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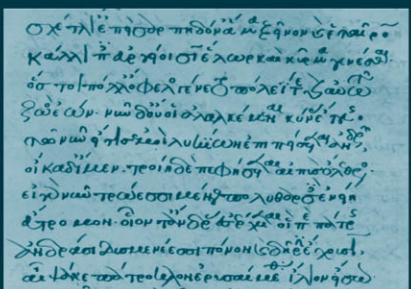
A DIACHRONIC STUDY IN WORD FORMATION



Torsten Meissner

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A Diachronic Study in Word Formation

TORSTEN MEISSNER

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Preface

It is common to say at the very beginning of a book like this one that it is the revised version of a thesis—indeed, this is what the entire series is there for. And so this one is too; however, to translate the words of one of the most eminent comparative philologists into English, the present volume shares with the thesis that was submitted in 1995 to the University of Oxford but the author and the subject matter.

A long time has passed since then and many new publications on the topic have seen the light of day in the meantime. Both factors have contributed to a substantial revision and expansion of my views. It would be fair to say that it has not been easy to write this book, and the long process has tested the patience of friends, colleagues, teachers, and indeed successive series editors to its very limits. For somebody like myself with a very imperfect grip on this language, the path was rocky, and I can only ask for the reader's forbearance whenever my way of expression just does not sound right. It has also been hard to write this book against the current political climate in which short-term expediency is considered more important than long-term results, to an extent where some kinds of projects could no longer be contemplated now.

This book could not have been written without the unfailing support from many people. I could never pay back what they have given to me. I owe very special thanks first of all to Anna Morpurgo Davies, my D.Phil. supervisor who instigated this research and who was and is an ever-guiding light, a constant source of scholarly inspiration, and the most dispassionate and constructive critic that I have had the great fortune to come across. I am also much indebted to John Penney for many critical discussions and suggestions, in the *Rose and Crown* and elsewhere, that have shaped my views. Valuable comments and encouragement have also come from Alain Blanc, Robert Coleman, Ellis Evans, Geoff Horrocks, Harald Jankuhn, John Killen, Michael Meier-Brügger, Karl Horst Schmidt, Oliver Simkin, Olga Tribulato, Elizabeth Tucker, and Jürgen Uhlich, and I am

grateful to all of them. I also owe particular thanks to Karin Stüber who made a copy of her *Habilitationsschrift* available to me long before the eventual date of its publication. In the latter stages of writing this book, I have also benefited considerably from a sabbatical at the linguistic institute of the Ludwig-Maximilians-Universität in Munich. It is only because I enjoyed unlimited access to its magnificent resources that this book was at long last finished, and I am most grateful to Peter Schrijver for his hospitality and many incisive comments.

But above all I should like to thank James Clackson who with his extremely fine mind and unerring judgement has influenced many of my views, who has never failed to answer any of my many questions and who even in difficult times was most generous with his time. He has read substantial parts of this book and I am most grateful for his criticism, corrections, and many suggestions.

Finally and most importantly, there is somebody who has said that she would not want to be thanked because she feels that she has contributed nothing to this book. Well then, let me state that it is not only my grasp of Old Irish glosses that has come a long way ever since I met her. Both academically and personally I owe more to her than I could or would wish to express in words, and to her and to Kilian, our son, this book is dedicated.

Contents

Abbreviations, Conventions, and Texts Used

Abbreviated References

Ai.Gr.	Jakob Wackernagel (Albert Debrunner, Louis Renou), *Altindische Grammatik*. Göttingen: Vandenhoeck & Ruprecht 1896–.
CIIC	*Corpus inscriptionum insularum Celticarum*, vols. i–ii, ed. Robert Alexander Stewart Macalister, Dublin: Stationery Office 1945–9.
DELG	Pierre Chantraine, *Dictionnaire étymologique de la langue grecque*. vols. i–iv, Paris: Klincksieck 1968–80.
DIL	E. G. Quin et al. (eds.), *Dictionary of the Irish Language*, compact edition, Dublin: The Dublin Institute for Advanced Studies 1983.
DMic.	Francisco Aura Jorro, *Diccionario Micénico*, vols. i–ii, Madrid: Consejo superior de investigaciones científicas 1985–93.
*Docs.*²	Michael Ventris, John Chadwick, *Documents in Mycenaean Greek*, 2nd edn., Cambridge: Cambridge University Press 1973.
EWAia.	Manfred Mayrhofer, *Etymologisches Wörterbuch des Altindoarischen*, Heidelberg: Winter 1986–2001.
GEW	Hjalmar Frisk, *Griechisches Etymologisches Wörterbuch*. vols. i–iii, Heidelberg: Winter 1954–79.
GOI	Rudolf Thurneysen, *A Grammar of Old Irish*, rev. edn., Dublin: The Dublin Institute for Advanced Studies 1980.
Gr. Gr.	Eduard Schwyzer, *Griechische Grammatik*, vol. i, Munich: Beck 1939.
Gr. hom.	Pierre Chantraine, *Grammaire homérique*, vols. i–ii, Paris: Klincksieck 1942–53; vol. i, 5th edn., rev. and corr. 1973.
Grundriß	Karl Brugmann, *Grundriß der vergleichenden Grammatik der indogermanischen Sprachen*, Strasburg: Trübner 1886–1917 (1st and 2nd edns.).
HPN	Fritz Bechtel, *Die historischen Personennamen des Griechischen bis zur Kaiserzeit*, Halle an der Saale: Niemeyer 1917 (reprint Hildesheim: Olms 1964).

