūyā́sam,* 1 pl. *kriyāsma,* both RV) and to the exceptional precatives *jeṣ́am, jes, jéṣ́ma,* and *yeṣ́am*.

Taken together, then, YAv. *vainīṯ* and Ved. **yéḥ, *jéḥ* < **i̯ā́i̯[š]t, *ǰ́ā̯ii̯[š]t* show that the optative corresponding to the sigmatic aorist in Indo-Iranian—and thus to the presigmatic aorist in PIE—was of the type **u̯én-ih₁-*, **i̯éh₂-ih₁-*, **gʷi̯é-ih₁-*, with stably accented full grade of the root and zero grade of the optative suffix. Optatives of this kind could never have been formed to 'normal' root aorists, but they were exactly what would have been expected beside the acrostatic aorists **u̯ón- / *u̯én-*, **i̯óh₂- / *i̯éh₂-*, and **gʷó- / *gʷé-*.[402]

§109. To the picture of the presigmatic aorist active indicative given in §103, with its lengthened-grade sigmatic 3 sg. (**prék-s-t, *néiH-s-t*) embedded in an otherwise *s*-less h_2e-conjugation paradigm (**prók-h_2e, *-th$_2$e, *nóiH-h_2e, *-th$_2$e,* etc.), we can now add our findings from §§104–8. The middle of the presigmatic aorist appears to have come in two varieties, a 'true' middle in **-s-* (e.g. **prék-s-to* 'asked (for oneself')) and an oppositional intransitive middle without **-s-* (e.g. **nóiH-o* 'turned (intr.)', with the same *o*-grade as in Toch. A *nakät, tsakät,* etc.). The presigmatic aorist subjunctive was fully sigmatic (**prék-s-e/o-*, **néiH-s-e/o-*), but the optative was based on the *s*-less h_2e-conjugation stem (**prék-ih₁-*, **néiH-ih₁-*).

The exact steps by which the h_2e-conjugation aorist paradigms of **prek-*, **neiH-*, and similar roots were infiltrated or 'invaded' by sigmatic forms may never be known for certain, since the entire process took place within the

[401] A similar Avestan example is GAv. *fərašuuā* Y. 53. 3 (: *fras* - 'ask').

[402] Note that we can now easily explain why the verb *īšš(a)* - 'perform' (§80), despite its basically pseudothematic inflection (*išša.ṇṭi, -atti, -ai*), has the athematic 2 pl. forms *īšten* (impv.) and *īštēni* (pres.). *īšten* is a form of exactly the same type as *naišten* ; the only difference is that in this case the underlying *si* -imperative happens to be directly attested as *e-iš-ši* (BoTU 8 iii 63; modernized from **i-iš-ši* < **i̯i-ih₁-s-(e-s)i* ˜.

parent language. Nevertheless, we have now learned enough about the *h_2e*-conjugation in general, and the presigmatic aorist in particular, to be able to formulate some plausible hypotheses. Let us assume at the outset that the pre-PIE protomiddle aorists **prok̂-* / **prek̂-* and **noiH-* / **neiH-* originally had some kind of middle-like function, as illustrated in Fig. 7.6:

FIGURE7.6

sg. 1	**prók̂-h_2e* 'I asked (for myself)'	**nóiH-h_2e* 'I turned (intr.),'
2	**prók̂-th_2e*	**nóiH-th_2e*
3	**prók̂-e*	**nóiH-e*
pl. 1	**prék̂-me-*	**néiH-me-*
2	**prék̂-(t)e*	**néiH-(t)e*
3	**prék̂-ṛs*	**néiH-ṛs*

These forms would have been morphologically indistinguishable from stative-intransitive *h_2e*-conjugation aorists like **bhoudh-* / **bheudh-* 'awake', **u̯āĝ-* / **u̯aĝ-* 'break' (intr.)', etc. But the inner-IE treatment of aorists of the **prok̂-* / **prek̂-*, **noiH-* / **neiH-* type was quite different from that of the **bhoudh-* / **bheudh-*, **u̯āĝ-* / **u̯aĝ-* type. Stative-intransitive aorists, originally denoting entry into a state, maintained their inherited value through the PIE period, as shown by the preserved intransitivity of the corresponding class V subjunctives in Tocharian (cf. **wak-a-* 'burst open (intr.)', **waik-a-* / **wik-a-* 'disappear', **lait-a-* / **lit-a-* 'depart', etc.).[403] In the **prok̂-* / **prek̂-*, **noiH-* / **neiH-* type, on the other hand, the original meaning of the *h_2e*-conjugation paradigm was transferred within the parent language to a newly created middle, while the *h_2e*-conjugation forms themselves acquired a new, often oppositional transitive sense. Thus, the Tocharian reflex of PIE 1 sg. **prók̂-h_2e* (> A *prakwā,* B *prekwa*) means not 'I asked (for myself)', but simply 'I asked', and the Hittite reflex of PIE 1 sg. **nóiH-h_2e* (> *nēḫḫun,* whence back-formed 1 sg. pres. *nēḫḫi*) means not 'I turned (intr.), directed myself', but 'I led'. To express the original middle-like

[403] See, however, §117, with n. 45. The Tocharian optative is historically the optative of the present or aorist that underlies the synchronic subjunctive.

sense of the *h₂e*-conjugation aorist, both Tocharian and Hittite employ innovated middle forms, of which the *s*-less *o*-grade type seen in Toch. A *nakät,* pl. *nakänt,* NH *neyaḫḫat,* etc. has the more obvious claim to antiquity. It seems reasonable to conclude that the creation of the late PIE presigmatic aorist, with its intrusive *s*-forms, was in some way connected with the split of the *h₂e*-conjugation paradigm into two—a formally old but functionally new active, and a formally new but functionally old middle.

§110. Let us now consider precisely *how* the split of the *h₂e*-conjugation aorist into separate active and middle paradigms might have taken place in the case of a bivalent root like **neiH-*. We know, to begin with, that outside the 3 sg. the original *h₂e*-conjugation inflection (**nóiH-h₂e, *nóiH-th₂e,* etc.) became the late PIE transitive active, and we can probably assume that the 'missing' 3 sg. **nóiH-e,* prior to its replacement by **nḗiH-s-t,* was active and transitive as well. How, then, was the corresponding intransitive middle sense expressed? The forms of the emergent middle paradigm can conveniently be thought of as falling into three groups:

(1) The 3 sg. Here, where **nóiH-e* (later to be replaced by **nḗiH-s-t*) was assigned the transitive meaning 'led', a contrasting middle form was evidently created by the rough and ready device of replacing the active ending **-e* by the middle ending **-o,* giving **nóiH-o* 'turned, directed oneself'. The ending **-o* survives in Hitt. 3 sg. mid. *neyat* and (back-formed) *nēari; o*-vocalism of the root is guaranteed by Toch. A *nakät,* etc. < **nok̑-[t]o.* For the split of older **nóiH-e* (intrans.) into younger **nóiH-e* (trans.) and **nóiH-o* (intrans.), compare the conjectured development of earlier **k̑ónk-e* into late PIE **k̑ónk-e* (trans.) and **k̑ónk-or* (intrans.) (cf. Ch. 6 n. 6).

(2) The 1-3 pl. (and 1-3 du.). Here, where the active forms were **néiH-me-*, **néiH-(t)e, *néiH-ṛs,* etc., new middle forms were made, as in the 3 sg., by substituting the middle endings for their active *h₂e*-conjugation counterparts (**néiH-me - ⇒*néiH-medhh₂, *néiH-(t)e- ⇒ *néiH-dh(u)e, *néiH-ṛs- ⇒ *néiH-ro,* etc.). Forms of this type are preserved in Hitt. 3 pl. mid. *neyandat, neyandari* (with probable *e*-grade) and Toch. A *nakänt*—the latter with analogical *o*-grade from 3 sg. *nakät.*

(3) The 1 sg. and 2 sg., where the active forms were **nóiH-h₂e* and **nóiH-th₂e,* respectively. Here, substituting the middle endings for their *h₂e-* conjugation counterparts would not have been a viable strategy for distinguishing the active and middle paradigms, since the middle and *h₂e*-conjugation endings of the 1 sg. (**-h₂e*) and 2 sg. (**-th₂e*) were identical. The simplest solution would have been to employ **néiH-h₂e* and **néiH-th₂e* as the new middle forms, with *e*-vocalism taken from the plural and dual in accordance with the general rule that 1 sg. and 2 sg. middle forms

agreed in root vocalism with their plural and dual counterparts.[404] The assumption of 'weak' vocalism in the 1 sg. and 2 sg. middle is nowhere directly confirmed, but is indirectly supported, as we shall see (§§120 f.), by the ablaut pattern of the passive aorist in Indo-Iranian.

The extraction of a contrasting middle from the h_2e-conjugation aorist of a bivalent root like **neiH-* was thus apparently an opportunistic process, in which individual forms were medialized in the simplest possible way without undue regard for the inflectional pattern as a whole. The result was that at a stage just prior to the sigmatization of the 3 sg. active, the active / transitive and middle / intransitive paradigms would have looked as follows (Fig. 7.7):

FIGURE7.7

active / trans.		middle / intrans.	
sg. 1 *nóiH-h_2e	pl. *néiH-me-	sg. 1 *néiH-h_2e	pl. *néiH-medhh$_2$
2 *nóiH-th$_2e$	*néiH-(t)e	2 *néiH-th$_2e$	*néiH-dh(u)e
3 *nóiH-e	*néiH-r̥s	3 *nóiH-o	*néiH-ro

There were two unstable features in this synchronic system, both of which eventually precipitated further changes. The isolated and anomalous *o*-grade of the 3 sg. mid. **nóiH-o* made it a natural candidate for analogical elimination, as in fact occurred in many of the daughter languages (see below). More important for PIE itself, however, was the fact that the crucial opposition between the 3 sg. act. **nóiH-e* 'led' and the 3 sg. mid. **nóiH-o* 'turned (intr.)' was expressed by the phonologically minimal contrast between the endings **-e* and **-o.* Nowhere else in the PIE verbal system was the difference between the *e*- and *o*-coloured variants of the 3 sg. ending, without some ancillary feature such as ablaut or the presence vs. absence of the particle **-r,* sufficient to distinguish a pair of contrasting active and middle forms. In the aorist, moreover, **-e* was particularly ill-suited to serve as a transitivity marker, since the same ending also marked the 3 sg. in stative-intransitive aorists (**bhóudh-e, *u̯ág̑-e,* etc.),

[404] YAv. 3 sg. °*zaht* (: *zāh* - 'win') is an obvious neologism vis-à-vis GAv. *zaēmā* (cf. below). The situation in the middle is similar but less dramatic, with one or two authentic examples in Younger Avestan (see Kellens 1984: 372) and a handful of late precatives in Vedic.

which were typically intransitive and closely approximated actual middle forms in meaning. This is the context in which the replacement of the 3 sg. act. **nóiH-e* by the sigmatic form **nḗiH-s-t* must be understood.

§111. The late PIE 3 sg. **nḗiH-s-t* was a suppletive form, evidently drawn from a sigmatic category with Narten ablaut. Only one such category is known to have existed in PIE: the *s*-presents of the *ganešzi*-type, which are preserved both in isolated stems like **ĝnḗh$_3$-s-* / **ĝnéh$_3$-s-* and in the productively built *s*-futures of Baltic and Italic. From a purely formal point of view, it would be simple enough to trace the presigmatic aorist 3 sg. **nḗiH-s-t* to the 3 sg. imperfect of an *s*-present **nḗiH-s-mi* 'I wish to lead' (*vel sim.*). But there is no evidence that the root **neiH-* formed such an *s*-present in the parent language, and no obvious reason why a desiderative imperfect should have been absorbed into the paradigm of a *h$_2$e*-conjugation aorist that had no desiderative nuance at all. The clear implication is that **nḗiH-s-t* and the majority of other 3 sg. aorists in **-s-t* were themselves analogical—analogical to the 3 sg. in **-s-t* of some nucleus of roots that really *did* form both a *h$_2$e*-conjugation aorist and a Narten *s*-present, and whose aorist and *s*-present / imperfect were close enough in meaning for the two to overlap.

The root that comes closest to meeting these requirements is **prek-*. The *h$_2$e*-conjugation aorist **prok-* / **prek-* is secure, being supported both by Toch. A *prakwā* / B *prekwa* and by the Vedic *s*-aorist 3 sg. *ápraṭ* (cf. GAv. 3 sg. aor. mid. *fraštā,* 1 sg. *frašî*). The present of the root **prek-* in late PIE was **pr̥(k)-skḗ/ó-* (cf. Ved. *pŕ̥cchati,* Lat. *poscō,* etc.), with **-ske/o-* reinforcing the inherently desiderative meaning 'ask', as in the nearly synonymous **h$_2$is-skḗ/ó-* (: Ved. *icchā́ti,* YAv. *isaiti,* OCS *iskǫ* < **jьsk-*) from PIE **h$_2$eis-* 'seek' (cf. §78). As is well known, the suffix **-ske/o-* was often the replacement of bare **-s-*, as in Lat. *-ēscō* beside Hitt. *-ēš(š)-*, or Lat. *(g)nōscō,* OP *xšnāsa-* 'know' beside Hitt. *ganešzi,* etc. An interesting side-effect of this replacement was the apophonic variability that we sometimes find in *ske/o*-presents, a familiar case being that of Alb. *njoh* 'I know' < **ĝnēske/o-*, with **-ē-* taken from the underlying *s*-present **ĝnḗh$_3$-s-*. In precisely the same way, the cognates of pre-IIr. **h$_2$is-skḗ/ó-* include forms that go back to full-grade **h$_2$eis-ske/o-* (cf. Gmc. **aiskōn* (OHG *eiscōn,* OE *āscian* 'ask') and Arm. *haycʻem* 'I ask') and lengthened-grade **h$_{2\bar{e}is\text{-}ske/o}$-* (cf. OLith. *ieszku* (Mod. Lith. *ieškau*) 'I seek'). The apophonic instability of these forms points to an underlying *s*-present **h$_{2\acute{e}is\text{-}s}$-*, with an ablaut pattern that infected the originally zero-grade *ske/o*-present **h$_2$is-skḗ/ó-*.[405] The importance of this observation lies in the fact that the nearly synonymous roots

[405] Compare the behaviour of Narten presents in the optative: 3 sg. Lat. *uelit,* Go. *wili* 'wants', OCS *po-velitь* 'orders' < **u̯élh$_1$-ih$_1$-t* (: indic. **u̯ḗlh$_1$-ti*).

*$h_2$eis- and *prek- were morphologically parallel. If the ske/o-present *$h_2$is-ské/ó- was the successor, so to speak, of a Narten s-present *$h_{2\bar{e}is\text{-}s}$-, then it is very likely that *pr̥(k)-ské/ó- was the successor of a Narten s-present *pr$\bar{e}$k-s-.

§112. We can now envisage a possible scenario for the introduction of *-s- into the paradigm of h_2e-conjugation aorists like *noiH- / *neiH-. Let us suppose that the root *prek- originally formed a Narten s-present of the type *pr$\bar{e}$k-s-mi, *-si, *-ti, etc., which was in due course displaced from its role as the normal present of *prek- by the newer stem *pr̥(k)-ské/ó-. One possible consequence of this replacement would have been the relegation of the non-*hic et nunc* forms of the obsolete present *pr$\bar{e}$k-s- to the role of a simple preterite or aorist—a fate that commonly befell discarded presents in the IE daughter languages.[406] There is actually some evidence for such a process within the parent language itself: lengthened-grade 'perfects' of the type seen in Lat. *l$\bar{e}$gī* 'I read, gathered' (: Toch. B pret. 3 sg. *lyāka* 'saw', Alb. aor. 1 sg. *mblodha* 'I gathered'), *$\bar{e}$mī* 'I bought' (: Lith. *ẽmė* 'took'), and *$\bar{e}$gī* 'I led' (< *$h_{2\bar{e}}$-) were probably originally the imperfects of Narten presents whose basic presential role was taken over by thematic presents of the type *lḗg-e/o-, *h_2ḗg-e/o-, *$h_1$ém-e/o-.[407] If we assume the same categorial shift for the imperfect *pr$\bar{e}$k-s-m̥, *-s, *-t as for the imperfect *l$\bar{e}$g-m̥, *-s, *-t, then the root *prek- would in effect have had two aorists or aorist-like preterites in PIE—one the h_2e-conjugation *prók-h_2e, *-th$_2$e, *-e, etc., and the other the sigmatic *pr$\bar{e}$k-s-m̥, *-s, *-t, etc. The two sets of forms, though differently nuanced in some way that cannot now be recovered, would inevitably have been virtually equivalent in certain contexts.

What would have been the consequences of this situation for the root *neiH-? The formal difference between 3 sg. *nóiH-e 'led' and the corresponding middle form *nóiH-o 'turned (intr.)' was, as we have seen, not very robust, with a heavy functional load concentrated on the minimal phonological difference between the endings *-e and *-o. The special morphology of the root *prek- offered a way out of the inconvenient near-homophony. Since the sense of the 3 sg. form *prók-e 'asked' could also be rendered by the sigmatic form *pr$\bar{e}$k-s-t, it was only natural that speakers wishing to emphasize or disambiguate the active character of the form *nóiH-e might have had recourse to a proportion

*prók-e : *pr$\bar{e}$k-s-t : : *nóiH-e : *X*,

[406] But the evidence of *ẓa$\bar{e}$mā* is not decisive, since even hysterokinetic ('normal') root aorist optatives were apparently characterized by full grade of the root in the 1, 2 pl. and 1-3 du. Cf. Jasanoff 1991*b* : 106 f.