IC	Geoffrey S. Kirk et al. (eds.), *The Iliad: a commentary*, vols. i–vi, Cambridge: Cambridge University Press 1985–93.
ICS	Olivier Masson, *Les inscriptions chypriotes syllabiques*, 2ème édition augmentée, Paris: Klincksieck 1983.
IEW	Julius Pokorny, *Indogermanisches etymologisches Wörterbuch*, Bern and Munich: Francke 1959.
LÄGL	*Lexikon der älteren germanischen Lehnwörter in den ostseefinnischen Sprachen, begründet von A.D. Kylstra, fortgeführt von Sirkka-Liisa Hahmo, Tette Hofstra, Osmo Nikkilä*, vols. i–, Amsterdam and Atlanta, Ga.: Rodopi 1991–.
Lat. Gr. I	Manu Leumann, *Lateinische Grammatik. I: Laut-und Formenlehre*, Munich: Beck 1977.
LEW	*Lateinisches etymologisches Wörterbuch von Alois Walde. 3. neubearbeitete Auflage von J. B. Hofmann*, vols. 1–3, Heidelberg: Winter 1938–56.
LfrgrE	*Lexikon des frühgriechischen Epos*, ed. Bruno Snell et al., Göttingen: Vandenhoeck & Ruprecht 1986–.
LGPN	*A Lexicon of Greek Personal Names*, ed. by Peter M. Fraser, Elaine Matthews et al., Oxford: Oxford University Press 1987–.
LiEW	Ernst Fraenkel, *Litauisches etymologisches Wörterbuch*, vols. i–ii, Heidelberg: Winter 1962–65.
LIV	*Lexikon der indogermanischen Verben. Die Wurzeln und ihre Primärstammbildungen*, ed. Helmut Rix et al., 2nd edn., Wiesbaden: Reichert 2001.
LSJ	*A Greek-English Lexicon*, compiled by Henry George Liddell and Robert Scott. Revised and augmented throughout by Sir Henry Stuart Jones; revised supplement by P. G. W. Glare with the assistance of A. A. Thompson, Oxford: Oxford University Press 1996.
MLM	*Monumenta Linguae Messapicae*, vols. i–ii, ed. Carlo de Simone and Simona Marchesini, Wiesbaden: Reichert 2002.

General Abbreviations

acc.	accusative
Aeol.	Aeolic
al.	*alii*
aor.	aorist
Arc.	Arcadian
Arm.	Armenian
Att.	Attic
Av.	Avestan
Boeot.	Boeotian
C	consonant
Cypr.	Cypriot
dat.	dative
det.	determiner
Dor.	Doric
du.	dual
f.	following (one)
ff.	following (two or more)
fem.	feminine
fr.	fragment
Gmc.	Germanic
Goth.	Gothic
H	laryngeal
Hitt.	Hittite
IE	Indo-European
IIr.	Indo-Iranian
Il.	*Iliad*
Ion.	Ionic
Lat.	Latin
Latv.	Latvian
Lith.	Lithuanian
masc.	masculine
MHG	Middle High German
mod.	modifier
MoGk.	Modern Greek
MoW	Modern Welsh
Myc.	Mycenaean
N	noun
neut.	neuter
nom.	nominative
NP	noun phrase
OCS	Old Church Slavonic
Od.	*Odyssey*
OE	Old English
OHG	Old High German
OIr.	Old Irish
ON	Old Norse
OS	Old Saxon
part.	participle
PGerm.	Proto-Germanic
PGreek	Proto-Greek
Phryg.	Phrygian
PIIr.	Proto-Indo-Iranian
PItal.	Proto-Italic
pl.	plural
PN(N)	personal name(s)
pres.	present
PSlav.	Proto-Slavic
R	resonant
Russ.	Russian
RV	Rig-Veda
S	sentence
Σ	scholion
sg.	singular
Skt.	Sanskrit
Slov.	Slovene
s.v.	*sub voce*
Umbr.	Umbrian
V	vowel
VP	verb phrase

Bibliographical abbreviations are found in the Bibliographical References. The abbreviations for names of Greek authors and their works are those used in LSJ. The editions drawn on are those used in the *Thesaurus Linguae Graecae* and specified in the *Canon of Greek Authors and Works*, with the exception of the text of Homer for which in addition the editions by Ludwich and West have been employed.

Prologue: The Study of a Suffix

In the most general sense, the subject matter of this book is word formation in Ancient Greek. It seeks to establish why certain words are formed in the way they are, what they look like, and given that they are formed in a particular way, what they mean. The group of words thus studied are commonly called s-stem nouns and adjectives. Under this heading we include neuter nouns in *-ος*, type *γένος* 'stock, family, origin' and the much rarer ones in *-ας* of the type *κρέας* 'flesh', a small number of masculine and feminine words of the type *αἰδώς* 'shame' and a very large number of adjectives in *-ης* like *δυσμενής* 'evil-minded'. From a formal point of view these have in common that their stem consists of a lexical root (or two in the case of the compound adjectives), followed by a sigmatic suffix.

Admittedly, from a Greek point of view these formations look very different and varied, and the reason why they are studied together is first of all a *historical* one as they are the Greek descendants of an earlier, reconstructed way of forming words. Even the name 's-stems' is employed mainly for historical linguistic reasons as the main characteristic of these formations, the presence of an *s* (usually preceded by a vowel), is visible only in a small minority of the cases in which these nominal formations appear: the nominative *γένος* shows it – yet not the genitive *γένεος* or *γένους*. It can be seen in *εὐγενής* as well as the comparative *εὐγενέστερος* but an analysis that confines itself to the Greek data alone could argue that in the latter case, for example, the *-σ-* is 'parasitic', i.e. non-original just as in many formations of the type *καυστός*, *ἀκουστός*. It could even provide a reason for the insertion of a sigma: the avoidance of a sequence of four short syllables, not unlike *σοφώτερος* instead of **σοφότερος*, but by means of a slightly different strategy.

Yet such an analysis would be unsatisfactory, partly because it would leave a considerable number of loose ends. We would not be able to understand why the final sigma is present in *γένος*. Nor, for that matter, could we give a reason why the vowel preceding it is *-ο-* and not *-ε-* as in the rest of the paradigm. In addition, invoking a

'parasitic sigma' only means passing the buck: does the fact that Greek often makes use of this not indicate that there is something special to this sound? We know, of course, that the absence of -σ- in most forms is entirely regular and to be expected, and we do so because we are quite well informed about the prehistory of the Greek language. One of the most prominent and best known sound laws for Greek has it that an inherited intervocalic *-*s*- first develops into /h/ – and since Mycenaean has been deciphered we can still clearly see it there – and then disappears altogether on the way to historical Greek, leaving but a hiatus (e.g. gen. sg. Hom. γένεος < earlier *γένεhος < *γένεσος) that is then finally resolved through contraction, leading to classical γένους.

The tenor is thus already firmly set: this study takes historical linguistic considerations as its starting point. It covers the span from reconstructed Proto-Indo-European to attested Greek; but it is in equal measure historical in the other direction: it traces the development of the formations in question from the earliest forms of Greek through the Classical well into the Hellenistic period and sometimes beyond. If a comparison of Greek with PIE can teach us why the Greek forms look as they do from a phonological and morphological point of view, a contextual study is obviously impossible. They can and indeed will be compared to other words in the same lexical field, but this is in no way recompense for studying the words as elements of real texts. Tracing the attested history of the words in question reveals first of all their semantic characteristics and developments, but also, as we shall see, teaches us several lessons of Greek morphology. The main emphasis will be on Early Greek, particularly the language of the Homeric epics and Hesiod, as they provide by far the best vantage point from which both chronological limits of this study can be made out.

Still, a grouping together of these various formations and studying them from within Greek would be nonsensical if they did not bear a strong relationship to one another, both in terms of word formation, i.e. morphology proper, and of semantics. It will become clear that many such links exist and that this approach is justified. Therefore, our analysis will not only *not* study the words in isolation, but will also try to establish common traits of the various subgroups and, significantly, show the links between them in order to arrive at as comprehensive a picture as possible. To this end, a number of

semantically similar but morphologically very different suffixes will also be studied for the purpose of contrast and comparison. This means that this study has a strong synchronic component as it constantly looks at the actual usage of words in their context.

The Greek aspect of this topic in general has been well served for seventy years by Pierre Chantraine's *La formation des noms en grec ancien* which first appeared in 1933 and has been reprinted several times since. To this day it remains the most exhaustive discussion of word formation in Ancient Greek. More limited in scope but equally important is Ernst Risch's *Wortbildung der homerischen Sprache*, in particular the second edition which appeared in 1974. The works of these two great scholars provide an indispensable tool for this study and are, in their own ways, unsurpassed, for no comprehensive study on Greek s-stems has been published to this date. Certainly, important contributions have been made by looking at the s-stem adjectives and by trying to establish the situation for s-stem nouns in PIE, but the overall picture for Greek is still missing. This is remarkable as the significance of s-stems for the study of word formation is at least twofold.

In the first place, neuter nouns in *-oς* and compound adjectives in *-ης* are very well attested from the beginning of the documentation of Greek in the second millennium BC to the end of Ancient Greek as commonly defined, and neuter nouns in *-oς* survive in Greek down to the present day. The nature of the evidence is thus such that firm conclusions can often be drawn.