[407] With analogical substitution of consonantal *-y* - for syllabic *-*i(y)* - in Vedic and secondary *-iiā* - in Avestan. It is significant that in both Indic and Iranian the *r* -ending of the 3 pl. optative points unambiguously to *-r̥p*, rather than *-r̥* or *-$\bar{e}$r*. This fact is alone sufficient to rule out the possibility—hardly great in any case—that this ending was borrowed from the perfect indicative, where the normal ending was *-r̥* (cf. §28). It will be recalled that the pattern *-*m*, *-*s*, *-*t*, …*-r̥s must also be assumed for the pluperfect (GAv. 3 sg. *urūraost* < *ruraud-t* vs. 3 pl. *cikōitərəš* < *čikait-r̥š*).

where *X* was solved as **nḗiH-s-t*. The same process would have generated **dhḗǵʰ-s-t* 'burned (tr.)', **pḗkʷ-s-t* 'cooked (tr.)', **mḗǵh-s-t* 'conveyed', and (assuming that the Tocharian *s*-preterite is old) **nḗḱ-s-t* 'destroyed'. There was no comparable creation in PIE of e.g. a 1 sg. **nḗiH-s-m̥* (**dhḗǵʰ-s-m̥,* etc.) or a 2 sg. **nḗiH-s-s* (**dhḗǵʰ-s-s,* etc.)—not because such forms would have been any harder to generate analogically than **nḗiH-s-t,* but because they would not have been needed in the same way. Rather, the mixed paradigm that now established itself in bivalent roots (**nóiH-h₂e, *nóiH-th₂e, *nḗiH-s-t,* etc.) was extended in reverse to **prek-* itself: **prḗḱ-s-t* became the *only* 3 sg. active in the aorist paradigm of **prek-*, while the *h₂e*-conjugation forms (**prók-h₂e, *-th₂e,* pl. **prék-me-*, **-(t)e, *-r̥s*) gradually supplanted sigmatic **prḗḱ-s-m̥, *-s-s,* etc. everywhere else.

Thus, under this scenario, arose the late PIE active indicative of the presigmatic aorist (cf. §103), basically a *h₂e*-conjugation paradigm in which the new 3 sg. properly served to underscore the transitivity of the non-sigmatic form it replaced. The specific selection of a sigmatic form for this purpose was in the last analysis accidental—a consequence of the fact that the root **prek-*, and conceivably one or two others like it, happened to have both a *h₂e*-conjugation aorist and a preterite / aorist (< imperfect) in **-s-* with nearly the same meaning.[408] The association of the *s*-aorist with transitivity in the later IE languages—for example, in Greek pairs of the type ὦρσε 'called forth': ὤρτο 'arose', ἔστησα 'I set up' : ἔστην 'I took a stand', πῆλε 'brandished' : πάλτο 'shook (intr.)', etc.—ultimately reflects the use of **-s-* as an ancillary transitivity marker in bivalent roots.

§113. The influence of the intrusive preterite / aorist stem **prḗḱ-s-* also made itself felt outside the active indicative. The differentiation of protomiddle / *h₂e*-conjugation aorists of the type **noiH-* / **neiH-* into separate active and middle paradigms, as described in §§109–10, was restricted to bivalent roots. No such split took place in the case of **prek-*, which emerged with a mixed paradigm in the active (1 sg. **prók-h₂e* 'I asked', 2 sg. **prók-th₂e,* 3 sg. **prḗḱ-s-t,* etc.) but generalized its sigmatic stem in the middle (1 sg. **prék-s-h₂e* 'I asked on my own behalf', 2 sg. **prék-s-th₂e,* 3 sg. **prék-s-(t)o,* etc.). The sigmatic middle was thus from the beginning associated with self-benefactive (+reflexive and reciprocal)

[408] The spread of **-ir̥š* throughout the present system would have been favoured, of course, by the fact that the *molō* - and other *h₂e* -conjugation present types presumably had *h₂e* -conjugation optatives as well.

value, and sigmatic forms were never introduced into the *intransitive* middle of bivalent roots, which retained their *s*-less inflection in both Hittite (*neyat,nēari,* etc.) and Tocharian (A *nakät,pakät,* etc.). Eventually the pattern **prók-* / **prék-* / **prḗk-s-* (active) : **prék-s-* (self-benefactive middle) became standard, spreading to the great majority of roots with a presigmatic active. The two middle paradigms—one non-sigmatic and contrastively intransitive (3 sg. **nóiH-o*), and the other sigmatic and self-benefactive (3 sg. **prék-s-(t)o*)—must have coexisted in late PIE, but fell together in most of the daughter languages (cf. below).

In the modal forms, the subjunctive corresponding to the ordinary h_2e-conjugation paradigm would originally have been of the type **néiH-e/o-*, **dhégʷh-e/o-*, etc., while **prék-* would have inherited both an *s*-less h_2e-conjugation subjunctive **prék-e/o-* and a sigmatic subjunctive **prék-s-e/o-*. Here again, as in the 3 sg. indicative, it was probably the centrality of the transitive : intransitive opposition in bivalent roots that supplied the motivation for the spread of **-s-*. The 3 sg. indicative forms were already distinguished by the presence of **-s-* in the transitive active (**nḗiH-s-t*) but not in the intransitive middle (**nóiH-o*). This feature was now extended to the subjunctive, where the analogical stem **néiH-s-e/o-*, based on **prék-s-e/o-*, replaced **néiH-e/o*—-at first probably in the active only. The archaic association of the '*s*-aorist subjunctive' with the *active* of bivalent roots is most clearly reflected in the use of *s*-presents (< *s*- aorist subjunctives) as oppositional transitives and causatives in Tocharian, and in the overwhelming preference of the *s*-aorist subjunctive for the active voice in Vedic. There was no comparable creation of a sigmatic optative **néiH-s-ih$_1$-*, perhaps because the root **prek-* supplied no optative **prék-s-ih$_1$-* to serve as a model. The absence of a future optative in Greek and Indo-Iranian, and the rarity of the optative of the desiderative proper in Indo-Iranian, suggest that desiderative *s*-formations in the parent language may not have formed an optative at all.[409]

§114. The above account of the inner-IE genesis of the presigmatic aorist, like our earlier forays into pre-PIE grammar, is offered with the aim of showing how a particular reconstructed situation—in this case, the revised picture of the '*s*-aorist' presented in §§103 ff.—*could* have come into being. As a true history of what happened, it may be wrong in important ways, and it is very unlikely to be wholly correct. But if nothing else, it shows—and this is sufficient for our present purposes—that there is no reason *in principle* why the

[409] The situation in Greek lends support to this picture. The oldest variant of the *s* -aorist optative in Greek is the type represented by the Central Cretan forms 3 sg. κοσμησιε, δικακσιε, 3 pl. *F* εϙκσιεν. The underlying paradigm was alphathematic **F* εϙκσια, **F* εϙκσιας, **F* εϙκσιε, etc., probably sigmatized from still earlier **F* εϙκσια, **F* εϙκσιας, **F* εϙκσιε (cf. Jasanoff 1991*b* : 116 ff.). Whether the Proto-Greek endings 1 sg. **-ια*, 2 sg. **-ιας*, 3 sg. **-ιε*, etc. were directly inherited from ideal h_2e -conjugation prototypes **-ih$_1$-h$_2$e,* **-ih$_1$-th$_2$e,* **-ih$_1$-e,* or whether they replaced earlier 'activized' **-ī*, **-īs,* **-ī[τ]* < **-ih$_1$-m,* **-ih$_1$-s,* **-ih$_1$-t* is no longer possible to tell.

parent language could not have had an *s*-aorist of the Hittite–Tocharian type, suppletive and irregular, rather than of the Greek–Sanskrit type, 'classical' in every sense of the word. Which model we choose for our reconstruction of PIE must be dictated by which hypothesis better explains the observed data, not by which one yields the more pristine and idealized picture of the parent language. The account of the *s*-aorist given here is more complicated than the account given, for example, by Brugmann or Hirt, because it attempts to accommodate facts that the Neogrammarians and their successors could not know or appreciate. These include (1) the restriction of *-*s*- in the active indicative to the 3 sg. in both Hittite and Tocharian; (2) the specific localization of the ending -š in the *ḫi*-conjugation, and nowhere else, in Hittite; (3) the perfect-like active and *o*-grade middle of the non-sigmatic forms of the *s*-preterite in Tocharian; (4) the transitivizing function of the sigmatic term in pairs of the type *naiš* 'led' : *neyat* 'turned (intr.)' in Hittite and A *ñakäs* 'destroyed' : *nakät* 'perished' in Tocharian; and (5) the *s*-less, acrostatic optative associated with the *s*-aorist in Indo-Iranian. These facts can no longer be regarded as too new or too controversial to play a role in our picture of the parent language. As far as the *s*-aorist is concerned, the evidence of Hittite and Tocharian unmistakably calls for a modest but literal 'paradigm shift'.

Like any new theory that is even minimally adequate, the presigmatic reinterpretation of the *s*-aorist provides insights into phenomena that it was not specifically designed to explain. A number of these will appear as we review the treatment of the presigmatic aorist in the individual daughter languages.§115. Anatolian inherited the presigmatic aorist in its late PIE form (Fig. 7.8):

FIGURE7.8

		active	
sg. 1 **nóiH-h_2e*	pl. **néiH-me-*	sg. 1 **prók̂-h_2e*	pl. **prék̂-me-*
2 **nóiH-th$_2$e*	**néiH-(t)e*	2 **prók̂-th$_2$e*	**prék̂-(t)e*
3 **néiH-s-t*	**néiH-ŗs*	3 **prék̂-s-t*	**prek̂-ŗs*
		middle	
sg. 1 **néiH-h_2e*	pl. **néiH-medhh$_2$*	sg. 1 **prék̂-s-h_2e*	pl. **prék̂-s-medhh$_2$*
2 **néiH-th$_2$e*	**néiH-dh(u)e̯*	2 **prék̂-s-th$_2$e*	**prék̂-s-dh(u)e̯*
3 **nóiH-o*	**néiH-ro*	3 **prék̂-s-(t)o*	**prek̂-s-n̥to*

No roots of the **prek-*type survived in Hittite, but the paradigm of **neiH-* was essentially preserved. A significant change was that the 3 sg. forms, both active and middle, gave up their special vocalism. Thus, the attested Old Hittite 3 sg. pret. act. *năiš* (<na-(i-)iš>) goes back phonologically to **noiH-s-t,* not **nēiH- s-t,* while the corresponding 3 sg. pret. mid. **nēati* (OH *niati,* NH *neyat*) is better taken from **néiH-o,* with levelled *e*-vocalism, than from **nóiH-o.*[410] In addition, as in the case of the non-sigmatized h_2e-conjugation aorists **doh$_3$-* / **deh$_3$-*,**logh-* / **legh-*, etc., a back-formed present was created in Anatolian:

1 sg. **nóiH-h$_2$ei* > Hitt. *neḫḫi* (NH)
2 sg. **nóiH-th$_2$ei* > Hitt. *naitti*
3 sg. **nóiH-ei* (analogical for **nḗiH-s-ti* / **nóiH-s-ti*) > Hitt. *nāi*
3 pl. **néiH-n̥ti* > Hitt. *nēanzi,neyanzi*

with middle

3 sg. **néiH-or(i)* > Hitt. *nēa,nēari,neyari,* etc.
3 pl. **néiH-n̥tor(i)* (for **néiH-ror(i))* > Hitt. *nēanta, neyantari,* etc.

The vocalism of the middle forms and the non-transparency of the ablaut pattern **nai-* : **nḗ-* (< **noiH-* : **neiH-*) were probably responsible for the maintenance of full grade in the 3 pl. pres. act. *nēanzi / neyanzi*; the theoretically 'regular' treatment would have been **niyanzi,* with the same hyperweak zero grade as in other back-formed presents (cf. §87). The rest of the paradigm, with the standard substitution of endings like 1 sg. pret. *-(ḫ)ḫun* for **-(ḫ)ḫa* and 3 pl. pret. *-er* for **-n̥s,* is self-explanatory. As we have seen in §106, the sigmatic 2 pl. impv. *naišten,* 2 pl. pres. *naišteni,* 2 sg. impv. mid. *nešḫut* (*naišḫut*), and 2 pl. impv. mid. *naišdumat* are analogical creations based on the lost *si*-imperative **nēši* (= Ved. *néṣi*), itself ultimately based on the subjunctive stem **néiH-s-e/o-*. Neo-Hittite forms such as 1 pl. pret. *neyawen,* 2 pl. impv. *neyatten,* 1 sg. pres. mid. *neyaḫḫari,* 3 sg. pret. mid. *neyattat,* etc. show a late pseudothematic stem *neya-*, extracted in the usual way from the ambiguous 3 pl. act. in *-anzi* and 3 pl. mid. in *-anta(ri).* The oft-cited identity of Hitt. *neya-* with the Vedic class I present *náyati* (so e.g. Oettinger 482, *LIV* 406) is thus a mirage. Nothing in Hittite requires the assumption of a pre-Anatolian thematic stem **néiH-e/o-*, which is flatly contradicted by the philological evidence.

nai- is the only certain survivor in Hittite of the original stock of PIE presigmatic aorists; the rest have disappeared or are no longer recognizable.

[410] Despite the transitive value of Hitt. *wāki* and *lāki* ; cf. §§87, 96.

The presigmatic *pattern,* however, was extremely productive. The early Anatolian preterite of *nai-*, apart from its sigmatic 3 sg., was exactly the same as that of other *ḫi*-verbs, both etymological aorists like **logh-* / **legh-* (> Hitt. pret. **lākḫun,* etc.) and etymological present / imperfects like **molh$_2$-* / **melh$_2$-* (> Hitt. pret. **mall(a)ḫḫun,* etc.). Hittite generalized the formation of the preterite of *nai-* to virtually all *ḫi*-verbs, installing -š as the 3 sg. pret. ending almost everywhere.[411] As far as we can tell, this productivity was confined to Hittite; there is no sign of a sigmatic 3 sg. in the other Anatolian languages.[412]

§116. The most elaborate, and also the most interesting, development of the presigmatic aorist was in Tocharian. Like Hittite, Tocharian preserved the original distribution of the *s*-element, restricting it to the 3 sg. of the active and excluding it altogether from the middle of oppositional intransitives like A *nakät* (< **nok-to*) 'perished', *tsakät* (**dhog$^{\mathrm{h}}$h-to*) 'burned (intr.)', etc.[413] Also like Hittite, Tocharian eliminated the apophonic isolation of the 3 sg. active and middle forms, which stood out inconveniently from their respective paradigms in the parent language (3 sg. act. **né̯iH-s-t* vs. **noiH-* / **neiH-* elsewhere in the active; 3 sg. mid. **nóiH-o* vs. **neiH-* elsewhere in the middle). Here, however, the parallel with Hittite ends. In Hittite, as we have just seen, the 3 sg. act. **né̯iH-s-t* was replaced by **nóiH-s-t,* with the *o*-grade of the other active singular forms, while the 3 sg. mid. **nóiH-o* was replaced by **néiH-o,* with the *e*-grade of the other middle forms. Tocharian took the opposite course: the *-ē- of the 3 sg. act. was extended throughout the active paradigm, while the *-*o*- of the 3 sg. mid. became the general vocalism of the middle. The effects of these changes were later partly obscured by analogy and the phonological merger of pre-Toch. *ē and *o (> CToch. *e > A *a,* B *e*). Nevertheless, the palatalized initial consonant of forms like A 3 pl. *ñakär* 'destroyed' (: 3 sg. *ñakäs*; contrast 3 sg. mid. *nakät,* with *o*-grade), B 3 pl. *lyaukar* 'caused to be illuminated' (: 3 sg. *lyauksa*; contrast 3 sg. mid. *lauksāte,* with *o*-grade), A 3 pl. *casär* 'put' (: 3 sg. *casäs*; contrast 3 sg. mid. *tsāte,* with zero grade), etc. leaves no doubt that, in the active, the three-way alternation **nok-* ~ **nek-* ~ **nēk-s-* was replaced in pre-Tocharian by a two-way alternation of non-sigmatic **nēk-* with sigmatic **nēk-s-*.[414] There is less

[411] As e.g. in **mén-h$_2$e* 'I brought to mind' : 1 pl. **mén-medhh$_2$,* **mér-h$_2$e* 'I died' : 1 pl. **mér-medhh$_2$* etc. To be sure, the 3 sg. in such regular middles agreed in vocalism with the rest of the paradigm, which was not the case in the emerging middle paradigm of **neiH* -.

[412] See Jasanoff 1988*a* : 236 f., n. 22. I am indebted to Douglas Adams for useful discussion of Alb. *njoh.*

[413] One thinks e.g. of Armenian aorists like 3 sg. *ēharc´* 'asked' < **(e)pr̥sket* (= Ved. impf. *áp̣r̥cchat*) and *elēz* 'licked' < **(e)leĝhet* (= Gk. impf. ἔλειχε) beside pres. *harc´anem, lizanem* ; or Tocharian class V preterites like A 3 sg. *ākṣiññā* 'proclaimed' and *okṣiññā* 'increased', historically the imperfects of lost presents in *-ñ̃* - (cf. Krause–Thomas 253).

[414] Cf. Weiss 1996: 674 and App. 1. The traditional view of 'long-vowel perfects' as reduplicated forms is repeated without further argumentation in *LIV*^{2} (22).

direct evidence for the middle, where the only truly diagnostic form is the 3 pl. A *nakänt* < **nok̑-n̥to,* with the same *o*-grade as in the 3 sg. But *nakänt* accords so well with the overall logic of the Tocharian system that we can safely posit the schema shown in Fig. 7.9:

FIGURE7.9

	PIE		pre-Toch.
active	sg. 1 **nók̑-h₂e*	⇒	sg. 1 **nēk̑-h₂e*
	2 **nók̑-th₂e*	⇒	2 **nēk̑-th₂e*
	3 **nék̑-s-t*	>	3 **nēk̑-s-t*
	pl. 3 **nék̑-n̥s*	⇒	pl. 3 **nēk̑-n̥s*
middle	sg. 3 **nók̑-o*	>	sg. 3 **nók̑-o* (> **nók̑-to*)
	pl. 3 **nék̑-ro*	⇒	pl. 3 **nók̑-ro* (> **nók̑-n̥to*)

For the subsequent development of the Tocharian endings, which will not be discussed further here, see §101.