Secondly, s-stem nouns and adjectives are said to play a pivotal role in the so-called 'Caland's Law' or 'Caland Systems'[1] which can be described in the most general terms as a regular and well-defined set of correspondences of derivational affixes. This set is usually regarded as a relic from PIE times, unproductive in the daughter language. By examining the Greek evidence carefully we might be able to come to a better understanding of this still enigmatic phenomenon.

Our study, like that of many predecessors, will look at the morphological and semantic characteristics of the s-stem formations. As a result of this investigation, a number of traditional views will be

[1] This is the traditional terminology, going back to Schulze *apud* Fraenkel (1909) 124 and Nussbaum (1976) respectively.

challenged. In particular, it will emerge that the conventional notion of 'Caland's Law' is inadequate at least for Greek and quite possibly for the parent language as well. We shall also see in the course of the investigation that these morphological and semantic characteristics of the individual types and their historical development can be defined more closely. But morphology is not all that regular, not even from a synchronic point of view: there exist, for example, nonce-formations, mainly of a poetic nature, that clearly violate the rules of Greek word formation. Yet they exist, and they need to be explained, and it is here that we can on occasion learn quite a substantial amount about certain authors' dictions.

This also means that the same approach will not be possible for every discussion. Sometimes prehistoric morphological considerations are to the fore, sometimes the emphasis is on inner-Greek semantic study. This book, then, demands a lot of the reader. It presupposes a familiarity with the principles and main issues of comparative philology as well as the readiness to pay attention to small, seemingly insignificant little observations about, say, much-neglected Hellenistic authors.

To ease this task, we shall take a historical approach at the very beginning of this book, though of a different kind: the nature of this investigation and a great many of the problems related to it emerge from looking at the history of research into it. One of the greatest Classical philologists once remarked, 'Wer sich für die Geschichte seiner Wissenschaft interessiert, den kümmern nicht nur die Erkenntnisse, sondern auch die Wege, auf denen sie gefunden, und die Menschen, durch die sie gefunden worden sind.'[2] This, then, shall be our first concern: by looking at the history of the scholarship we shall try to make clear what the role of the s-stems in Greek word formation is, what questions arise and, significantly, *how* the words have been studied, i.e. how word formation has been looked at through the centuries. At the end of the first part we shall then be in a much better position to look at the individual formations and groups of formations concerned, and most of the remainder of the book will try to do just this. The route is undoubtedly arduous, but at the end we shall see that the study of this small piece in the ever-

[2] Bechtel (1914) p. vii.

changing puzzle that is Greek word formation may bear some fruit. For not only will we arrive at a better understanding of the formations in question themselves; more generally, it will appear that morphology and semantics in this particular area of Greek word formation are even more closely linked than had previously been thought.

1

The History

1.1 FIRST WORDS

Research into s-stem nouns and adjectives has a long and distinguished history. We owe the first statements to the ancient grammarians, and the most important observation is clearly that of Apollonius Dyscolus who was puzzled by the fact that simple s-stem adjectives (type ψευδής 'lying') were almost completely absent from the language while compound adjectives like δυσμενής were abundant.[1] Since simple adjectives in -ης were obviously irregular from his point of view, he explained them as secondarily formed after the compounds (type ἀψευδής 'without deceit, truthful'). This is important and remarkable, as it shows a readiness to explain a simple word on the basis of a more complex one—a clearly unusual procedure. But, as we shall see later on in this chapter and in more detail in section 4.11, this early grammarian hit the nail right on its head, and we must be prepared in principle to accept what one would intuitively call a kind of reverse derivation, something that not all scholars are necessarily prepared to admit.

1.2 RESEARCH IN MODERN TIMES: THE EARLY YEARS

Ever since the study of historical linguistics got under way in earnest, in no small measure due to William Jones's novel views on the nature of the Sanskrit language, given as a lecture in 1786 and published in 1788 in the first volume of the newly-founded *Asiatick Researches*, the s-stems figure in the literature. Quite early on, Bopp acknowledged

[1] *Anecdota* 547.19.

the existence of a suffix *-as* which, according to him, formed three classes of nominals in Sanskrit: (a) abstract nouns; (b) appellative nouns that can be active or passive in meaning; and (c) adjectives, simple and compound, resembling present participles in meaning.[2] Bopp illustrated this with Sanskrit words like (a) *sahas-* 'power', (b) *cakṣas-* 'eye' and (c) *nṛ-cakṣas-* 'seeing men', *tarás-* 'quick'. Parallels for these formations could be found in other languages, notably in Greek, and in the case of the nouns also in Latin, Germanic, and Balto-Slavonic. Very much in keeping with the then general view that of all the daughter languages Sanskrit resembled the parent language most closely, Bopp was not disturbed by the fact that it was clearly difficult to quote examples for uncompounded forms of group (c) (type *tarás-*) outside Indo-Iranian, nor was he worried about the vocalic alternation *-ος* vs. *-ης* in Greek. And understandably he could not be, for the perceived primacy of Sanskrit, which has an a-vowel where Greek shows an alternation, meant that the Greek situation was regarded as secondary, if unclear.