§117. If this were the end of the Tocharian story—if Tocharian had simply levelled *-ē- through the active and *-*o*- through the middle of the presigmatic aorist—then the only difference between Tocharian and Hittite would be that the two languages carried out structurally comparable levellings in different directions. The remarkable fact about Tocharian, however, is that the replacement of **nok̑-* and **nek̑-* by **nēk̑-* in the active, and of **nek̑-* by **nok̑-* in the middle, did *not* lead to the complete disappearance of the older stem forms. Rather, the result was a paradigm split: while **nēk̑-(s-)* and **nok̑-* became the simplified active and middle stems, respectively, of the Tocharian '*s*-preterite', the discarded stems **nok̑-* / **nek̑-* and **nek̑-* became the basis for the active and middle paradigms of the corresponding Tocharian *subjunctive.*

We have already seen how the Tocharian subjunctive is made up of older indicative forms; the class V subjunctives discussed in Ch. 6, which continue stative-intransitive *h₂e*-conjugation aorists, were a crucial case in point. Formally related to the class V subjunctives are the subjunctives of Krause and Thomas's class I, characterized by athematic inflection and no synchronic suffix. A number of different historical types are included in class I, including

a handful of Narten presents and a few petrified nasal presents in *-*n(e)u*-.[415] More important for our present purposes, however, is the major subgroup of class I subjunctives with the same underlying **o* : *zero* (< **o* : **e*) ablaut pattern as the subjunctives of class V, and differing from class V only in the absence of the stem-final vowel *-*a*- and its associated umlaut effects. The verbs listed by Krause and Thomas (223) as forming ablauting class I subjunctives are B *käl*- 'endure' (cf. B 1 sg. *kelu,* inf. *kaltsi*), B *ku*- 'pour' (cf. B 1 sg. *kewu,* 3 sg. opt. *kuwi,* 3 sg. mid. *kutär*), B *tek*- 'touch' (cf. B 1 sg. *teku,* 3 sg. *tekäṃ,* opt. *taśi*), and A *prak*- / B *prek*- 'ask' (cf. B 1 sg. *preku,* 3 sg. opt. *parśi*). To these can be added a fifth, AB *näk*- 'destroy / perish' (cf. A 2 sg. *nakät* 'you will destroy', B 1 sg. *neku,* inf. *naktsi*).[416] Of this group, *prak*- / *prek*- and *näk*- have already figured prominently in our survey of Tocharian *s*-forms. Significantly, however, not just *prak*- / *prek*- and *näk*-, but all five of the above verbs form *s*-preterites (cf. B 3 sg. *keltsa* 'endured', A 3 sg. *śos(ā-ṃ)* 'poured (it)', B 3 sg. *teksa* 'touched'), and all except B *tek*- form *s*-presents as well (cf. A ptcp. mid. *kläsmāṃ* 'enduring' / B 3 sg. *kalṣäṃ* 'endures', A 3 sg. *kuṣ* 'pours'/B *kuṣäṃ* 'id.'). The list can be extended by B *er*- 'raise, produce' (cf. 3 sg. subj. mid. *ertär,* pl. *eräntär,* 3 sg. opt. *eri,* inf. *ertsi*), B *käs*- 'extinguish' (cf. inf. *kastsi*), and B *tsäk*- 'burn' (cf. inf. *tsaktsi*), which happen not to preserve ablaut in the subjunctive,[417] but which pattern identically with *prak*- / *prek*-, *näk*-, etc. in forming *s*-preterites and *s*-presents (cf. 3 sg. pret. mid. *ersate* 'lifted', 3 sg. pres. *erṣäṃ* 'produces'; 3 pl. pret. mid. *kessante* 'were extinguished', 3 sg. *keṣäṃ* (i.e. *keṣ-ṣ-*)[418] 'extinguishes'; 3 pl. pret. *tsekar* 'burned (tr.)', 1 sg. pres. *tsaksau* 'I burn (tr.)').

It is almost universally assumed, and with good reason, that the class I subjunctives of the roots B *er*-, B *käl*-, B *käs*-, B *ku*-, B *tek*-, AB *näk*-, A *prak*- / B *prek*-, and B *tsäk*- owe their real or inferred **o* : *zero* (**o* : **e*) ablaut to the same source as the ablauting subjunctives of class V. Scholars who trace class V to the perfect (e.g. Adams 1988: 78–80) naturally favour a perfect origin for class I as well. But a perfect-based theory for the subjunctives of class I is open to the

[415] The special role of the root **prek* - in the creation of the sigmatic aorist was first suggested to me, though without reference to the h_2e -conjugation theory, by Patrick Hollifield. Note that by making **prēk-s* - the 'conduit' for the introduction of the PIE desiderative morpheme **-(h$_1$)s* - into the aorist system, we obtain a natural explanation for why the **-s* - of the aorist, unlike the **-s* - of the desiderative and future, never surfaces as **-h$_1$s* - after sonorants. Once established in the aorist, the stem **prēk-s* - (< pre-PIE **prēk-h$_1$s* -, with loss of **-h$_1$* - between obstruents) would have lost its synchronic connection to other etymological desideratives, and speakers would have had no basis for analysing the sigmatic element as anything other than simple **-s* -.

[416] The reason would presumably have been semantic: the meanings of the desiderative marker **-h$_1$s* - and the optative suffix **i(e)h$_1$* - were very nearly identical. But the existence of the Latin *faxim* -type, an old acrostatic optative formation, enjoins caution on this point.

[417] Cf. Kimball 1994: 27; Melchert 56.

[418] The one exception to the rule seems to have been the pluperfect, which retained its 3 sg. in *-ta* < **-t* (pret. *wewakta* beside pres. *wewakki*).

same objections that the 'perfect theory' faces everywhere, and fails to explain the most striking distributional fact about class I subjunctives—their close synchronic association with class III (*s*-) preterites and class VIII (*s*-) presents. These objections vanish if we adopt the natural alternative view—that just as the class V subjunctives studied in Ch. 6 go back to h_2e-conjugation aorists of the stative-intransitive type, the class I subjunctives of *prak- / prek-*, *näk-*, etc. go back to h_2e-conjugation aorists of the presigmatic type. The pre-Tocharian subjunctive stems **prok- / *prek-*, **nok- / *nek-*, etc. are in fact nothing more nor less than the non-lengthened-grade residue of the fuller presigmatic stems **prok- / *prek- / *prēk-s-*, **nok- / *nek- / *nēk-s-*, etc.—the very stems that were simplified to **nēk- / *nēk-s-*, **prēk- / *prēk-s-*, etc. in the active of the *s*-preterite proper.[419]

§118. A similar paradigm split can be assumed for the middle. The majority of class I subjunctives form their middles by the synchronically unremarkable procedure of adding the (present) middle endings to the weak form of the subjunctive stem (cf. B 3 sg. mid. *kutär* beside 1 sg. act. *kewu,* A 3 pl. mid. *pärkäntär* beside B 1 sg. act. *preku*). The bivalent roots *näk-*, *tsäk-*, and *käs-*, however, make intransitive middle subjunctives of Krause and Thomas's class III, which, like present class III (§91), is marked by deponent thematic inflection with persistent *o*-colour (> A *-a-*, B *-e-*) of the thematic vowel (cf. 3 sg. A *nkatär,* B *nketär* 'will perish'; inf. B *tsketsi* 'to burn (intr.)'; 3 sg. B *ksetär* 'will be extinguished'). Other roots which form class III subjunctives include *täm-* 'be born' (A *cmatär,* B *cmetär*), *näm-* 'bend (tr. and intr.)' (B *nmetär,* inf. *ñmetsi*), *päk-* 'cook / ripen' (vb. n. A *pkalune,* B *pkelñe*), *wäl-* 'die' (A *wlatär*), and *kän-* 'come into being' (A *knatär,* B *knetär*), which have no corresponding actives. All of these verbs form *s*-preterites, and all except *wäl-* and *kän-* have *s*-presents as well. The initial palatalization in A *cmatär* / B *cmetär* and B *ñmetsi* shows that the immediate forerunners of class III were preforms of the type **nek-o-tor, *pekʷ-o-tor, *dhegʷh-o-tor,* etc., with *e*-grade of the root.

The traditional view of the class III subjunctives, long upheld by, among others, the present author (cf. Jasanoff 1978*a*: 36 f.), sees them as the direct continuants of PIE thematic presents **nék-e/o-*, **pékʷ-e/o-*, **dhégʷh-e/o-*, etc. The best argument in favour of this view is that most of the roots that form such subjunctives can be compared with actual thematic presents in Indo-Iranian and elsewhere (cf. Ved. *pácati* (= Lat. *coquō*) 'cooks', *dáhati* (= Lith. *degù*)

[419] The Luvian languages have *-(t)ta* (< PIE middle **-to* ?) in both conjugations; Palaic has *-t* and *-ta*.

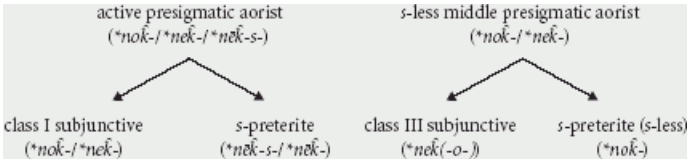
'burns', *jásamāna-* 'exhausted', *námate* 'bends', Lat. *genō* 'beget'). In the end, however, the exclusively medial inflection of the Tocharian forms proves an insuperable obstacle to this analysis. The thematic conjugation had no particular affinity for the middle in the parent language; indeed, the thematic stems **pékʷ-e/o-* 'cook', **gʷés-e/o-* 'extinguish', and **génh₁-e/o-* 'beget', seem specifically to have been active and transitive, with contrasting intransitive stems **pékʷ-ie/o-*, **gʷés-ie/o-*, and **gn̥h₁-ié/ó-* beside them.[420] The systematic absence of active thematic reflexes of the roots *näk-*, *päk-*, *tsäk-*, *käs-*, etc. cannot be explained under the standard assumption that the class III subjunctives *nkatär/ nketär,pkatär / pketär,* etc. go back to ordinary thematic middles.

A better analysis is available. Like the roots with ablauting class I subjunctives discussed in §117, almost all the roots that form class III subjunctives also form *s*-preterites, and no fewer than four of these have intransitive *s*-less middles of the type A *nakät* 'perished' (< **nok-(t)o*; cf. also *tamät, pakät, tsakät*). This suggests the possibility of extending our 'presigmatic' analysis of the active class I subjunctives **nok-* / **nek-*, **prok-* / **prek-*, etc. to the middle. We have already seen how the process of levelling in the paradigm of the presigmatic aorist active resulted in a morphological split, with the discarded *o-* and *e*-grade ablaut variants of the original active stem reassigned to the new class I subjunctive paradigm. In just the same way, we can now assume that the apophonic levelling of the presigmatic aorist middle—the process by which PIE 3 sg. **nók-o* : 3 pl. **nék-ro* became pre-Toch. 3 sg. **nók-o* (> **nók-to*) : 3 pl. **nók-ro* (> **nók-n̥to*)—led to the relegation of the discarded ablaut variant **nek-* to the paradigm of the nascent class III subjunctive. Once established as a subjunctive, the 3 sg. **nék-or,* with analogical *e*-grade and the normal substitution of primary **-or* for secondary **-o,* became the basis for the creation of a class III paradigm with persistent **-o-*. The formal development was the same as in the class III presents A *pärkatär* 'ascends' (< **bhr̥gh-o-tor*) and B *lipetär* 'is left over' (< **lip-o-tor*), ultimately based on root stative-intransitives **bhr̥gh-ór, *lip-ór* (§91).

The Tocharian treatment of roots like **nek-*, **pekʷ-*, and **dhégʷh-* can be summarized as in Fig. 7.10. The wholly unexpected capacity of the presigmatic aorist theory to generate parallel explanations for the enigmatic subjunctives of classes I and III is a powerful argument in its favour.

[420] The other, more usual type of presigmatic aorist—the non-bivalent type with **-s -* throughout the middle paradigm (3 sg. **prék-s-(t)o,* 3 pl. **prék-s-n̥to,* etc.)—is of course amply represented in Tocharian as well; cf. §104.

FIGURE7.10



§119. As we turn from Anatolian and Tocharian to the 'inner' IE languages, where the treatment of the presigmatic aorist was closely bound up with the fate of other middle and h_2e-conjugation aorist formations, it may be useful to summarize the inventory of middle and h_2e-conjugation aorists in the late protolanguage. We can distinguish five formal types (see also §§120, 124):

I. 'Normal' middle root aorists, both deponent and oppositional, with either full grade (e.g. 3 sg. **mén-to,* pl. **mén-ŗto* 'brought to mind'; **mér-to,* pl. **mér-ŗto* 'died') or zero grade of the root (e.g. 3 sg. **ḵ̂iu-tó* (*-*ó* ?), pl. **ḵ̂iu(u̯)-ŗtó* (*-*ró* ?) 'darted' (: Gk. σὺτο**ο**); **i̯ug-tó,* pl. **i̯ug-ŗtó* 'harnessed for oneself'). Within the context of our general framework, such forms either go back to or were modelled on pre-PIE protomiddles that were formally renewed as middles within the early history of the parent language (cf. §86).[421]
II. 'Normal' h_2e-conjugation root aorists, including both the conspicuous stative-intransitive subtype (e.g. 3 sg. **lógh-e,* pl. **légh-ŗs* 'lay down'; **u̯áĝ-e,* pl. **u̯áĝ-ŗs* 'broke (intr.)'; **bhóudh-e,* pl. **bhéudh-ŗs* 'woke up') and individual non-stative-intransitive examples (e.g. **dóh$_3$-e,* pl. **déh$_3$-ŗs* 'took'). Within our framework, such forms represent pre-PIE protomiddles that were reinterpreted as actives—often but not exclusively intransitive actives—within the parent language (§86).
III. Active presigmatic h_2e-conjugation aorists, typically transitive and formally characterized by a suppletive 3 sg. in **-s-t* with lengthened grade

[421] Alternatively, one might argue that *ñakär, ḷyaukar,* etc. simply generalized the palatalization of their 3 sg. counterparts *ñakäs, ḷyauksa,* etc. The facts discussed in §§117 f., however, make this possibility much less likely.

(e.g. 1 sg. **nóiH-h₂e,* 3 sg. **nḗiH-s-t,* 3 pl. **néiH-ŗs* 'led'; 1 sg. **dhógʷh-h₂e,* 3 sg. **dhḗgʷh-s-t,* 3 pl. **dhégʷh-ŗs* 'burned (tr.)'; 1 sg. **prók-h₂e,* 3 sg. **prḗk-s-t,* pl. **prék-ŗs* 'asked'). Within our framework, such forms continue the transitive active paradigm that initially resulted from the split of an earlier 'normal' h_2e-conjugation root aorist into two daughter paradigms, one transitive / active and the other intransitive / middle (§§110 ff.).

IV. middle (oppositional intransitive) presigmatic aorists, formally characterized by a completely non-sigmatic paradigm with *o*-grade in the 3 sg. and only in the 3 sg. (e.g. 1 sg. **néiH-h₂e,* 3 sg. **nóiH-o,* 3 pl. **néiH-ro* 'turned (intr.)'; 1 sg. **dhégʷh-h₂e,* 3 sg. **dhógʷh-o,* pl. **dhégʷh-ro* 'burned (intr.)'. Such forms, corresponding to actives of type III, reflect the middle paradigm that resulted from the split of an earlier h_2e-conjugation aorist into transitive / active and intransitive / middle daughter paradigms (§§110 ff.).

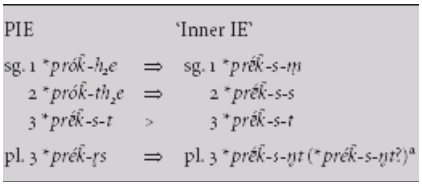
V. middle (self-benefactive, reflexive, etc.) presigmatic aorists, formally characterized by a completely sigmatic, 'normal' middle paradigm (e.g. 3 sg. **prék-s-(t)o,* 3 pl. **prék-s-ŗto* 'asked (on one's own behalf)'). Within our framework, such forms radiated from a nucleus of imperfects of Narten *s*-presents, perhaps originally confined to the root **prek-* itself (§113).[422]

Of these, types I (3 sg. **mén-to, *ĵug-tó*) and V (3 sg. **prék-s-to*), but not II, III, and IV, are standard fixtures of IE comparative grammar. Type III (3 sg. **nḗiH-s-t*) corresponds structurally, but only in small part formally, to the traditionally reconstructed active of the *s*-aorist. Types II (3 sg. **lógh-e*) and IV (3 sg. **nóiH-o*), set up chiefly on the basis of evidence from Hittite and Tocharian, have no counterparts at all in the canonical reconstruction of Proto-Indo-European.

§120. The 'inner' IE branches carried out two major innovations which set them apart from Anatolian and Tocharian and which, taken together, constitute a strong argument for seeing 'Inner IE' as a proper subgroup of the family as a whole. The first, in order of salience if not necessarily chronology, was *the complete sigmatization of the active of the presigmatic aorist*. The mixed paradigm of the presigmatic aorist was a synchronic anomaly—one that was repaired by extending the stem of the 3 sg. to the non-3 sg. forms (see Fig. 7.11).

[422] Probable Narten presents include the subjunctives of AB täṅk- 'hold back' (B inf. *taṅktsi* ; pres. *ceṅk* - < *-ē-) and B *yok* - 'drink' (B inf. *yoktsi* < $*h_1ē_2^{\underline{u}}h$ -). The class I subjunctives of B *au-n* - 'hit', *ri-n* - 'leave', and *sai-n* - are historically class VII subjunctives in *-ñ* - (< **-n(e)u* -; cf. §93, with n. 32˜ which have generalized their nasal to other moods and tenses.

FIGURE7.11



Thus arose the classical *s*-aorist, a category correctly reconstructed for the 'classical' IE family known to the Neogrammarians, but not for the wider aggregation of IE languages known to us since the discovery of Anatolian and Tocharian. Aiding the sigmatization process was the fact that the subjunctive, and in some cases the middle (**prék̂-s-(t)o,* etc.), of the presigmatic aorist were already fully sigmatic in the parent language. There was, however, no sigmatic optative in the parent language, and none was created until after the breakup of Inner IE.

The second shared innovation of the inner IE branches, possibly even earlier in point of time, was *the elimination of type II (**bhóudh-e : *bhéudh-r̥s*) and the transfer of the stative-intransitive aorists of type II to type IV (**nóiH-o : *néiH-ro*)*. Thus, where the parent language had separate paradigms for the intransitive aorists meaning 'awoke' and 'turned (intr.)' (see Fig. 7.12a), the inner IE languages merged them into a single 'passive-intransitive' type (see Fig. 7.12b). Aorists of the new consolidated type, with consistent **-o* in the 3 sg. and **-ro* in the 3 pl., were overwhelmingly intransitive, in some cases being opposed to transitive sigmatic or presigmatic actives. They also retained *o*-grade in the 3 sg.—a decidedly un-middle-like vestige of paradigmatic ablaut. 'Passive-intransitive' aorists remained quite distinct from 'normal' root aorist middles of type I (**mén-to* : **mén-n̥to, *i̯ug-tó* : **i̯ug-n̥tó*).

FIGURE7.12A

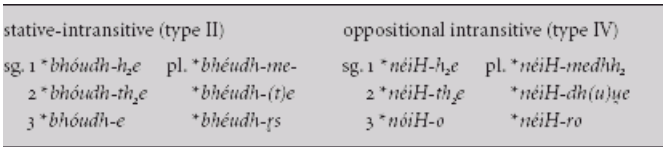
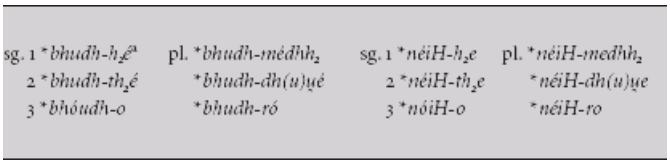


FIGURE7.12B



Taken together with the conversion of the presigmatic active into the familiar sigmatic aorist in *-*s-m,* *-*s-s,* *-*s-t,* etc., the demise of the stative-intransitives of type II had the effect of eliminating or drastically restructuring the h_2e-conjugation aorist as a formal category. Henceforth all active aorists—root athematic, thematic, and sigmatic—took the active endings (*-*m,* *-*s,* *-*t,* etc.), while all or nearly all aorists with endings of the h_2e-series were actual synchronic middles.[423]

§121. The Inner IE situation described above is best preserved in Indo-Iranian. The highly productive *s*-aorist, with its fully sigmatic indicative, both active and middle,[424] is notable for its retention of *si*-imperatives and its lack of a sigmatic optative. Without a doubt the most remarkable conservation in the Indo-Iranian system, however, is the continued contrast between normal middle and so-called 'passive' (< Inner IE passive-intransitive) root aorists. Our discussion of the Indo-Iranian passive aorist in Ch. 6 was necessarily incomplete: we saw that the paradigm *ábodhi* : *abudhran* was the partially medialized

[423] The transitive subjunctive forms of *näk* - were helpfully drawn to my attention in 1987 by K. T. Schmidt.

[424] In the case of *käs* - and *täk* - the relevant strong (= active singular) forms are simply not attested. The root *ar* -/*er* - is incapable of ablaut, owing to the phonological merger of *o* - and zero grade in absolute initial position.

reflex of an older h_2e-conjugation aorist (§96), but no attempt was made to account for its restriction to the third person or the peculiar 3 sg. ending *-i*. The reason for the confinement of the passive aorist to the third person is now clear. The *o*-grade of the passive-intransitive aorist was already restricted to the 3 sg. in Proto-Inner IE; the reason we find no Ved. 1 sg. **ábodhi* 'I awoke' is that the PIE h_2e-conjugation 1 sg. (**bhóudh-h₂é*) that would have yielded such a form was supplanted in Inner IE by the zero-grade middle 1 sg. **bhudh-h₂é*. Ved. 1 sg. *ábhutsi,* the actual form that means 'I awoke' in the Rigveda (*prá ábhutsi* viii. 9. 16), is the inner-Vedic sigmatic replacement of the expected **ábudhi* < **bhudh-h₂é*; the process is described by Narten (1964: 26).

The 3 sg. ending *-i* is more difficult. Yet the parameters are clear: *-i* must somehow have replaced **-a* < **-o,* the only possible candidate for the 3 sg. ending in the ancestral passive-intransitive paradigm.[425] An analogical explanation must therefore be sought within Indo-Iranian. Two generic sources of analogical **-i* are available—the **-i-* of *seṭ* roots, and the **-i* of the first person middle endings **-i* (1 sg.), **-u̯adhi* (1 du.), and **-madhi* (1 pl.). Both sources can be exploited simultaneously if we assume that the replacement of **-a* by **-i* had its origin in a specific Indo-Iranian form—the passive aorist **(á)ǰ̌ani* (> Ved. *ájani, jáni*) 'was born'. The PIE root **gēnh₁-* 'beget, be born' formed a stative-intransitive h_2e-conjugation aorist in the parent language (cf. §92). In keeping with our results above, the corresponding Inner IE passive-intransitive aorist and its regular pre-Indo-Iranian descendant can be set up as in Fig. 7.13:

FIGURE7.13

Inner IE passive-intransitive aorist		pre-IIr. passive aorist	
sg. 1 **ǧénh₁-h₂e*	pl. **ǧénh₁-medhh₂*	sg. 1 *źán-i*[a]	pl. **źánï-madhï*
2 **ǧénh₁-th₂e*	**ǧénh₁-dh(u)u̯e*	2 **źánï-thās*	**źánï-dh(u)u̯a*
3 **ǧónh₁-o*	**ǧénh₁-ro*	3 **źán-a*	**źánï-ra*

[425] Wrongly assigned to class II by Krause–Thomas (199) and Adams (1999: 177), who assumes an '*o* -grade intensive'. In fact, the starting point was a normal *s* -present **gʷʰes-se/o* - (> A 2 sg. *käṣṣi,* with quasi-regular depalatalization), which in Tocharian B acquired the frozen *e* -vocalism (< **-o* -, **-ē-*) of the preterite and (unattested) class I subjunctive.

Every form in the pre-Indo-Iranian paradigm other than the 3 sg. contained the sequence **ź́ánĭ-*—a fact that would have provided favourable soil, so to speak, for any analogical 'push' to install **'ź́ánĭ* in the 3 sg. as well. The actual impetus for the change was probably supplied by the perfect middle, which in the case of this particular root stood in a close synchronic relationship to the passive aorist (cf. Ved. 3 sg. perf. mid. *jajñé* 'is in the condition of having been born': 3 sg. pass. aor. *ájani* 'entered the condition of having been born'). Compare the two paradigms below (Fig. 7.14):

FIGURE7.14

pre-IIr. passive aorist		pre-IIr. perfect middle	
sg. 1 **źánĭ*	pl. **źánĭmadhĭ*	sg. 1 **źaźnái*	pl. **źaźnĭmádhai*
2 **źánĭthās*	**źánĭdh(u)ṷa*	2 **źaźnĭšái*	**źaźnĭdh(u)ṷái*
3 **źána*	**źánĭra*	3 **źaźnái*	**źaźnĭrái*

The proportion that suggested itself was

1 sg. perf. mid. **źaźnái* : 1 sg. pass. aor. **(á)źanĭ* : :

3 sg. perf. mid. **źaźnái* : 3 sg. pass. aor. *X,*

where *X* was solved as **(á)źanĭ* (> Ved. *ājáni,jánĭ*).[426]

Once established in the 3 sg. **(á)źanĭ* (> later IIr. **(á)źani*) 'was born', the ending **-i* would have been free to spread throughout the passive aorist category. Important in the early stages of the process may have been the fact that **(á)źani,* like many passive aorists, was synchronically correlated with a transitive reduplicated aorist (cf. Ved. *ájījanat* 'begat', YAv. 3 pl. pres. *zīzan∂ṇti*). The pattern **(á)źīźanat* 'begat': **(á)źani* 'was born' would have provided a model for the creation of forms of the type **(á)rauči* 'shone forth' (replacing **(á)rauča*; cf. Ved. *aroci*) beside the reduplicated aorist **(á)rūručat* 'illuminated' (cf. Ved. *árurucat*), **(á)śauči* 'was kindled' (replacing **(á)śauča*; cf. Ved. *áśoci*) beside the reduplicated aorist **(á)śūśučat* 'kindled' (cf. Ved. *áśūśucat*), etc.

[426] An incidental consequence of this discovery is that, despite the caveat in §107, the optatives corresponding to class I subjunctives (*parśi, taśi, eri,* etc.) now emerge as true cognates of the non-sigmatic *s* -aorist optatives of Indo-Iranian (GAv. *zaēmā,* YAv. *vaīnīt,* Ved. *sahyā́ -, jéṣ -, yéṣ -*, etc.).

§122. Compared with Indo-Iranian, the Greek verbal system presents a far more modern appearance. As far as the *s*-aorist was concerned, Greek created a proper sigmatic optative, although the lack of uniformity from dialect to dialect (cf. Attic 3 sg. λύσαι, 'Aeolic' λύσειε, Central Cretan κοσμησιε, δικακσιε) suggests that it was a very late development (cf. n. 28). *si*-imperatives were lost or transformed beyond recognition.[427] More generally, the almost boundless productivity of the *s*-aorist in Greek testifies to the truth of Meillet's dictum that 'les formes qui, à date historique, sont devenues normales sont celles qui ont subi le plus de réfections' (Meillet 1931: 194).

The distinction between normal and passive-intransitive middle root aorists was abandoned as well. The few Greek forms that correspond etymologically to Vedic aorist passives in *-i* are apophonically normalized 3 sg. root aorists in -το with 3 pl. counterparts in -ντο or -ατο. Beside Ved. *ájani,* for example, Greek has only the regularized *e*-grade 3 sg. ἐγένετο 'became' (= Arm. *cnaw* 'was born'), evidently reflecting an early substitution of virtual **génh$_1$-to* for **gónh$_1$-o.* Similarly, Greek has 3 sg. λἐκτο 'lay down' where the Inner IE common parent of Greek and Indo-Iranian had the passive-intransitive 3 sg. **lógh-o,* and pre-dialectal PIE had the *h$_2$e*-conjugation form **lógh-e* (cf. Hitt. *lāki*). An especially instructive example is furnished by the form χὐτο 'was poured', the exact cognate, so to speak, of Ved. *ádhāvi* 'id.'. The root **gheu-* was apparently of the bivalent type in late PIE, with paired transitive and intransitive paradigms (Fig. 7.15):

FIGURE7.15

active ('poured (tr.)')		middle ('flowed, poured (intr.)')	
sg. 1 **ǵhóu-h$_2$e*	pl. **ǵhéu-me-*	sg. 1 **ǵhéu-h$_2$e*	pl. **ǵhéu-medhh$_2$*
2 **ǵhóu-th$_2$e*	**ǵhéu-(t)e*	2 **ǵhéu-th$_2$e*	**ǵhéu-dh(u)e*
3 **ǵhĕu-s-t*	**ǵhéu̯-ṛs*	3 **ǵhóu̯-o*	**ǵhéu-ro*

From the active paradigm were built the Tocharian *s*-preterite (A 3 sg. *śosā-ṃ* < **ǵhēu-s-*) and class I subjunctive (B 1 sg. *kewu* < **ghou̯-*). In Inner IE the active was completely sigmatized, while the middle—now with zero-grade **ghu-*' for **ghéu*—joined the 'passive-intransitive' type, as in Fig. 7.16 below. The Inner IE

[427] The *-ie/o* -presents are represented by Ved. *pácyate* (= Gk. πέσσομαι and back-formed transitive πέσσω), Ved. 2 pl. *jasyata,* and Ved. *jáyate* (= OIr. *gainithir*), respectively. Here too belongs Ved. 3 sg. *náśyati* 'perishes' (= YAv. *nasiieiti*). As already remarked in n. 11, intransitive *-ie/o* -presents of this type appear to lie behind the Tocharian class X type A *näknäṣtär* 'perishes', *tsäknäṣtär* 'burns (intr.)'.

situation was essentially preserved in Vedic Sanskrit, where we find both the active *s*-aorist *ahauṣīt* (MS) (cf. *hoṣi* (RV)) and the passive aorist *áhāvi,* reproducing earlier **gh*ḗ*u-s-t* and **ghóu̯-o,* respectively.[428] In Greek, the *s*-aorist active underlies Attic-Ionic ἐχεα and Aeolic ἐχευα (< Common Gk. **khéu̯-h-*),[429] while the 3 sg. mid. appears in the normalized form χὐτο, standing in the same relation to the 'ideal' 3 sg. **χόfο* as ἐγένετο and λέκτο to theoretically expected **ἐγονο* and **λόχο*.

FIGURE7.16

s-aorist active		'passive-intransitive' middle	
sg. 1 **ǵhéu-s-m̥*	pl. **ǵhéu-s-me*	sg. 1 **ǵhu-h₂é*	pl. **ǵhu-médʰh₂*
2 **ǵhéu-s-s*	**ǵhéu-s-te*	2 **ǵhu-th₂é*	**ǵhu-dʰ(u)u̯é*
3 **ǵhéu-s-t*	**ǵhéu-s-n̥t*	3 **ǵhóu̯-o*	**ǵhu-ró*

§123. We can appropriately end our discussion of *h₂e*-conjugation aorists where it began—in Hittite. The existence of *h₂e*-conjugation aorists, it will be recalled, was in the first instance suggested by the fact that certain deradical *ḫi*-verbs, namely, *ăr-*, *arai-*, *karāp- / karip(p)-*, *lăk-*, *šăkk- / šekk-*, *šarap- / šarip(p)-*, *dă-*, and *wăk-*, were based on roots that seemed more likely to have formed root aorists than root presents of the *molō*-type in PIE. From our initial hypothesis that these verbs went back to *h₂e*-conjugation aorists, we were led to look for traces of such aorists in the other IE languages. Our search bore fruit in the discovery of the 'stative-intransitive' class—a type chiefly continued by the passive aorists of Indo-Iranian and a subset of the class V subjunctives of Tocharian. The comparative evidence showed that two of the eight Hittite roots on our list—*lăk-* and *wăk-* —belonged to this type. We then turned to the problem of the Hittite ending -š and its enigmatic relationship to the *h₂e*-conjugation and the sigmatic aorist. Here too there was a significant discovery: examination of the complex of forms associated with the *s*-aorist in Indo-Iranian and Tocharian revealed that the classical sigmatic aorist was the

[428] The two subtypes show differences of patterning. The rare full-grade forms seem to have been exclusively deponent; they had the same meaning and distributional properties as stative-intransitive aorists, of which they were probably a relatively late inner-IE development (cf. §95 with n. 39, and §97 with n. 44). The zero-grade forms, on the other hand, were typically associated with root aorist actives (cf. e.g. Ved. 1 sg. *cyávam* < **ḱi̯eu -*, *yójam* < **i̯eug -*) and occasionally with *e* -grade present middles as well (cf. Ved. *cyávāna* -, Gk. σεύ(ε)ται beside σύτο; further Gk. πέτατται 'flies' beside aor. ἔπτατο).

[429] It must remain an open question for the present whether types IV and V contrasted in the parent language—i.e. whether there was a systematic opposition between forms of the type **nóiH-o* 'turned (intr.)' and forms of the type **néiH-s-(t)o* 'led (in one's own interest)'. There is little direct evidence for pairs of this kind in the early IE languages.

post-IE replacement of an earlier non-sigmatic paradigm with **o* : **e* ablaut. Hitt. *nai-*, not included in our original population of 'suspect' *ḫi*-verbs but clearly linked to an *s*-aorist in Indo-Iranian, thus joined the ranks of the *ḫi*-conjugation verbs that could be independently proved to go back to a *h*$_2$*e*- conjugation aorist.

Given this record, it is natural to return to the verbs *ā̆r-*, *arai-*, *karāp-* / *karip(p)-*, *šā̆kk-* / *šekk-*, *šarap-* / *šarip(p)-*, and *dā̆-* and ask whether they too can be shown to continue *h*$_2$*e*-conjugation aorists on the basis of independent comparative evidence from the non-Anatolian languages. The answer, for the moment, must be non-committal. The case of *dā̆-* has already been discussed (cf. §86). The meaning 'take' could easily have evolved from an earlier value 'give to oneself', which would have been the sense of the hypothetical protomiddle **dóh*$_3$*-h*$_2$*e,* **dóh*$_3$*-th*$_2$*e,* **dóh*$_3$*-e,* etc.; indeed, it is hard to imagine a better formula for explaining the combined form and meaning of the Hittite verb. But since the *h*$_2$*e*-conjugation aorist **doh*$_3$- / **deh*$_3$- did not pattern as part of a stative-intransitive system and did not have the kind of bivalent semantics that would have led to the creation of a presigmatic aorist, we have no way—at least not yet—of identifying the comparanda that would anchor our *h*$_2$*e*- conjugation reconstruction in the non-Anatolian comparative evidence. The same, in the last analysis, is true of *karāp-* / *karip(p)-* 'eat (of animals)' *šarap-* / *šarip(p)-* 'sip', and *šā̆kk-* / *šekk-*. If *karāp-* / *karip(p)-* in fact goes back to the root **ghrebh(H)-* 'seize', then the stem **ghrobh(H)-* / **ghrebh(H)-* must have been the *h*$_2$*e*-conjugation / protomiddle corresponding to the active root aorist **ghrebh(H)-* / **ghr̥bh(H)-* (: Ved. 3 sg. *agrabhīt*); the primitive sense would have been 'seize for oneself', whence 'eat (in a rough and uncouth way)'. *šarap-* / *šarip(p)-*, parallel in every way to *karāp-* / *karip(p)-*, and *šā̆kk-* / *šekk-* 'know' < *'distinguish the parts of', can easily be given a 'middle' interpreta-tion as well. But here again, although a *h*$_2$*e*-conjugation aorist analysis is eminently reasonable from the point of view of Hittite, the non-Anatolian languages add nothing conclusive to the dossier.[430]

arai- 'rise' and *ā̆r-* 'arrive' both correspond, at least in part, to middles elsewhere. *arai-*, whose Hittite inflection suggests a stem **HroiH-* / **HreiH-*, has the same root etymology as Arm. 3 sg. *y-areaw;* pl. *y-arean* 'rose' (< **ari̯i̯ato,* **ari̯i̯anto*), pointing to a pre-Armenian 'normal' middle root aorist **HriH-tó,* *-*n̥tó*. Since regularized middles of this kind were apparently the ordinary outcome of Inner IE passive-intransitive aorists in Armenian (cf. *cnaw* < **ĝénh*$_1$*-to,*