S-stems figure prominently in Schleicher's *Compendium*[3] where one suffix is recognized and still given as *-as*. Schleicher's scope was naturally wider than Bopp's and he identified s-stem nouns in more Indo-European languages than had been possible for his predecessors. Other than that, little progress can be observed, and Schleicher does not advance beyond citing the correspondences. The question of the differences in vocalism in Greek and Balto-Slavonic is not addressed, nor did he try to attribute any particular function to the suffix. It is clear that in these early years, what appears in Greek as *-ος* and *-ης* respectively was essentially regarded as *one* suffix.

However, it was recognized from very early on that this could form complex suffixes. Already Aufrecht in 1853, looking at formations in Lat. *-nus*, Greek *-νος*, Skt. *-nas* (cf. *pīgnus* 'pledge, token', *ἄφενος* 'wealth', *ápnas-* 'work'), had argued that this suffix is a composition from two primary suffixes, namely Lat. *-en-*, Gk. *-ον-*, Skt. *-an-* + our sigmatic suffix. He may be essentially right in his analysis, and the entire issue will concern us in section 2.2.

[2] Bopp (1842) 1370 ff. [3] Schleicher (1861) 374 ff.

Soon after Schleicher the semantics of the suffix became a more central concern to philologists. Much in keeping with the dictum that in the beginning was the verb, these early scholars sought to derive all s-stem formations from verbal *stems*, and to explain the semantics of s-stem formations in the context of what were thought to form the derivational bases for them.

The earliest such attempt known to me was made by Goebel in 1862 who tried to explain the suffix -*θεσ*- that he saw in formations like *ἄνθος* 'flower'. He observed that nouns in -*ος* were *passive* in meaning:[4] *πρᾶγος* 'das gethansein', 'die that' and thus, staying within Greek, explained the suffix -*εσ*-/-*ος* as nothing other than the affixation of the root *ἐσ*- 'to be' to the root. More precisely, he advocated a strong relationship between neuter nouns in -*εσ*-/-*ος* and the aorist passive in -*ην* which he interpreted as the imperfect of *εἰμι*, *ἦν*. Thus, e.g., *ἐδάρην* would be explained as 'I *was* skinned', and *πραγεσ*- as the 'thing that *was* done', 'thing [that has been] done'. Goebel noted a great number of nouns in -*θεσ*- like *ἄνθος*, *μέγεθος*, *πλῆθος* which he explained as the affixation of an extended form of the root for 'to place, to put' that we would now reconstruct as **dʰeh*$_1$-, cf. *τί*-*θη*-*μι*. This extended form in his view was *θεσ*- which was attached to verbal and occasionally nominal stems. He also identified this *θεσ*- in some forms of *τίθημι*, namely in *θεῖναι*, *τέθειμαι* and, remarkably, *θεός* 'god'. This, in turn, was taken by Goebel as identical to the aorist passive in -*θην*, leading him to the conclusion that the suffix -*θεσ*- 'verhält sich [. . .] zu der Endung *θην* des 1. aor. pass., wie die neutra in *ος* (suffix *εσ*) zu dem 2. aor. pass. in *ην*.'

Thereafter, Goebel attempted to etymologize all formations in -*θεσ*- according to this hypothesis, as a result of which a number of absurd explanations emerged. Thus, *ἄνθος* 'flower' is separated from its indisputable Skt. counterpart *ándhas*- 'herb' and rather explained as from *ἀν*- 'to blow' (as in *ἄνεμος* 'wind'). Similarly, *αἶθος* 'das in brand gesetztsein = gluth, feuer' is separated from Skt. *édhas*- 'fire-wood' and explained instead as *ἄϝ*-*ε*-*θος* from the root *ἀϝ*- 'to blow' (cf. *ἄημι*) in a special—but not attested—meaning 'burn'.

[4] Goebel (1862) 53.

These attempts must have been highly questionable already at the time, for they were harshly criticized in a number of editorial footnotes to the article by the editor and founder of the *Zeitschrift*, Adalbert Kuhn himself.[5] Goebel only published once again in the journal, in the following year, and his article was subsequently ignored in the literature. It was Goebel's fantastic etymologies that discredited his article more than anything else, although his morphological analysis and etymology of the suffix is, of course, also highly questionable to say the least. Yet, Goebel deserves credit for some of his observations. In the first place, he noted the existence of a complex suffix *-θεσ-* (even if in many of his examples the *-θ-* belongs to the root) which we shall have occasion to deal with in section 2.2. Secondly, he saw a special relationship between s-stems and the aorist passive in *-ην*, a connection that was rediscovered two generations later by McKenzie in 1919 (see below). Finally, his identification of *-εσ-* as a passive marker is not far off the mark as we shall see in section 4.7.

In some respects, Fick in his article in the newly-founded *Bezzenberger's Beiträge* was even more radical than Goebel. He denied the existence of an 'ursprachliches Nominalsuffix *-as*' outright.[6] According to him, if *ἀτειρής* 'indestructible', *πέσος* 'body' etc. were analysed as *ἀ-τειρ-εσ-* and *πέσ-ος*, one would not be left with the root but with 'das reine Garnichts'. He argued instead that the suffix was a non-ablauting simple -s- and claimed that the great majority of s-stem nouns and adjectives were derived from verbal *stems*, e.g. *ἀ-τειρ-εσ-* from the present *τείρε-ται*, *πέσ-ος* from the aorist stem as found in the aor. part. gen. sg. *πεσόντος*. Once again, nobody followed Fick in his analysis, and with good reason. Not only did Fick's view of the nature of the lexical root meet with opposition right from the beginning, his largely arbitrary derivation from certain forms of the paradigm failed to explain the regular ablaut alternation *-εσ-* vs. *-ος* in the nouns, even if the underlying, i.e. PIE vocalism was still

[5] Cf. p. 63 'Die vom verf. hier und im folgenden versuchte vereinigung verschiedener stämme unter einer wurzel verläßt den boden des thatsächlichen zu sehr, als daß wir sie vertreten könnten.'

[6] Fick (1877) 231 f.

thought to be a common *-*a*-. Moreover, in the case of many forms, no matching thematic verbal stem is in sight, e.g. *κλέος* 'fame' has a different ablaut grade to *κλύω*, and Skt. *śrávas-* stands beside a present *śr̥ṇóti* and an athematic aorist *áśrot*. But Fick, too, is to be credited with several valuable observations. He is, to my mind, absolutely correct in claiming that many adjectives in *-ης* are *verbal* in meaning and in derivation, such as Hom. *δυσ-αϝε-ς* 'ill-blowing' : *ἀϝέ-ντες*, *ἄημι*, using his own notation and segmentation.[7] Furthermore, Fick was, as far as I can see, the first person, at least in modern times, to have noted the regular correspondence between sigmatic formations and adjectives in *-υς*[8] and can therefore be regarded as a harbinger of Caland (see sections 1.4 and 1.5). But for Fick, these correspondences were, of course, embarrassing as they did not seem to fit his deverbative derivational pattern. Consequently, he accepted only a small number of them as inherited like *εὖρος* 'width, breadth' alongside *εὐρύς* 'wide, broad' which is mirrored in Skt. *váras-* alongside *urú-*. Many such s-stem formations were explained by him as analogical, such as *θάρσος* 'courage' vs. *θρασύς* 'bold'. This was particularly unfortunate as such formations are normally taken to belong to the oldest layer of s-stem nouns. Among other things, Fick paid no attention to the fact that the full grade of the root in s-stem nouns (as found in the archaic *θέρσος*) which occurs alongside the zero-grade form does not match the zero grade regularly found in the u-stem adjectives.

1.3 THE NEOGRAMMARIAN TURNING POINT

Ablaut alternations in s-stem nouns were first dealt with systematically in Brugmann's 1879 article. He was the first to recognize that the suffix ablaut situation as seen in Greek and Slavonic, i.e. nom. sg. **-a_2s* (our **-os*) vs. **-a_1s-* (our **-es-*) found in the other cases was the inherited gradation which he then traced back to the PIE mobile accent. This seems to have been commonly accepted, and in his Greek Grammar Meyer derived the alternation *πένθος* : *πάθος* 'suffering, affection' from an original paradigm *πένθος*, gen. **πr̥θεσός*.[9]

[7] Fick (1877) 233. [8] Fick (1877) 244. [9] Meyer (1896) 36.

Even if this particular pair is to be explained in a different way as we shall see, there can be no doubt that *in principle* Brugmann's explanation is completely right, and it was not until nearly one hundred years later that further progress in the reconstruction of the inflectional paradigm was made. Moreover, Brugmann's methodologically sound reconstruction meant an end to arbitrary derivations à la Fick and the period of research into s-stems using the comparative method could begin.

1.4 A FORGOTTEN MASTER

In these early days of research into s-stems in Greek there stands as a true milestone Parmentier's learned and important book published in 1889. The work is still very occasionally cited, the author almost completely forgotten; it is well worth highlighting not just his career but some of his observations, as they accord Parmentier his rightful place in the history of the study of Greek word formation.

Parmentier first read Classics at the *École normale supérieure de Liège* where Charles Michel was his teacher. When Michel obtained the professorship of Sanskrit at Ghent, Parmentier seems to have followed him and became *chargé de cours de philologie grecque et grammaire comparée* and wrote his doctoral dissertation on s-stem nouns and adjectives in Homer and Hesiod, a task that he fulfilled with *bravour*. After this, however, Parmentier moved away from Classical Philology. Instead, having obtained the professorship of Greek at Liège, he turned to tragedy and in particular patristics and edited a number of texts by early Christian writers. The quality of his work in this field can be gleaned from the fact that his editions of Evagrius and Theodoretus are still very much in use today, the latter having been brought up-to-date by Günther Christian Hansen in the 1998 third edition.

In our context, Parmentier's merits are numerous. His book was written at a time when interest in the reconstruction of the Indo-European parent language was at its peak and when the study of the development of grammatical categories within the individual languages was, by comparison, neglected. In this sense, his work fitted the *zeitgeist* of 'straight' classicists, but not that of Indo-Europeanists.