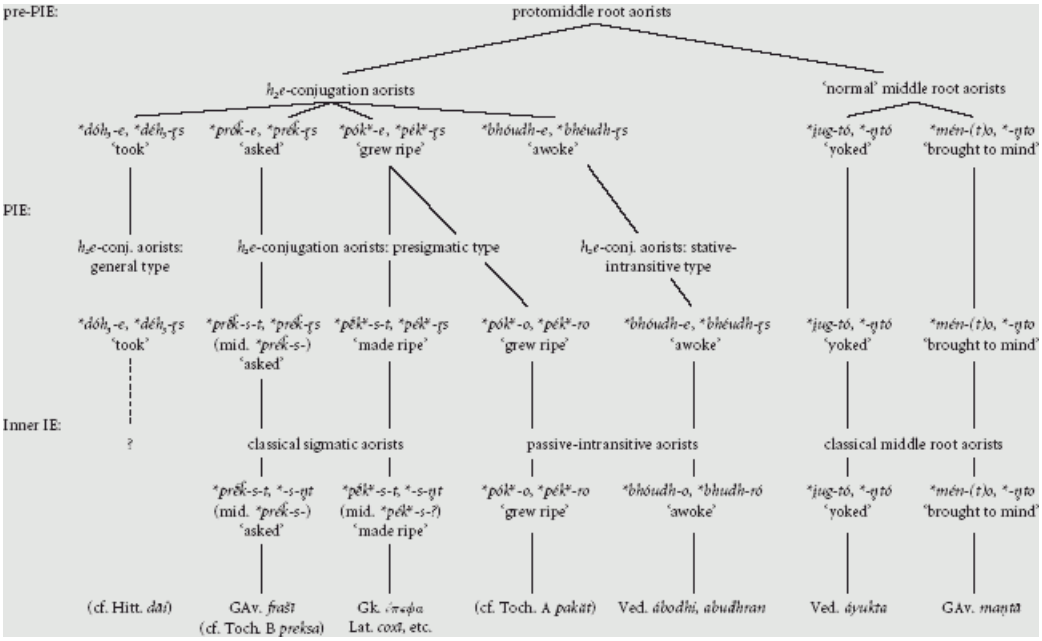
[430] The qualification 'nearly' is important, because the Inner IE fate of the *non* -stative-intransitives of type II—the type exemplified above by **doh*$_3$ - / **deh*$_3$ - 'take'—is still obscure. **doh*$_3$ - / **deh*$_3$ - itself is represented in Vedic by the thematic aorist *ā́dat,* which could in principle represent either a renewed middle **dh*$_3$*-ó,* with added *-*t* as in *ā́duhat* (so e.g. Watkins 1969: 90, following Wackernagel), or a genuine thematic aorist **dh*$_3$*-é-t.* Note also Arm. *arbi* 'I drank' < **sr̥bh-é/ó* -, from the same root as the *h*$_2$*e* -conjugation aorist **srobh* - / **srebh* - (: Hitt. *šarapi*). It remains to be seen whether the development of type II non-stative-intransitives to thematic aorists was a recurrent pattern. See further §§123, 130.

from earlier **ĝonh₁-* / **ĝenh₁-*), the deponent *y-areau, -an* is entirely compatible with the hypothesis of a PIE stative-intransitive 3 sg. **HróiH-e,* pl. **HréiH-ŗs*. On the other hand, there is no reliable extra-Anatolian evidence for a stative-intransitive system based on the root **HreiH-* in the parent language, and hence no way to be sure that the PIE paradigm was not simply a middle of the 'normal' type from the outset. As for *ăr-*, the comparative evidence furnishes a positive *embarras* of possibly relevant forms. The reflexes of PIE **h₁er-* 'start moving, rise' include a middle root aorist with both *o*-grade (cf. Gk. ὦρτο 'arose', ptcp. ὄρμενος) and *e*-grade (Ved. *árta* 'moved', ptcp. *ărāṇá-*; cf. also Gk. ἔρετο ὡρμήθη (cf. also λα-ἐρτης 'rousing the people') and Hitt. *arta(ri)* 'stands'), a perfect (Gk. ὄρωρε, Ved. *ā́ra*), and even an *s*-aorist (Gk. ὦρσε, Toch. A *ar-s-*, B *er-s-*; cf. also class I subj. B *er-*). The wealth of data gives the impression of a jigsaw puzzle in which the h_2e-conjugation aorist **h₁or-* / **h₁er-*, once fitted into place, may prove to be the piece that allows a coherent picture to emerge. But making sense of all the apparent reflexes of the root **h₁er-* must remain a task for the future.[431]

Whatever confidence one places in the value of these last examples, it is clear that the number of Hittite *ḫi*-verbs that can be shown to go back to h_2e-conjugation aorists on the basis of actual word equations is comparatively modest. Yet taken together with the more abundant and transparent evidence for h_2e-conjugation presents in PIE, the case for h_2e-conjugation aorists in the parent language is overwhelming. Not only are such forms predicted by the present-based h_2e-conjugation theory of Chs. 3–5; the h_2e-conjugation also proves to be the 'glue' that binds together such traditionally problematic

[431] Note that the sigmatic type **prék̑-s-(t)o* has almost entirely replaced the *s* -less type **nóiH-o* in the middle in Indo-Iranian; the only old-looking transitive : intransitive pair that preserves the pattern of Hitt. *naiš* : *neyat* and Toch. A *ñakäs* : *nakät* is *ahauṣīt* 'poured' : *á́bhāvi* 'was / has been poured', on which see below. Within the core group of roots that made both presigmatic aorists and thematic presents, the isolated participle *úhāna* - 'proceeding' (viii. 40. 8), replacing earlier **vá́hāna* -, stands as the sole remaining trace of the *s* -less intransitive middle. For the rest, the absence of forms like **á́nāyi, *á́vāhi, *á́pāci, *á́dāhi,* and **á́nāmi* in Vedic Sanskrit is striking.

FIGURE7.17


pre-PIE:
protomiddle root aorists
h_2e-conjugation aorists
'normal' middle root aorists
*dóh$_3$-e, *déh$_3$-t$_s$ 'took'
*prók-e, *prék-t$_s$ 'asked'
*pók^u-e, *pék^u-t$_s$ 'grew ripe'
*bhóudh-e, *bhéudh-t$_s$ 'awoke'
*jug-tó, *-g$_y$tó 'yoked'
*mén-(t)o, *-g$_y$to 'brought to mind'
PIE:
h_2e-conj. aorists: general type
h_2e-conjugation aorists: presigmatic type
h_2e-conj. aorists: stative-intransitive type
*dóh$_3$-e, *déh$_3$-t$_s$ 'took'
*prék-s-t, *prék-t$_s$ (mid. *prék-s-) 'asked'
*pék^u-s-t, *pék^u-t$_s$ 'made ripe'
*pók^u-o, *pék^u-ro 'grew ripe'
*bhóudh-e, *bhéudh-t$_s$ 'awoke'
*jug-tó, *-g$_y$tó 'yoked'
*mén-(t)o, *-g$_y$to 'brought to mind'
Inner IE:
?
classical sigmatic aorists
passive-intransitive aorists
classical middle root aorists
*prék-s-t, *-s-g$_y$t (mid. *prék-s-) 'asked'
*pék^u-s-t, *-s-g$_y$t (mid. *pék^u-s-?) 'made ripe'
*pók^u-o, *pék^u-ro 'grew ripe'
*bhóudh-o, *bhudh-ró 'awoke'
*jug-tó, *-g$_y$tó 'yoked'
*mén-(t)o, *-g$_y$to 'brought to mind'
(cf. Hitt. *dai*)
GAv. *frašī* (cf. Toch. B *preksa*)
Gk. *ἔπεφνα* Lat. *coxī*, etc.
(cf. Toch. A *pakāt*)
Ved. *ábodhi, abudhran*
Ved. *áyukta*
GAv. *maṇtā*

formations as the Indo-Iranian passive aorist in *-*i,* the Vedic precative type *je***ṣ***am, je***ṣ***ma,* the ablauting subjunctives of Tocharian, and the ever more remarkable-seeming PIE *s*-aorist itself.

§124. As an aid to the reader, a tabular overview of the protomiddle-derived aorists discussed in Chs. 6 and 7 is given in Fig. 7.17. If the table is read from the bottom up, it will be seen that Inner IE, the late stage of PIE following the separation of Anatolian and Tocharian from the rest of the family, had three descriptively important groups of forms: classical middle root aorists (e.g. **mén-(t)o, *-ǵto*; **i̯ug-tó, *-ǵtó*), classical sigmatic aorists (e.g. **pr***é́***k-s-t, *-s-ǵt*; **p***é́***kʷ-s-t, *-s-ǵt*), and—the main novelty of the reconstruction presented here—passive-intransitive aorists with the older ('stative') middle endings and *o*-grade in the 3 sg. Only the first of these, the 'normal' middles, had an uncomplicated history. The classical sigmatic aorist was an innovation of Inner IE; its ancestor at the PIE stage was the presigmatic h_2e-conjugation aorist, with a transitive active paradigm that was still largely non-sigmatic (3 sg. **pr***é́***k-s-t, *p***é́***kʷ-s-t*; pl. **prék-ḯrs, *pékʷ-ḯrs*), and an opposed intransitive paradigm that lacked *-*s*- entirely (3 sg. **pókʷ-o,* pl. **pékʷ-ro*). The intransitive paradigm of the presigmatic aorist, with its distinctive *o*-grade in the 3 sg., was one of the two main sources of the later passive-intransitive aorist; the other was the PIE stative-intransitive aorist, characterized by **o* : **e* ablaut and the standard h_2e-conjugation endings. Internal reconstruction leaves no doubt that at a comparatively 'shallow' stage of pre-PIE preceding PIE proper, the presigmatic aorist and the stative-intransitive aorist were specializations of a single h_2e-conjugation type, which also included individual verbs (e.g. 3 sg. **dóh₃-e* 'took', pl. **déh₃-ḯrs*) that followed neither of the two main lines of development studied in Chs. 6 and 7. At the still earlier pre-PIE stage depicted in the top line of the figure, the h_2e-conjugation and the 'normal' middle were represented by a single category, the protomiddle, with undifferentiated endings and a range of 'internal' functions that can no longer be exactly specified.

8 Retrospective

§125. We have now come a considerable distance since first taking up the problem of Hitt. *mall(a)-* in Ch. 3. It is time to compare the 'new look' of the PIE verbal system, as presented here, with older views.

The first point to emphasize about the post-*h_2e*-conjugation model of the PIE verb is that it is in many respects extremely conservative. The PIE verb, as portrayed in Chs. 3–7, had the usual three persons and three numbers, as well as the familiar two voices, active and mediopassive. It also had a fully grammaticalized aspectual contrast between present / imperfect and aorist; the reductionist view that the parent language had only a system of *Aktionsarten* is not supported, and is if anything undercut, by our findings here. The new PIE verb, like the old, had a perfect—a resultative-stative present with both an active and a middle, and a preterite (pluperfect) that patterned as a stative imperfect. It likewise had the classical four moods—indicative, imperative, optative, and subjunctive. The antiquity of the subjunctive has sometimes been questioned, but the existence of *si*-imperatives in Hittite—haplologized 2 sg. subjunctives specialized in an imperative sense—leaves no doubt as to its PIE status.

The novelty of the 'new' system is entirely at the formal level. The *h_2e-* conjugation theory makes one key assumption—that grammatical actives in late Proto-Indo-European could be associated with either the normal active endings **-m(i), *-s(i), *-t(i),* etc., or the 'perfect' endings **-h_2e, *-th_2e, *-e,* etc. Whether a given active present or aorist took the *mi-* or *h_2e*-series of endings in the parent language was determined by its inner-IE history rather than by functional factors. Being synchronically opaque, the distinction between the two conjugations was inherently unstable. Only in Anatolian did the *h_2e*-conjugation survive and maintain its integrity as the *ḫi*-conjugation, and even here the merger of the two modes of inflection is clearly under way. Outside Anatolian, *h_2e*-conjugation presents and aorists can be recognized, *inter alia,* by their direct or indirect etymological connection to *ḫi*-verbs in Hittite.

§126. Chs. 3–5 were devoted to a discussion of *h_2e*-conjugation presents, of which the following major types emerged:

(1) "*molō*-presents" (e.g. PIE 3 sg. **mólh$_2$-e* 'grinds', 3 pl. **mélh$_2$-ŋti*),[432] abundant in Hittite but recessive elsewhere. The Hittite reflexes are root *ḫi*-verbs, apophonically invariant or with *ā* : *ă* ablaut; the stem is frequently extended by a non-etymological *-a-* extracted from the 3 pl. The corresponding non-Anatolian forms are simple thematic or *-i̯e/o-*presents, often with *o*-grade.

(2) "*dai*-presents" (e.g. PIE **dhéh$_1$-i̯-e* 'sucks', 3 pl. **dhh$_1$-i̯-énti*), productively built to roots of the structure **(C)CeH-* in Hittite and fairly common elsewhere. In Hittite the morphological type is seen in *dāi,* pl. *tiyanzi* 'put'; outside Anatolian the reflexes are 'verba pura' in **-i̯e/o-*. An allied *i*-present type, represented by **spéh$_2$-i̯-e* 'is sated', pl. **spéh$_2$-i̯-ŋti,* had Narten ablaut.

(3) "*grbhāyáti-* (or *iyannai-*) presents" (e.g. PIE **gʰrbh-ŋh$_2$-i̯-é* 'seizes', 3 pl. **gʰrbh-ŋh$_2$-i̯-énti*), i.e. *i*-presents built to the nasal-infix presents of laryngeal-final roots. The Hittite reflexes are the 'duratives' in 3 sg. *-annai,* pl. *-anniyanzi*; the other languages have presents in **-n̄i̯é/ó- < *-ŋH-i̯é/ó-* or (in Indo-Iranian) **-n̄i̯é/ó-*, shortened from **-n̄i̯é/ó-*.

(4) "ἵμἰμνω-presents" (e.g. PIE **mí-mn-e* 'stands firm', 3 pl. **mí-mn-ŋti*), represented by a limited number of *i*-reduplicated *ḫi*-verbs in Hittite and by *i*-reduplicated thematic presents—the type of Ved. *píbati* and Lat. *sistō*—in the non-Anatolian languages.

(5) "*cíkitsati*-presents" (e.g. PIE **kʷí-kʷit-s;-e* 'desires / tries to understand', 3 pl. **kʷí-kʷit-s-ŋti*), the sigmatic counterpart of the μἵμνω -type. The Hittite reflexes are the iteratives in *-šš(a)-* (e.g. *išš(a)-* 'perform' < **i̯í-ih$_1$-s-*, *vel sim.*); the other languages have *i*-reduplicated thematic desideratives and futures.

(6) "*newaḫḫi*-presents" (e.g. PIE **néu̯e-h$_2$-e* 'makes new', 3 pl. **néu̯e-h$_2$-ŋti*), the source of the productive denominative factitives in *-aḫ(ḫ)-* in Hittite. The non-Anatolian languages have either **-āi̯e/o- < *-eh$_2$-i̯e/o-* or (in Baltic) **-ā̃- < *-eh$_2$-e/o-*.

This list does not exhaust the inventory; we have also met a few examples of sigmatic *molō*-presents (e.g. **h$_2$u̯óg-s-e* 'increases', 3 pl. **h$_2$u̯ég-s-ŋti*) and left open the possibility that some or all *u*-presents (e.g. **léh$_2$-u̯-e* 'pours', 3 pl. **l̥h$_2$-u̯-énti*)

[432] Despite Jasanoff 1992: 145 f., where a case was made for **-e.*

followed the *h_2e*-conjugation as well. In addition, there is good reason to suspect that the simple *e*-grade thematic class—the formation represented by the familiar **bhér-e/o-* 'carry'—was created within the parent language from a pre-PIE athematic *h_2e*-conjugation type **bhér-h_2e, *bhér-th$_2$e, *bhér-e,* etc. In late PIE only the thematized 1 sg. **bhér-o-h_2,* apocopated from earlier **bhér-e-h_2e* or **bhér-o-h_2e,* retained its *h_2e*-conjugation ending (see App. 1).

§127. In our approach to the problem of the Anatolian *ḫi*-conjugation, we have made it an explicit methodological principle to take the formal evidence of the individual IE languages at face value, rather than to insist on finding a tortuously elucidated 'meaning' for every reconstructed formation. 'Idealism' in reconstruction—the tendency to impute a discoverable, logically specifiable function to every stem class or grammatical idiosyncrasy that we reconstruct in a protolanguage—is a constant and unwholesome temptation in current-day comparative-historical linguistics. In fact, Proto-Indo-European was as much a real language as its attested daughters, where purely morphological features like the distinction between strong and weak verbs in modern English or German, or the distinction between nasal and reduplicated presents in Sanskrit, have no synchronic functional correlates. Synchronically speaking, the *h_2e*-conjugation : *mi*-conjugation opposition was just such a feature. An Indo-European child learned to say **mólh$_2$-e* for 'grinds' rather than, for instance, **mélh$_2$-ti* or **m̥lh$_2$-é-ti,* because this was what other PIE speakers said, not because the root **melh$_2$-* was coded in his mental lexicon with an array of subtle diathetic and aspectual specifications that modern philologists, writing six thousand years after the fact, have thought themselves able to discover.

None of this is to deny, of course, that there was a rationale for the assignment of a given present stem to the *mi*- or *h_2e*-conjugation. It was, however, a *historical* rationale. The original status of the *h_2e*-conjugation can be inferred from the history of the PIE perfect 'active', which is transparently a kind of middle *déclassé,* with middle-like semantics and endings related to, but more archaic than, those of the classical middle.[433] In exactly the same way, the *h_2e*-conjugation arose from a nucleus of pre-canonical middles ('protomiddles')

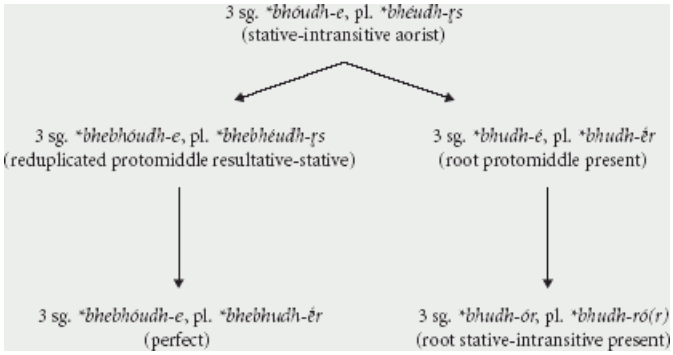
[433] A different analogy is suggested by Insler 1968: 329 f. *jăni* (1x), with lengthened grade, is of course secondary.

that were 'stranded' by the emergence of the true middle and reinterpreted as actives ('neoactives'). In some cases we can see, or at least plausibly guess at, the likely semantic development: **mólh$_2$-e* may originally have been an intransitive verb of process ('grind away (at)'); **ḱónk-e* 'hangs (tr.)' was probably once specifically intransitive and acquired its transitive sense by polarization with a new middle in 3 sg. **-or*. In other cases the reason for the *h$_2$e*-conjugation inflection of a given present or class of presents is no longer recoverable. This is not a shortcoming of the *h$_2$e*-conjugation theory as such, but an inevitable side-effect of the normal processes of morphological change.