It is in at least three different ways that Parmentier's book is important here.

For a start, Parmentier observed that *some* compound adjectives in -ης in Greek, from Homer onward, reflect the formal characteristics (the vocalism) and the meaning of the verb. Thus, to use one of his own examples, δισ-θανής 'twice dead' corresponds in form and meaning to the aorist ἔθανον. Significantly, he saw that these were *not* accompanied by neuter nouns in -ος which had long been recognized to form the basis of such compounds (type μένος 'mind' : δυσμενής 'evil-minded'). He was the first person to demonstrate in a credible way that the adjectives in -ης do not all have the same origin and argued that some of them were patently formed from verbal roots or stems.[10] Thus, he argued, neuter s-stem nouns must not be reconstructed as their bases. This observation was conveniently ignored by many later writers, but it is of central importance as we shall see in sections 2.4 and 4.7.

Secondly, de Saussure had pointed out in passing that the oxytonesis of simple s-stem adjectives like ψευδής 'lying, deceitful' was hard to reconcile with the full grade of the root, and he assumed that they had arisen independently in Greek (as had already been argued by Apollonius Dyscolus, though de Saussure seems to have been unaware of the ancient grammarian's observation) and Sanskrit secondarily after the compounds.[11] At the same time, Brugmann in the article quoted above considered them to be original neuter nouns that had become adjectives simply by adding the ending *-*s* for the animates. This was then powerfully enshrined in both his *Griechische Grammatik* and the magisterial *Grundriß*[12] where Brugmann argued that pairs like ψεῦδος 'lie': ψευδής 'lying', Skt. *távas-*[13] 'strength': *tavás-* 'strong' definitely pointed to a PIE type that formed adjectives from nouns by oxytonesis. Certainly, the correspondence looked attractive but Parmentier sided with de Saussure and Apollonius Dyscolus and drew attention to the following facts:

[10] Parmentier (1889) 54. [11] de Saussure (1879) 201.

[12] Brugmann (1885) 55 and *Grundriß1* ii, 1. 386 ff.

[13] This is not the best of examples as the noun is not actually attested as a simplex; only the derived adjective *távas-vant-* 'full of strength' exists.

(a) There is not a single word equation of simple s-stem adjectives between any two language groups.
(b) Following de Saussure, if the type with oxytonesis were old, the zero grade of the root would clearly be expected.
(c) The absence of a special form for the feminine is unique among simple adjectives.[14]
(d) Alongside s-stem nouns we find—as had already been observed by Fick—not simple s-stem adjectives but the obviously archaic class of u-stem adjectives.
(e) The few examples of simple s-stem adjectives found in Skt. could be explained on the model of the patently productive type *kām-á-* 'desiring' : *kā́m-a-* 'desire'.
(f) Simple s-stem adjectives are extremely rare in both Greek and Skt. If they represented an ancient and common type of word formation, we would rather expect *ἠδής, *κρατής, *θαρσής etc. to survive than to have an adjective like ψευδής that is of uncertain age and etymology.

All in all, then, Parmentier rightly found it difficult to see how simple s-stem adjectives could fit into the patterns of PIE word formation, which led him to the conclusion that ψευδής etc. are inner-Greek formations *tout court*.[15]

This must have made an impact on Brugmann, for in the second edition of his monumental work he wrote that 'Simplizia dieser Art [...], wie z.B. ai. *tarás-* zu *táras-*, gr. ψευδής zu ψεῦδος, lat. *Cerēs* sind wahrscheinlich erst im Anschluss an Komposita ins Leben getreten [...]'.[16] However, Brugmann did not go as far as to say that the simple adjectives were all *einzelsprachlich*.

But Parmentier's work is of great importance in another respect as well. The special relationship between u-stem adjectives and s-stem nouns has already been remarked upon, and Parmentier viewed this as an inherited, regular pattern: 'Il existait en effet toute une classe d'adjectifs simples fonctionnant à côté des noms abstraits neutres en *-os*.

[14] This argument was powerful in Parmentier's time. We know now that other simple adjectives, the i-stem adjectives, also have a common form for the masc. and fem. and would argue that this could be a very archaic feature rather than an innovation.

[15] Parmentier (1889) 131. [16] *Grundriß2* ii, 1. 516.

C'étaient les adjectifs formés par le suffixe primaire accentué *-ú* (sansc. *u*, *vī*, *u*; grec *υς*, *ϵια*, *υ*).'[17] He also observed that wherever an adjective in *-υς* is not attested, we find one in *-ρός* instead (like *κῦδος* 'fame' : *κυδρός* 'famous')—but, significantly, never a simple adjective in *-ης*—and that many adjectives in *-υς* are only preserved in derivatives in *-υλος*. Moreover, 'outre les formations en *-os* et en *-ú*, les mêmes racines s'adjoignaient deux autres suffixes, les suffixes primaires *-jes* (grec *-ιο(σ)*, sansc. *-īyas*), *-istó* (grec *-ιστο-ς*, sansc. *-ishtha* [sic]).'[18] In other words, Parmentier saw that certain *roots* were regularly combined with a well-defined, closed set of suffixes. What is nowadays commonly known as 'Caland's Law' might well have been called 'Parmentier's Law', had he not overlooked the one particular item that was to make Caland famous.