§128. The existence of *h$_2$e*-conjugation *aorists* is predicted by the logic of the *h$_2$e*-conjugation framework as a whole and confirmed by the existence of ***ḫi***-verbs like *dă-* 'take' in Hittite. Two specific groups of *h$_2$e*-conjugation aorists provide the essential link between Hittite and the rest of the IE family. The first is the 'stative-intransitive' type studied in Ch. 6. Stative-intransitive *h$_2$e-* conjugation aorists were embedded in 'stative-intransitive systems', derivational families that also included a perfect, a zero-grade 'stative-intransitive' present in 3 sg. **-or,* and a *-ie/o*-present. Formally, such aorists resembled *molō*-presents in their **o* : **e* (later **o* : *zero*) ablaut pattern, and, like *molō*-presents, surface as root ***ḫi***-verbs in Hittite (cf. *lăk-* 'bend'). But the distinctive ablaut pattern of stative-intransitive aorists also surfaces in Tocharian and Indo-Iranian. In Tocharian the cognate forms are the class V subjunctives of the type A 3 sg. *leta**ṣ*** 'will depart', vb. n. *litālune* (< **loit(a)- / *lit(a)-*), synchronically paired with stative-intransitive (class III / IV) presents of the type 3 sg. *litatär* (< **litótor,* for older **lit-ór*). In Indo-Iranian the reflex of the stative-intransitive aorist is the famously problematic 'passive' aorist (type Ved. 3 sg. ***á****bodhi,* pl. *abudhran* 'awoke'), the normal form taken by the root aorist in stative-intransitive systems. From a historical point of view, the passive aorist is a secondarily and incompletely medialized *h$_2$e*-conjugation active. The medialization process is complete in Greek and Armenian, where the counterparts of the typical passive aorist ***á****jani* 'was born' (< **ĝónh$_1$-e,* with analogical *-i* for **-a*) are the fully normalized middles ἐγένετο 'became' and *cnaw* 'was born', respectively (both < **ĝénh$_1$-to*).

The discovery of ablauting stative-intransitive aorists makes it possible to recognize a twofold derivational process in the parent language; see Fig. 8.1. The **o* : **e* ablaut hypothesized for the forerunner of the classical perfect is independently supported by the vocalism of Indo-Iranian 3 pl. pluperfects of the type GAv. 3 pl. *cikōitϑrϑš,* Ved. 3 pl. ***á****dīdhayu**ḫ,* etc.

FIGURE8.1



§129. The second major type of h_2e-conjugation aorist is the 'presigmatic' aorist discussed in Ch. 7. The evidence of Hittite, Tocharian, and Indo-Iranian makes it clear that the sigmatic aorist of traditional IE comparative grammar was originally an *s*-less h_2e-conjugation aorist, with a paradigm that was progressively infiltrated by sigmatic forms. In bipolar or 'bivalent' roots, i.e. roots that opposed a transitive active to an intransitive middle, the *s*-element was confined to the subjunctive and the 3 sg. active indicative, as shown in Fig. 8.2.

FIGURE8.2

indic. act.	sg. 1 **nóiH-h₁e* 'I led'	pl. 1 **néiH-me-*
	2 **nóiH-th₂e*	2 **néiH-(t)e*
	3 **néiH-s-t*	3 **néiH-r̥s*
indic. mid.	sg. 1 **néiH-h₂e* 'I turned (intr.)'	pl. 1 **néiH-medhh₂*
	2 **néiH-th₂e*	2 **néiH-dh(u)e*
	3 **nóiH-o*	3 **néiH-ro*
subj.	**néiH-s-e/o-* (*si*-impv. **néiH-sí*)	
opt.	**néiH-ih₁-*	

The peculiar features of this paradigm are substantially preserved in Hittite and Tocharian. Both languages restrict the *-*s*- in the active indicative to the 3 sg. (Hitt. *nēḫḫun, naitta, naiš* (< **nóiH-s-t,* with analogical *-*o*-), etc.; Toc. A 3 sg. *ñakäs* 'destroyed', 3 pl. *ñakär* (< **nék̑-r̥s,* with analogical *-*ē*-)[434]); both exclude *-*s*- entirely from the middle (Hitt. 3 sg. *neyat* (< **néiH-o*-, with analogical *-*e*-); Toc. A *nakät* 'perished' (< **nók̑-(t)o*)). Both languages also have a sigmatic subjunctive, which is directly attested, albeit in an altered function, in Tocharian (class VIII pres. 3 sg. A *nkäṣ,* B *nakṣäṃ* 'destroys' (< **nék̑-s-e/o*-)), and indirectly attested in Hittite through the imperative forms *nešḫut, naišten,* etc., presupposing a lost *si*-imperative **nēši.* Tocharian, though not of course Hittite, has an *s*-less optative (cf. A *nśitär* 'would perish').

In the other IE languages the paradigm of the presigmatic aorist was analogically sigmatized throughout, with the significant exception of the optative in Indo-Iranian. Here the place of the expected *s*-aorist optative is taken by the optative of a root aorist, as, for example, in YAv. *vainīt* 'might win' (< **u̯én-ih$_1$-*; indic. **u̯ēn-s-*) and Ved. *jeṣam,jéṣma* 'I / we would conquer' (< **g$^{\text{u}}$é̯i-ih$_1$-(s-)*; indic. **g$^{\text{u}}$ēi̯-s-*). Unlike normal root aorist optatives, these forms have consistent zero grade of the optative suffix, reflecting the fact that the underlying *h$_2$e*-conjugation root aorists were acrostatic (cf. **nóiH- / *néiH-*, **u̯ón- / *u̯én-*, **g$^{\text{u}}$ói- / *g$^{\text{u}}$éi-*, etc.). It is significant that even in Greek, which does have an *s*-aorist optative, the formal manifestation of this category shows considerable variation from dialect to dialect.

The mixed paradigm of the presigmatic aorist was already a synchronic reality in late PIE, and we can only speculate as to how it may have come about. According to what seems the likeliest scenario, the *h$_2$e*-conjugation aorist **nóiH- / *néiH-* was originally intransitive; the distinction between a transitivized neoactive, with 3 sg. **nóiH-e* 'led', and a morphologically renewed intransitive middle, with 3 sg. **nóiH-o* 'turned (intr.)', was a secondary development within PIE. The inconvenient near-homophony of the latter two forms was eliminated by the replacement of **nóiH-e* by the intrusive sigmatic 3 sg. **nēiH-s-t.* Why it was precisely the form **nēiH-s-t*—to all appearances the 3 sg. imperfect of a Narten *s*-present—that was chosen for this purpose is not clear. The source of the suppletion may have been the root **prek̑-* 'ask', which had a preterite (< desiderative imperfect) **prēk̑-s-m̥, *-s-s, *-s-t,* etc. alongside its *h$_2$e*-conjugation aorist **prók̑-h$_2$e, *-th$_2$e, *-e,* etc. Whatever the locus of the *s*-forms,

[434] That Greek once had *si* -imperatives, however, is shown by the middle imperative in -σαι, which must have been created via a proportion of the type 2 sg. *s* -aor. subj. act. *γραψε[σ] : 2 sg. *s* -aor. impv. act. γράψι :: 2 sg. *s* -aor. subj. mid. *γράψε[σ]αι : 2 sg. *s* -aor. impv. mid. *X* (= γράψαι). I owe part of this explanation to Alan Nussbaum.

however, the establishment of pairs of the type **nḗiH-s-t* 'led' : **nóiH-o* 'turned (intr.)' was the event that ultimately led to the creation of the classical *s*-aorist. A further inner-PIE step was the introduction of *-*s*- into the presigmatic aorist subjunctive, with **néiH-s-e/o-* (modelled on **prék̂-s-e/o-*?) taking the place of the *h₂e*-conjugation root aorist subjunctive **néiH-e/o-*, probably at first in transitive uses only. There was no spread of *-*s*- in the indicative—at least not in bivalent roots—in the common period.[435]

The history of the (pre)sigmatic aorist has important consequences for the IE *Stammbaum*. The creation of a fully sigmatic active indicative—the canonical **nḗiH-s-m̥, *nḗiH-s-s, *nḗiH-s-t,* etc.—was a common innovation of the non-Anatolian, non-Tocharian branches of the family, which thus emerge as a proper subgroup ('Inner IE') of Indo-European as a whole. Another, less obvious, innovation of the Inner IE languages was the extension of the bivalent middle paradigm (1 sg. **néiH-h₂e,* 2 sg. **néiH-th₂e,* 3 sg. **nóiH-o,* 3 pl. **néiH-ro*) to the stative-intransitive aorist (originally 1 sg. **bhóudh-h₂e,* 2 sg. **bhóudh-th₂e,* 3 sg. **bhóudh-e,* 3 pl. **bhéudh-r̥s / *bhudh-ḗr*). The non-sigmatic middle of bivalent roots, although subject to various apophonic levellings, retained its identity in Hittite (*neyat*) and Tocharian (*nakät*) and remained distinct from the reflexes of the stative-intransitive aorist, which were grammatically active (cf. Hitt. *lāki,* Toch. A *letaṣ*). In the Inner IE languages, on the other hand, the two paradigms were combined. All the *h₂e*-conjugation endings proper to the stative-intransitive type were replaced by their middle equivalents (e.g. 3 sg. **bhóudh-e* ⇒ **bhóudh-o,* 3 pl. **bhéudh-r̥s / *bhudh-ḗr* ⇒ **bhudh-ró*), and *o*-grade, originally proper to the entire singular of the stative-intransitive type, was restricted to the 3 sg. (1 sg. 'strong' **bhóudh-h₂e* ⇒ 'weak' **bhudh-h₂é,* 2 sg. 'strong' **bhóudh-th₂e* ⇒ 'weak' **bhudh-th₂ê*). The result was the Inner IE 'passive-intransitive' aorist, the immediate source of the Indo-Iranian passive aorist and—with further levelling—of the Greek middle root aorists of the type λἐκτο and ἐγένετο.

§130. The *h₂e*-conjugation theory provides answers to many traditional questions about the PIE verb, particularly those bearing on the relationship of Anatolian to the rest of the family. It also raises many new problems. Some of these are purely theory-internal and involve matters of detail, such as the formal implementation of the present : imperfect distinction in *h₂e*-conjugation presents (a working solution was offered in §§54–5), or the vocalism of the

[435] Although Ved. *ahauṣīt* is often questioned on account of its late attestation (e.g. by Narten 1964: 288), the occurrence of *hoṣi* in the Rigveda and the existence of clear reflexes of the *s* -aorist in Tocharian and Greek leave little doubt that the form is historically genuine. The editors of *LIV* dismiss all the *s* -aorist forms of **ĝheu* - as 'Neubildungen' (159), evidently out of the mistaken belief that the only active aorist that could have stood beside a middle root aorist like *áhāvi* or Gk. χύτο would have been a *mi* -conjugation root aorist **ĝhéu-m, *ĝhéu-s, *ĝhéu-t.*

middle in cases where both a *h₂e*-conjugation active and a middle were formed from the same present stem (cf. Ch. 6 n. 6). Another set of questions concerns the prehistory of the 'new' system. We are not now in a position, and may never be, to give a detailed description of the functions of the pre-PIE protomiddle or to specify the conditions under which some protomiddles were renewed as middles while others were reinterpreted as *h₂e*-conjugation neoactives. More important still, we have no way of knowing how our 'deep' reconstructions patterned as part of a coherent pre-PIE system. If pre-PIE **mólh₂-e qua* protomiddle meant 'grinds away (at)', and pre-PIE **nóiH-e qua* protomiddle meant 'turned (intr.)' how did pre-PIE speakers say the equivalent of 'grinds' (present active) and 'led' (aorist active), respectively? Forms like **mḷ-né-h₂-ti* (nasal present) and **néiH-t* (root aorist) come immediately to mind, but at the remote linguistic stage before the *h₂e*-conjugation and the middle parted company we have no way of excluding a hundred other possibilities. Such uncertainties are inevitable when we press the comparative method to its limits. As Kurylowicz once said, we cannot reconstruct *ad infinitum*.

Pre-PIE system-building is not without value, but the immediate task for the future must be to test and refine the *h₂e*-conjugation framework on the basis of new data. The status of PIE *u*-presents, as we have seen, needs to be clarified. Other potentially interesting forms include the nasal presents of Germanic and Balto-Slavic (cf. Go. *waknip* 'wakes up', Lith. *buñda* 'id.', OCS *-bъ(d)netъ* 'id.'), the thematic inflection and inchoative meaning of which suggest a *h₂e*-conjugation origin. In Tocharian, always a goldmine of challenging facts and forms, the class V subjunctives studied thus far go back to stative-intransitive *h₂e*-conjugation aorists, but there are other class V subjunctives that do not; the verb *tärk-* 'release', for example, has an ablauting class V subjunctive in both Tocharian languages (cf. 1 sg. A *tarkam,* B *tārkau*; 2 pl. A *tärkāc,* B *tarkacer*), but it also makes a nasal present (3 sg. A *tärnāṣ,* B *tarkanaṃ*) and has none of the trappings of a stative-intransitive root. Do subjunctives of this kind also go back to *h₂e*-conjugation aorists, and if so, can any of them be paired with *ḫi*-verbs in Hittite or distinctive reflexes elsewhere in the family? We do not yet know the answers.

The *h₂e*-conjugation theory also promises to shed light on another traditionally problematic IE verbal formation—the thematic aorist. In §65 we briefly met a derivational process that related *dai*-presents to oxytone thematic presents in *-i̯-é/ó-* (Ved. *syáti, dyáti,* etc.); we saw that such presents, and *tudáti*-presents generally, may have been abstracted from 2 sg. imperatives of the type **sh₂h₁i̯-i-é, *dh₁i̯-i-é,* etc., with an otherwise poorly documented *h₂e*-conjugation imperative ending **-é*. Under this hypothesis, Ved. *tudáti* itself

would have been created on the basis of a 2 sg. imperative **(s)tud-é* 'strike!', corresponding to the *molō*-present **stoud-* / **steud-* (: Go. *stautan* 'push'). But the stems of *tudáti*-presents and thematic aorists are formally indistinguishable, and a theory that accounts for the one ought to account for the other. It is interesting to note, therefore, that the aorist stem **h₁ludh-é/ó-* 'go out' (cf. Gk. ἤυθε 'came', OIr. *luid* 'went', Toch. A *läc* 'went out')—easily the best-established thematic aorist in the PIE lexicon[436]—seems to have replaced an earlier stative-intransitive aorist **h₁lóudh-* / **h₁léudh-*. This, at any rate, is the clear implication of the archaic Greek perfect εἰλήλουθε 'has come' < **h₁leh₁lóudh-e,* which presupposes a stative-intransitive *h₂e*-conjugation aorist in the same way that, for example, **bhebhóudh-e* 'is awake' and **ĝeĝónh₁-e* 'is born' presuppose aorists **bhóudh-* / **bhéudh-* 'awake' (> Ved. *ábodhi*) and **ĝónh₁-* / **ĝénh₁-* 'be born' (> Ved. *ájani*). The formal relationship of **h₁ludh-é/ó-* to **h₁lóudh* / **h₁léudh-* is the same as that of **(s)tud-é/ó-* to **stoud-* / **steud-*, and invites a parallel explanation on the basis of generalization from an imperative **h₁ludh-é* 'go (out)!' Other suggestive configurations of forms are associated with the roots **u̯eid-* (thematic aorist Ved. *ávidat,* Arm. *egit,* Gk. ἒ(*F*)ιδε; stative-intransitive aorist Ved. *avedi*)[437] and **srebh-* 'sip up' (thematic aorist Arm. *arb; h₂e*-conjugation aorist Hitt. *šarap-* / *šarip(p)-*). Here too is a complex of facts for further study.

§131. And so we close. What began as an attempt to reconcile the Anatolian *ḫi*-conjugation with the facts of the other IE languages has led to new reconstructions for a variety of PIE presents, aorists, and even perfects. More importantly, it has given us a picture of the PIE verb that is more than the sum of its parts. The insight that the Hittite *ḫi*-conjugation was a PIE category leads inevitably to a series of further results, including the discovery of a hitherto unsuspected layer of archaic derivational processes. It is this aspect of the *h₂e*-conjugation theory—the fact that it both explains the gross facts of Hittite and reveals underlying patterns that would never otherwise have been detectable—that gives it its special appeal.

[436] See for the phonology Kiparsky 1967: 627 f.

[437] Cf. n. 49. To put it simply, we are not yet in a position to trace the fortunes of non-stative- intransitive and non-presigmatic *h₂e* -conjugation aorists in the non-Anatolian languages because we are not yet sure what we should be looking for.

Appendix 1: The Prehistory of the Thematic Conjugation[438]

As seen already in Ch. 1, the existence of a connection between the thematic conjugation and the *ḫi*-conjugation has been suspected since the very beginning of Hittite studies. In §85 we discussed how this connection might be understood within the framework of the h_2e-conjugation theory. The root **bher-* formed a Narten present (3 sg. act. **bhér-ti*) in the parent language; beside this there presumably existed a protomiddle (> h_2e- conjugation) **bhér-h_2e,* **bhér-th$_2$e,* **bhér-e,* etc., from which a thematized **bhér-e-h_2(e)* (> **bhér-o-h_2*), **bhér-e-si,* **bhér-e-ti,* could have arisen in the manner envisaged by Watkins (1969). While only a hypothesis, Watkins's scenario is rendered plausible by the athematic structure of the 3 sg. middle **bhéror* (i.e. **bhér-or*) and by the unexplained absence of the expected h_2e-conjugation type **bhér-h_2e* in the comparative data. A small number of other thematic presents lend themselves to the same interpretation. Thus, for example, the root **pleu-* 'float, swim' made an inherited present **pléu̯-e/o-* which appears in Gk. πλέω 'sail', Ved. *plávate* 'floats', and OCS *plovǫ* 'flow, sail'; beside this there is evidence for a Narten present in Toch. B subj. *plyewäṃ* 'will float' (<**plēu̯-*; cf. Hackstein 1995: 95 f.) and in lengthened-grade derived forms like OCS *plaviti* 'float', OE *flōwan* 'flow' and Gk. πλώω 'swim'.[439] Alongside the thematic present **nés-e/o-* 'come back' (cf. Ved. *násate* 'unites with', Gk. νέομαι 'return', Go. *ga-nisan* 'be saved'), lengthened-grade forms are found in Germanic (OIcel. caus. *nóra* 'revive') and Tocharian (A ptcp. *nāṃtsu* 'been' (<**nānāsu* < **-nōs-*); pres. A *nas-*, B *nes-* 'be' < **nēs-* with secondary depalatalization?), suggesting the former existence of a present **nḗs-mi.* The remarkable three-way word equation Lat. perf. */lēgī* 'I read, gathered' (pres. *legō*; cf. Gk. λέγω 'say') = Toch. A 3 sg. impf. *lyāk* 'saw' (< **/lēĝ-a-*; cf. Adams 1988: 87 f.) = Alb. aor. *mb-lodha* 'I gathered' (< **/lēĝ-*; pres. *mb-leth* < **leĝ-*) points to a PIE 'preterite' **/lēĝ-* beside the thematic present **léĝ-e/o-*; etymologically speaking, this **/lēĝ-* can hardly represent anything but the imperfect of a Narten present **/lḗĝ-mi* (cf. §112). And last but not least, the familiar **h_2éĝ-e/o-* 'drive' (cf. Ved. *ájati,* Gk. ἄγω, Arm. *acem,* OIr. *agid,* OIcel. *aka* 'id.'), corresponds in Latin to a perfect *ēgī* (< **$h_{2ē}$ĝ-*, with non-coloration by Eichner's Law), apparently representing a lengthened-grade formation of the same type as */lēgī*.[440]

[438] One possibility that suggests itself, for example, is that the apparent h_2e-conjugation aorist **$h_1$or- / *$h_1$er-* and the full-grade 'normal' middle **$h_1$ér-to* were etymologically one and the same, the latter having developed out of the former in the same way that **mén-to* and **mér-to* developed from pre-PIE **món-e* and **mór-e.* If so, the older (h_2e-conjugation) and the newer ('normal' middle) paradigm pre-sumably existed side by side in the parent language, each being specialized in a different function. In Hittite the difference became one of *Aktionsart* : *ăr-* (< **$h_1$or- / *$h_1$er-*) means 'arrive', i.e. '*finish* moving', while *artari* 'stands' (< **$h_1$ér-to*) may have evolved from an earlier sense 'stand up', i.e. '*start* moving (upward)'. In the other languages, including Tocharian, the contrast was differently lexicalized: the h_2e-conjugation paradigm **$h_1$or- / *$h_1$er-* acquired the sense 'start moving upward, arise', while the normal middle **$h_1$ér-* came to mean 'start moving (laterally)' (> Ved. *árta, ărāṇá-*). Eventually the h_2e-conjugation paradigm took on the trappings of a presigmatic aorist, splitting into transitive and intransitive variants:Given this complex of forms, it is easy to how the danger of homophony with the lexically distinct **$h_1$ér-to* 'started moving' would have favoured the maintenance and spread of *o*-grade—in effect, the creation of a root '**or-*'. Just such a pseudo-root is what we see in middle forms like Gk. ὤρτο, ὄρμε-*vos* and Lat. *orior,* and in actives like Gk. ὤρσε and the Tocharian class I subjunctive, *s*-preterite, and *s*-present of *ar-/er-* 'produce, cause to arise'.

[439] With the substitution of **-n̥ti* for historically expected **-nts,* as discussed in §54.

[440] The historical priority of the perfect endings over those of the middle is clearest in the 3 pl., where the middle endings **-ēro* and **-ro* presuppose the phonological change of **-ers* to **-ēr* and the analogical change of **-nts* to **-nt,* as described in §38.

Not all PIE simple thematic presents, however, can be so explained. A significant number of thematic presents were correlated with presigmatic aorists in the parent language. Examples seen in Ch. 7 included **néiH-e/o-* 'lead' (cf. Ved. *náyati* : Ved. *anaiḥ,* Hitt. *naiš*), **dhégʷh-e/o-* 'burn' (cf. Ved. *dáhati,* Lith. *degù* : Ved. *ádhāk,* Toch. B pret. *tsek-s-*), **u̯égh-e/o-* 'convey' (cf. Ved. *váhati,* Lat. *uehō,* Gk. (Pamph.) *FεXετω,* etc. : Ved. *ávāṭ,* Lat. *uēxī,* Gk. (Cyp.) *εFεξε*), **pékʷ-e/o-* 'cook' (cf. Ved. *pácati,* Lat. *coquu,* etc. : Lat. *coxī,* Gk. ἔπεψα), **ném-e/o-* 'bend' (cf. Ved. *námati* : Ved. 3 pl. subj. *naṃsante,* Toch. B 3 pl. (*s-*)pret. *nemar*), **gʷés-e/o-* 'extinguish' (cf. Ved. *jásamāna-* : Gk. ἔσβεσα,[441] Toch. B 3 pl. pret. mid. *kessante*), **u̯édh-e/o-* 'lead' (cf. Lith. *vedù,* OCS *vezǫ,* OIr. *fedid* : OCS *vĕsъ,* OIr. subj. *fess-*). Unlike the roots of the **bher-* group, which usually show no old aorist formations at all,[442] the roots that underlie such thematic present : *s*-aorist pairs show a characteristically 'aoristic' profile. All, of course, originally had root aorists—specifically, root aorists of the h_2e-conjugation type **noiH- / *neiH-*, **dhogʷh-/ *dhegʷh-*, etc., which were progressively sigmatized in the manner described in Ch. 7. None of the roots of the **neiH-*, **dhegʷh-*, **u̯eĝh-*type show any sign of ever having had a root present, Narten or otherwise, and a certain number seem to have had characterized presents in **-i̯e/o-* beside their thematic presents in simple **-e/o-* (cf. e.g. Ved. *pácyate,* Gk. *πέσσω* beside **pékʷ-e/o-*, Ved. 2 pl. *jasyata* beside **gʷés-e/o-*).[443] The proposed 'Narten' interpretation of **bhéreti* and **h₂égeti,* in short, cannot be generalized to cases like **néiHeti, *dhégʷheti,* and **u̯égheti.*

Three other possibilities for the **néiHeti-*, **dhégʷheti*-type therefore have to be considered:

(1) the thematic stems **néiH-e/o-*, **dhégʷh-e/o-*, etc. were created under the influence of the **bhéreti*-type and are entirely secondary;
(2) thematic **néiH-e/o-*, **dhégʷh-e/o-*, etc. were formed from the h_2e-conjugation aorists **noiH- / *neiH-*, **dhogʷh- / *dhegʷh-*, etc. by some otherwise unknown inner-IE derivational process; or
(3) thematic **néiH-e/o-*, **dhégʷh-e/o-* were originally the *subjunctives* of the aorists **noiH- / *neiH-*, **dhogʷh- / *dhegʷh-*.

None of these can be excluded in principle. But (1) is not attractive; other things being equal, it is unlikely that a co-occurrence pattern as widespread and seemingly archaic

[441] In Tocharian, it will be recalled (cf. §§117 ff.), the active and middle paradigms of the presigmatic aorist each split into a preterite and a subjunctive. The preterite generalized the vocalism of the 3 sg.—*-ē- in the active and *-o - in the middle. The subjunctive generalized the vocalism of the other forms—*o : *e ablaut in the active and *-e - in the middle.

[442] The qualification regarding bivalent roots is necessary because we have adopted the working assumption, suggested by the situation in Tocharian, that 'true' (i.e. self-benefactive, reciprocal, etc.) middles already had a fully sigmatic paradigm, with forms of the type 3 sg. **prék-s-u̯to,* pl. **prék-s-*to* in the parent language. Cf. §104.

[443] Two thematic aorists are attested in three branches of the family: **h₁ludh-é/ó -* is found in Greek, Old Irish, and Tocharian; **u̯id-é/ó -* 'see, recognize' is found in Greek, Indo-Iranian, and Armenian. Neither reconstruction is seriously in doubt. But since Greek, Indo-Iranian, and Armenian are all languages in which the thematic aorist is productive, there is at least a theoretical chance that the forms which seem to point to a PIE **u̯id-é/ó -* in these branches are parallel innovations. This is out of the question in the case of **h₁ludh-é/ó -*, since thematic aorists are otherwise unknown in Old Irish and Tocharian.

ras the pattern *thematic present* : *(pre)sigmatic aorist* would simply have been accidental. Possibility (2) is a confession of ignorance; it merely asserts that there was *some* derivational link between thematic presents and *h_2e*-conjugation aorists, just as there was a derivational link between, for example, the present **mn̥-i̯é-tor* 'thinks' and the aorist **mén-to,* or between the present **li-né-kʷ-ti* 'leaves' and the aorist **léikʷ-t.* The third scenario, which specifies a *particular* mechanism for the derivation of **néiH-e/o-* from **noiH-* / **neiH-*, is more explanatory and hence more interesting. Like any strong hypothesis, however, it can only be taken seriously if it is supported by positive evidence. In this case, such evidence, albeit indirect, is at hand.

Two facts lend credibility to the theory of a subjunctive origin for **néiH-e/o-*, **dhéǵʷh-e/o-*, etc. The first is that *h_2e*-conjugation aorist subjunctives, at least in bivalent roots, are known to have been replaced in their original aorist subjunctive function within the parent language. The late PIE active subjunctives corresponding to the aorists **noiH-* / **neiH-* and **dhogʷh-* / **dhegʷh-* were not the expected **néiH-e/o-* and **dhéǵʷh-e/o-*, but **néiH-s-e/o-* and **dhéǵʷh-s-e/o-*, with the same intrusive *-*s*- as in the 3 sg. indic. **nḗiH-s-t,* **dhḗǵʷh-s-t.* It is only natural, therefore, to wonder about the fate of the older *s*-less forms. Conceivably they were simply lost—hastened into oblivion, perhaps, by their inconvenient homophony with the historically independent thematic presents **néiH-e/o-* and **dhéǵʷh-e/o-*. A more intriguing possibility, however, is that they were displaced from the aorist to the present system, passing through some 'prospective' or quasi-modal function on the way to becoming full-fledged present indicatives (cf. Ch. 7 n. 13). Both scenarios are perfectly thinkable, but the second provides a more efficient account of the facts as we have them.

The other highly suggestive fact comes, as so often, from Tocharian. Here the ordinary PIE thematic type is represented by the presents of class II, which Krause and Thomas exemplify with the root *āk-* 'lead' (= Ved. *ájati,* Gk. *ἄγω,* Lat. *agō,* etc.). The forms of this verb are indeed precisely what would have been expected of a simple thematic present in Tocharian, with palatalization before etymological *-*e*- in the 2 sg., 3 sg., and 2 pl. (cf. B 3 sg. *āsäṃ,* 2 pl. *āścer*), and no palatalization before etymological *-*o*- in the 1 sg., 1 pl., and 3 pl. (B 1 sg. *ākau,* 1 pl. *akem(o),* 3 pl. *ākeṃ*). Yet *āk-* gives a highly misleading impression of class II as a whole. Of the dozens of presents of this type in Tocharian, the overwhelming majority are either petrified *s*-presents (e.g. A *klyos-*, B *klyaus-* 'hear'; cf. §105), petrified *sk*-presents (e.g. B *nāsk-* 'bathe'), thematized Narten presents (e.g. B *tek-* 'touch' (pres. 3 sg. *ceśäṃ*)), or forms based on roots with no known etymology (e.g. A *krop-*, B *kraup-* 'gather'). An inherited present in *-*u̯e/o-*, perhaps thematized from an earlier *h_2e*-conjugation present **gʷieh₃-u-* / **gʷih₃-u-* (§82), appears in 3 sg. A *śoṣ,* B *śaiṃ* 'lives' < **gʷíh₃-u̯e-ti* (= Ved. *jī́vati,* Lat. *uīuō,* etc.). *Other than* āk-*, however, the only class II root that corresponds to a PIE simple thematic present is B* pär- *'carry' (= Ved.* bhárati*, etc.).* The basic Tocharian thematic present class contains only two genuinely old 'root' thematic presents, and both belong to the first, or Narten-related, type.

This descriptive fact would not be especially interesting if roots of the '*s*-aorist' type—**neiH-*, **dhegʷh-*, **u̯eǵh-*, etc. —were simply not attested in Tocharian. But such

roots, as we know, are more than adequately represented in the Tocharian lexicon, where their presents are normally either of class VIII, representing old *s*-aorist subjunctives (B *pakṣäṃ* 'cooks', *nakṣäṃ* 'destroys', *tsakṣäṃ* 'burns (tr.)', *keṣäṃ* 'extinguishes'), or (in Tocharian A) of class X, where the suffix *-näs-* probably represents the replacement of older **-i̯e/o-* (cf. A *päknäṣtär* 'grows ripe' beside Ved. *pā́cyate, näknäṣtär* 'perishes' beside Ved. *nā́śyati*; further *tsäknäṣtär* 'burns (intr.)', *nämnäṣtär* 'bends (intr.)').[444] Not even a single root of the **neiH*-type forms a simple thematic present of class II. Tocharian, therefore, presents the spectacle of an IE language in which the two types of thematic stems were treated differently: the **bhéreti*-type was preserved intact, but the **néiHeti*-type seems to have disappeared. It is tempting to attribute the absence of the **néiHeti*-type to the fact that such forms, unlike the presents of the **bhéreti*-type, were still subjunctives, and hence not yet present indicatives, when Tocharian separated from the rest of the IE family. If so, the final stages in the evolution of the h_2e-conjugation root aorist subjunctives **néiH-e/o-*, **dhégʷh-e/o-*, etc. to thematic presents would have been a development of the 'inner' IE languages—a development, of course, in which Tocharian did not share.

This conjecture entails a prediction: we should likewise not expect to find presents of the **néiHeti*-type in the other non- 'inner' branch of the family, Anatolian. This prediction is confirmed. The only verb that can be shown to go back to a root of the **neiH*-type in Anatolian is *nai-* itself, and *nai-* owes its paradigm, as we have seen (§115), to the presigmatic aorist **noiH-* / **neiH-* / **nēiH-s-* rather than to the thematic stem **néiH-e/o-*. One of the enduring mysteries connected with the thematic conjugation is the extreme rarity, verging on total absence, of full-grade root thematic presents in Anatolian.[445] We can now see that this apparent gap is in large part explainable. There are no thematic presents of the **néiHeti*-type in Anatolian because there were no **néiHeti*-type presents—at least not present indicatives—in the archaic form of PIE from which Anatolian and Tocharian separated. The possibility remains open that Anatolian may have had thematic presents of the **bhéreti*-type, which were not of subjunctive origin. It is of some interest, therefore, to find that the strongest candidate for an inherited thematic present in Anatolian is HLuv *tamari* (< **-adi* < **-ati*) 'builds', pret. *tamata* (: Gk.δέμω 'build', Gmc. **teman* 'be fitting'),[446] with a lengthened-grade present in Toch. A *śamatär* (< **dēmh₂-o-*) 'grows' that points to the presence of Narten ablaut. If this example is taken at face value, the agreement of Anatolian and Tocharian in having thematic presents of the **bhéreti-*, but not of the **néiHeti-*type, would be yet another in the remarkable series of isoglosses setting these two branches apart from the rest of the family.

[444] The difference in value between PIE 3 sg. **u̯óid-e* 'came to light, was found' (= *avedi*) and the corresponding 2 sg. imperative **u̯id-é* 'see!' must be secondary in any case; see App. 2.

[445] Shortened and updated from Jasanoff 1998.

[446] The rare formation represented by *flōwan* and πλώω would seem to be the Narten counterpart of the *molō* -type. *LIV²* 439 implausibly sets up a present **pleh₃-i̯e/o* -, with an ad hoc root **pleh₃* -.

Appendix 2: The Perfect *u̯*óid-e*

Throughout this study we have emphasized the reduplicated character of the PIE perfect. In Ch. 1, the fact that the overwhelming majority of j*i*-verbs are unreduplicated was used as an argument against the 'perfect theory' of the ḫ*i*-conjugation; in later chapters the possibility of taking the perfect as the source of the Tocharian subjunctives of classes I and V and the Tocharian preterites of the type A *prakwā,* B *prekwa* was rejected on the same grounds (cf. §§93, 102 f., 117); and in §97 reduplication was argued to have been the morphological feature that distinguished the perfect from its unreduplicated derivational base. On the whole, the comparative evidence strongly confirms the view that the perfect was a reduplicated category in the parent language. Yet it is also clear that one lexical item, the semantically deviant perfect of the root *u̯*eid-* 'see, catch sight of, recognize', was an exception. Reflexes of unreduplicated *u̯*óid-* / *u̯*id-*ɛ 'know' are widely attested, not only in languages where reduplication might in principle have been lost (cf. Go. 1 sg. *wait,* OCS *vědě*, OPr. *waidimai* (1 pl.), Arm. *gitem*), but also in languages where it was otherwise regularly maintained (cf. Ved. 1 sg. *véda,* GAv. *vaēdā*, Gk.*(F)*οἶδα,OIr. *·fetar*). Opinions differ as to whether the lack of reduplication in *u̯*óid-* / *u̯*id-*' was a secondary, inner-IE development or an original feature.[447] The suggestive and more commonly accepted latter view, with its implication that reduplication in the perfect was in the last analysis facultative or even 'stylistic', partly explains the willingness of otherwise cautious scholars to countenance 'perfects' like **sókH-e* 'knows' and **prók-e* 'has asked' as preforms in Hittite and Tocharian. Seductive as it undeniably is, however, to compare Hitt. pa*kk*i* 'knows' with its PIE synonym *u̯*óid-e,* the comparison is meaningless unless we can estabish the validity of its unspoken premise—that *u̯*óid-e* was an archaism within PIE itself.

Within the framework presented here, *u̯*óid-e* is even more anomalous than under more conventional views of the PIE verbal system. As schematically illustrated in §97, the perfect originated as a reduplicated derivative of the stative-intransitive aorist:

*ĝ*ónh*$_1$*-e* 'was born' * *ĝe-ĝ*ónh*$_1$*-e* 'is / has been born'

*u̯*ag̑*-e* 'broke (intr.)' * *u̯e-u̯*ag̑*-e* 'is broken'

In keeping with this pattern, we might have expected that the perfect of the root *u̯*eid-* would be built to the stative-intransitive aorist attested in Ved. *avedi* (pass. aor.) 'came to light, was found':

*u̯*óid-e* 'came to light' * *u̯e-u̯*óid-e* 'is visible, is found as'

[447] I remain utterly unconvinced by Poetto's identification (1998: 111 n. 21) of HLuv INFRA *-a-ka* - 'subdue' with Lat. *subigere,* which if correct would require us to revise the reconstruction *h_2eĝ* - to *h_1aĝ* -. Despite Melchert (255 f.), there are no irrefutable examples of the development of *ĝ(h)* to *k* in Luvian (HLuv *takami* 'in the country' presents the special problems of a thorn cluster), and no good reason, given the universal development of *ḱ* to the affricate *z,* to believe that *ĝ(h)* would have remained a stop before back vowels.

But no such intransitive *u̯eu̯*óid-e* is actually found. Instead, a new and puzzling fact emerges: *u̯*óid-e* 'knows' was homophonous with *u̯*óid-e* 'came to light', the corresponding stative-intransitive aorist. The unexpected identity of the two forms immediately casts doubt on the putative status of *u̯*óid-e* 'knows' as an age-old inheritance from the remote prehistory of the parent language. *Qua* perfect, *u̯*óid-e* cannot be original as it stands: either it was once reduplicated, as some scholars have supposed, or it was created within PIE at a time when the formal overlap with the aorist *u̯*óid-e* was no longer a relevant issue. To decide between these two possibilities we will first have to determine what would have been the *normal* treatment, in later PIE and beyond, of the theoretically expected but unattested *u̯eu̯*óid-e* 'is visible / recognizable, is found (as)'.

Light is shed on the overall morphological behaviour of the root *u̯*eid-* by the semantically parallel roots *der- 'see, glimpse' and *ḱ*leu-* 'hear'. Like *u̯*eid-*, *der- and *ḱ*leu-* formed stative-intransitive aorists, which survive in Ved. *á*darśi* 'appeared' < *dór-e* and śŕ̥*vi* (GAv. *srāuuī*) 'was heard, became famed as' < *ḱ*lóu̯-e,* respectively. In principle, the aorists *dór-e* and *ḱ*lóu̯-e,* like *u̯*óid-e,* ought to have given rise to derived perfects:

*dór-e 'appeared'	⇒ *dedór-e 'is visible'
*ḱ*lóu̯-e 'became audible'	⇒*ḱ*e*ḱ*lóu̯-e 'is audible, is famed as'

The forms *dedór-e and *ḱ*e*ḱ*lóu̯-e* are in fact attested, but not with the expected intransitive meaning. The comparative evidence shows, rather, that the roots *der- and *ḱ*leu-* had transitive active and intransitive 'passive' subsystems in late PIE, and that the perfects *dedór-e and *ḱ*e*ḱ*lóu̯-e,* despite their derivational history as intransitives, were uniformly treated as actives. Compare the actual forms:

aorist	perfect	
act.	*dárśam* 'saw'	*dadársa,* YAv. *dadarQsa* 'has seen', Gk. dådoqje 'sees'[2]
mid.	*ádarsi* 'appeared'	*dádse* 'is visible'
act.	*ásrot* 'heard'[3]	*susrava,* OIr. *ro·cúalae* 'has heard', Gk. jåjktse 'hear!'
mid.	*srdvi* 'was famed as'	*susruve* 'is famed as'

For these two roots, then, the original function of the perfect was taken over by the newly created perfect middle, while the old perfect was reinterpreted as a transitive perfect active. From the fact that the transitivization of the perfects *dedór-e and *ḱ*e*ḱ*lóu̯-e* was a development common to Indo-Iranian and Greek, it can be concluded that the perfect middles *dedŕ̥k-ór 'is visible' and *ḱ*e*ḱ*lu̯-ór* 'is audible, is famed as' were already part of the verbal system of late PIE (cf. §30, with n. 38).

Apart from the irrelevant detail that the active root aorist *u̯éid-*8, *u̯éid-s,* etc. was replaced within the parent language by the thematic aorist *u̯id-ó-m, *-é-s,* etc.,[448] the

[448] With secondary *ẓg$^{\mu}$ - for *g$^{\mu}$ -. The starting point was probably the *A* -stative stem *g$^{\mu}$s-eh$_{\mu}$ -, which was realized phonetically as *k$^{\mu}$s-ē -, with devoiced *k$^{\mu}$ - for *g$^{\mu}$ -. *Systemzwang* demanded the restoration of the voiced initial, and this was brought about by metathesis: underlying /g$^{\mu}$ s-/ was remade to /sg$^{\mu}$ -/, permitting the cluster to surface as *ẓg$^{\mu}$ -. (Cf. μίσγω 'mix' for *μίσκω (< *mig-skō), likewise with morphologically motivated voicing in the 'wrong' position.) Once established in the stative *ẓg$^{\mu ē}$ - (σβῆναι), the cluster spread throughout the extended paradigm.

root *u̯*eid-* patterns in exactly the same way as *der̥k- and *ḱleu-*. We thus find

aorist	perfect	
act.	*ávidat* 'found', Gk. *ἴ(F)ιδε* 'saw'	*vivēda* (= YAv. *vīuuaēδa*) 'has found'
mid.	*avedi* 'was found (as)'	*vividé* 'is seen, is found (as)',

pointing, as it might seem, to a PIE system

aorist	perfect	
act.	*u̯*id-é-t* 'saw' found'	*u̯*eu̯óid-e* 'sees, has seen / recognized'
mid.	*u̯*óid-e* 'appeared, came to light'	*u̯*eu̯*id-ór 'is visible, is recognized'

Yet despite the overall parallelism of *u̯*eid-*, *der̥k- and *ḱleu-*, and despite the generally assumed PIE antiquity of *dedór̥k-e* and *ḱeḱlóu̯-e,*[449] Indo-Europeanists have traditionally been highly resistant to setting up a perfect *u̯*eu̯óid-e,* and still less a perfect middle *u̯*eu̯id-ór,* for PIE. There are three main reasons for this reluctance, none cogent:

(1) Because the 'real' perfect of *u̯*eid-* is supposed to have been *u̯*óid-e* 'knows'. This, however, is merely conventional wisdom, not established fact; the peculiarities of *u̯*óid-e* make any analysis, however 'standard', provisional.

(2) Because the resultative past meaning of *vivéda / vīuuaēδa* in Indo-Iranian is a typologically 'late' feature. *dadárśa / dādarəsa* and *śuśrāva,* however, have this meaning as well, as do almost all contrastively active perfects in Vedic and Younger Avestan.

(3) Because *u̯*eu̯óid-e / vivéda / vīuuaēδa lacks cognates and seems to be a purely Indo-Iranian innovation. But in fact, the assumption of a perfect *u̯*eu̯oid- / *u̯*eu̯id-* provides the only satisfactory basis for explaining Lat. *uīdī* 'I saw, have seen' < **wiwidai,* with *-*iwi-* giving *-ī- as in *uīcī* 'I (have) conquered' (= OIr. *do·fich* 'fought') < **wiwikai.*[6]

The *communis opinio* notwithstanding, therefore, it would seem legitimate to assume that the original PIE perfect of *u̯*eid-* was (3 sg.) *u̯*eu̯óid-e* 'is visible / recognizable, is found (as)', parallel to *dedór̥k-e* 'is visible' and *ḱeḱlóu̯-e* 'is audible, is famed as'. Just as the latter two forms split within PIE into a perfect active (*dedór̥k-e* 'sees', *ḱeḱlóu̯-e* 'hears') and a perfect middle (*ded̥r̥k-ór* 'is visible', *ḱeḱlu̯-ór* 'is audible, is famed as'), so *u̯*eu̯óid-e* gave late PIE *u̯*eu̯óid-e* 'sees, is in the condition of having found / recognized' (> Ved. *vivéda,* YAv. *vīuuaēδa,* Lat. *uīdī*) and *u̯*eu̯id-ór* 'is visible / recognizable, is found (as)' (> Ved. *vividé*). It follows that the familiar *u̯*óid-e* 'knows' is neither the

[449] **pleu* -, with an *s* -aorist in Tocharian (B *plyewsa* 'floated') and Greek (ἔπλευσα 'sailed') is an apparent exception, but the intransitive character of these forms argues against their being old.

relic of an earlier period in which perfects were unreduplicated, nor a phonologically evolved form of *u̯eu̯*óid-e.*

What, then, *was* *u̯*óid-e*? A hint is provided by the fact that alongside the well-attested 3 sg. *véda* 'knows', the Rigveda furnishes eleven examples of a middle *vidé* 'is known', mainly but not exclusively in the formulaic phrase *yathā́ vidé* 'as is known' (cf. Kümmel 102 ff.). From a descriptive point of view, *vidé* is the perfect middle corresponding to *véda,* and as such could probably have been created at any time between late PIE and the period of our texts. But there is another possibility, more attractive in view of the problem at hand. The root *u̯*eid-*, in its intransitive reading, was associated with a stative-intransitive system, of which we have already met the stative-intransitive aorist *u̯*oid- / *u̯*(e)id-* (> Ved. *avedi*) and the perfect *u̯eu̯*oid- / *u̯eu̯*id-´* (> Ved. *vivéda*). Another member of this derivational family was the root stative-intransitive present *u̯*id-ór* 'is / becomes visible / recognizable', standing in the same relation to the aorist *u̯*óid-e* 'came to light' as e.g. **bhudh-ór* 'is / becomes awake' (cf. OCS *-bъditъ*) to **bhóudh-e* 'awoke', *u̯*ā́ĝ-ór* 'is / becomes broken' (cf. Toch. B *wokotär*) to *u̯*ā́ĝ-e* 'broke (intr.)', and—especially interesting in view of the parallelism between *u̯*eid-* and *ḱ*leu- —*ḱ*lu̯*-ór* 'is / becomes famed as' (cf. Latv. *sluu, -êt* 'become known', cited by Kümmel 14, 154) to *ḱ*lóu̯*-e 'became audible, became famed as'. PIE *u̯*id-ór* 'is / becomes visible / recognizable' would have given a Vedic stative-intransitive present **vidé,* which would presumably have meant 'is seen, is recognized, is found (as)'. It is natural to see a connection between this expected present **vidé,* which is not attested in our texts, and the perfect middle *vidé* 'is known', which is.

The possibility that *vidé* 'is known' was a transformed root stative-intransitive present rather than an ordinary perfect middle is considered by Kümmel, who remarks (104), 'es wäre auch denkbar, daß in *vidé* "ist bekannt" ein alter Stativ der Voraussetzung "ist erkennbar" vorläge und dieser erst sekundär aus formalen Gründen zum patientiven Medium / Stativ von *véda* umgedeutet worden wäre.' Kümmel, in other words, contemplates a scenario in which the root stative-intransitive present *vidé* was 'captured' by the perfect *véda* and pressed into service as its middle. The semantic shift from 'is / becomes visible' to 'is known' would have followed from the morphological association of the two forms: since *véda* meant 'knows', *vidé,* by attraction, came to mean 'is known'.

Kümmel's hypothetical account is doubtless a step in the right direction. More can be explained, however, and the formal identity of the two *vidé*s can be better exploited, by assuming that the meaning 'is known' developed from 'is / becomes visible / recognizable' *within PIE itself, prior to the creation of* *u̯óid-e-'*knows'*. According to the view that we shall take here, the crucial event in the history of Ved. *vidé*—the crucial event, in fact, in the history of the whole complex of forms meaning 'know' and 'be known'—was a spontaneous semantic change in the PIE stative-intransitive present *u̯*id-ór*:

stage I	*u̯*id-ór* 'is / becomes visible / recognizable'
stage II	*u̯*id-ór* (A) 'is / becomes visible / recognizable'; (B) 'is known'

The extension of the meaning of *u̯*id-ór* from 'is / becomes visible / recognizable' to 'is known' hardly calls for comment; it is simply the passive-voice analogue of the commonly assumed change of a PIE perfect meaning 'sees, is in the condition of having found / recognized' to 'knows'. The latter widely assumed event, while making excellent 'sense' and often taken for granted, in fact never took place: the PIE perfect of *u̯*eid-* was *u̯*eu̯óid-e,* and *u̯*eu̯óid-e* gave Ved. *vivéda* and Lat. *uīdī*.

The establishment of *u̯*id-ór* in its new meaning would have cleared the way for a key further development. *u̯*id-ór* 'is known' contrasted minimally with another PIE form, the perfect middle *u̯*eu̯id-ór* 'is visible, is recognized'. To a learner of PIE at this stage, it would doubtless have appeared as if *u̯*id-ór* was simply an unreduplicated variant of *u̯*eu̯id-ór,* and that the absence of reduplication was responsible for the difference in meaning between the two forms ('is known' vs. 'is visible, is recognized'). *u̯*id-ór,* in short, would have looked like, and tended to pattern as, an unreduplicated or dereduplicated perfect middle:

reduplicated perfect	unreduplicated perfect	
active	*u̯*eu̯óid-e* 'sees, has seen / recognized'	—
middle	*u̯*eu̯id-ór* 'is visible, is recognized'	*u̯*id-ór* 'is known'

From here it would have been a natural step to fill in the missing active term. The proportion was

mid. *u̯*eu̯id-ór* 'is visible / recognized' : act. *u̯*eu̯óid-e* 'sees, has seen / recognized' : :

mid. *u̯*id-ór* 'is known' : *X,*

where *X* was solved as *u̯*óid-e* 'knows'.

*u̯*óid- / *u̯*id-*ɛ 'know', by far the best known and most frequently cited perfect in the PIE verbal system, thus emerges not as an archaism but as an inner-IE neologism—a back-formation from its own middle, which in origin was not a perfect at all but a root stative-intransitive present.[450] It goes without saying that this analysis clashes with many traditionally held views. It is widely held that the perfect middle was too 'late' to play any significant role in the evolution of the PIE verbal system; that Ved. *vivéda* and YAv. *viuuaēδa* were simply inner-Indo-Iranian regularizations of unreduplicated *véda* and *vaēδa*; and, above all, that *u̯*óid-e,* with its specialized meaning and lack of visible

[450] Cf. §118, with n. 48. Melchert (p.c.) also draws my attention to HLuv *waza* - convey', conceivably < *u̯*égh̯-ie/o* -.

reduplication, was a form of immense antiquity. The fact that these views have become traditional, however, does not make them true. The alleged chronological priority of *u̯*oid-* / *u̯*id-* over *u̯e̯u̯*oid-* / *u̯e̯u̯*id-* is not supported by any actual evidence, and is incompatible with what we now know about the relationship of the perfect to the stative-intransitive root aorist. The perfect *u̯e̯u̯*oid-* / *u̯e̯u̯*id-* is solidly grounded in the comparative record, being directly attested in Italic as well as in Indo-Iranian and structurally supported by the perfects **dedor*ḵ- / **ded̥r*ḵ- and *ḵe*ḵ*lou̯- / *ḵe*ḵ*lu-*. And the perfect middle, while indeed a more recent creation than the perfect active within the inferable prehistory of the IE family, was nonetheless a genuine PIE category, fully capable of mediating the entry of *u̯*óid-e* into the PIE verbal system by the back door.

References

The following abbreviations are used in the list of references below.

V. Facht.	*Flexion und Wortbildung. Akten der V. Fachtagung der Indogermanischen Gesellschaft,* ed. Helmut Rix (Wiesbaden: Reichert, 1975)
VI. Facht.	*Lautgeschichte und Etymologie. Akten der VI. Fachtagung der Indogermanischen Gesellschaft,* ed. M. Mayrhofer, M. Peters, O. E. Pfeiffer (Wiesbaden: Reichert, 1980)
VII. Facht.	*Grammatische Kategorien: Funktion und Geschichte. Akten der VII. Fachtagung der Indogermanischen Gesellschaft,* ed. B. Schlerath (Wiesbaden: Reichert, 1985)
VIII. Facht.	*Rekonstruktion und Relative Chronologie. Akten der VIII. Fachtagung der Indogermanischen Gesellschaft,* ed. R. Beekes *et al.* (IBS 65, 1992)
IX. Facht.	*Früh-, Mittel-, und Spätindogermanisch. Akten der IX. Fachtagung der Indogermanischen Gesellschaft,* ed. G. E. Dunkel *et al.* (Wiesbaden: Reichert, 1994)
X. Facht.	*Sprache und Kultur der Indogermanen. Akten der X. Fachtagung der Indogermanischen Gesellschaft,* ed. Wolfgang Meid (IBS 93, 1998)
AGI	*Archivio Glottologico Italiano* (Florence)
BSL	*Bulletin de la société de linguistique de Paris* (Paris)
Gedenkschr. Kronasser	*Investigationes philologicae et comparativae: Gedenkschrift für Heinz Kronasser,* ed. E. Neu (Wiesbaden: Harrassowitz, 1982)
Gedenkschr. Schindler	*Compositiones Indogermanicae in Memoriam Jochem Schindler,* ed. H. Eichner and H. C. Luschützky (Prague: Enigma Corporation, 1999)
HS	*Historische Sprachforschung* (Göttingen)
HuI	*Hethitisch und Indogermanisch,* ed. Erich Neu and Wolfgang Meid (IBS 25, 1979)
IBS	Innsbrucker Beiträge zur Sprachwissenschaft (Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck)
IF	*Indogermanische Forschungen* (Berlin)
KZ	*Zeitschrift für Vergleichende Sprachforschung* (Göttingen)
Laryngaltheorie	*Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems,* ed. Alfred Bammesberger (Heidelberg: Winter, 1987)
Mír Curad	*Mír Curad: Studies Presented to Calvert Watkins,* ed. Jay Jasanoff, H. Craig Melchert, and Lisi Oliver (IBS 92, 1998)

MSL	*Mémoires de la société de linguistique de Paris* (Paris)
MSS	*Münchener Studien zur Sprachwissenschaft* (Munich)
NTS	*Norsk Tidsskrift for Sprogvidenskap* (Oslo)
Pedersen Kolloq.	*In Honorem Holger Pedersen: Kolloquium der Indogermanischen Gesellschaft vom 26. bis 28. März 1993 in Kopenhagen,* ed. J. E. Rasmussen (Wiesbaden: Reichert, 1994)
Pratid.	*Pratidanam: Indian, Iranian and Indo-European Studies Presented to Franciscus Bernardus Jacobus Kuiper on his Sixtieth Birthday,* ed. J. Heesterman *et al.* (The Hague: Mouton, 1968)
Sound Law and Analogy	*Sound Law and Analogy: Papers in Honor of Robert S. P. Beekes on the Occasion of his 60th Birthday,* ed. A. Lubotsky (Leiden Studies in Indo-European, 9; Amsterdam–Atlanta: Rodopi, 1997)
StBoT	Studien zu den Bog‘azköy-Texten (Wiesbaden: Harrassowitz)
Studies Cowgill	*Studies in Memory of Warren Cowgill (1929–1985): Papers from the Fourth East Coast Indo-European Conference,* ed. C. Watkins (Untersuchungen zur indogermanischen Sprach- und ulturwissenschaft, 3; Berlin–New York: de Gruyter, 1987)
Studies Puhvel	*Studies in Honor of Jaan Puhvel, Part One: Ancient Languages and Philology,* ed. D. Disterheft *et al.* (Journal of Indo-European Studies Monograph 20; Washington, DC: Institute for the Study of Man, 1997)
TIES	*Tocharian and Indo-European Studies* (Reykjavik)
TPS	*Transactions of the Philological Society* (Oxford)

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Italic

Latin

Germanic

Gothic

OLD NORSE (Old Icelandic unmarked)

CONTINENTAL WEST GERMANIC (Old High German unmarked)

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TOCHARIAN A

TOCHARIAN B