1.5 *EX ORIENTE LUX*? CALAND'S LAW AND THE S-STEMS[19]

In number 19 of his *beiträge zur kenntniss des Avesta*, published in 1892, the Dutch orientalist Willem Caland observed that in Avestan, adjectives formed with a suffix *-ra-*, *-ma-*, or *-ant-* frequently replaced the respective suffix with *-i-* when they were used as the first member of a compound.[20] His starting point was the compound *xruui-dru-* which had traditionally been translated as 'having a bloody spear'. The influential orientalists Geldner and Bartholomae, however, rendered this adjective as 'wound-striking', comparing the first part with Skt. *kravíḥ* 'flesh' and explaining the second part as from the root **der-* 'hit, strike' (Gk. *δέρω* etc.). Caland defended the traditional interpretation and cited a number of comparable cases:

1. Av. *tiγra-* 'sharp, pointed' (Skt. *tigmá-*) : *tiž-i-sruua-* 'having pointed horns', *tiž-ii-aršti-* 'having a sharp spear';
2. Av. *dərəzra-* 'strong' : *dərəz-i-raθa-* 'having a strong wagon'.

[17] Parmentier (1889) 128. [18] Parmentier (1889) 130.

[19] See also Meißner (1998*a*) for a more detailed account.

[20] Caland noted that this occurs frequently, but not always. It would appear that he viewed this phenomenon as a general tendency rather than as a law since he himself immediately provided two counter-examples, the personal names *xšuuirāspa-* and *ərəzrāspa-*.

He also noticed that in a number of instances a simple adjective that happens not to be attested in Avestan does occur in Sanskrit:

3. Skt. *śvit-rá-* 'white' : Av. *spiti-dōiθra-* 'white-eyed'.

Building on this observation, Caland then explained the first part of *xruui-dru-* as a compositional form of Av. *xrū-ra-*, *xrū-ma-*, Skt. *krū-rá-* 'bloody'. His observation is and was intended in the first instance as a synchronic rule of Avestan word formation; yet it also contains a comparative element since he referred to Sanskrit in the course of his argument.

Only one year later, Caland came to the conclusion that the phenomenon that he had observed in Avestan went back, in fact, to common Indo-Iranian, as traces of it could also be found in Sanskrit. Caland compared Skt. *tu-rá-* 'wild' and *tuvi-grī́va-* 'strong-necked'.[21] He also observed—without explicitly noting the difference—that forms in *-i-*, as well as occurring in composition, are also found as simple adjectives. Thus he posed the question of whether a similar relationship existed between Skt. *śukrá-* and *śúci-*, both meaning 'clear, shining'.

The next important step was taken by Wackernagel in 1897. As with Caland, his starting point was in a number of *bahuvrīhi* compounds: Greek *ἀργι-κέραυνος* 'having bright lightning', *ἀργί-πους* 'swift-footed', *ἀργι-όδους* 'with white teeth'. Wackernagel rejected Osthoff's explanation, according to which *ἀργι-* was an elided form from a variant **ἄργιος* in prevocalic position, on the grounds that the replacement of an *ο*-stem with an *ιο*-stem in composition was unparalleled elsewhere in Greek. He then addressed himself to the second explanation that Osthoff had proposed but judged less likely, namely the possibility that an *ο*-stem was replaced by an *ι*-stem in composition. Wackernagel linked this possibility with Caland's observation and referred in particular to the Vedic personal name *r̥jí-śvan-*, literally 'having shining [or: swift] dogs', whose first member, in Wackernagel's words, 'gewiss dem Adjektiv r̥jra-<glänzendfarbig>,<rötlich> gleich zu setzen ist.' He thus realized

[21] It is possible that this very example is wrong as two different roots **terh₂-* and **teu̯h₂-* may conceivably be involved in forming *turá-* and *tuvi-* repectively, see *EWAia.* i. 655 f. for a careful discussion.

that *r̥jí-* = *ἀργι-* and in this way explained *ἀργός* as dissimilated from **ἀργρός*. Wackernagel added more Greek evidence such as *κυδι-άνειρα* 'having famous men' vs. *κυδρός* and found that this phenomenon occurred with other suffixes as well: u-stems as in Vedic *r̥ji-pyá-* 'flying straight' (epithet of the eagle) vs. *r̥jú-* 'straight'; s-stems as in *ἀργεννός* (<**ἀργεσ-νός*) and *ἐν-αργής* vs. *ἀργός* < **ἀργρός*; furthermore *πυκι-μήδης* 'of close mind' vs. *πυκνός* 'dense' and its adverb *πύκα*, *καλλι-* vs. *καλϝός* 'pretty', Attic *ῥᾳ̂α* 'easily' vs. *ῥᾴ-θυμος* 'light-hearted', *ῥᾴ-διος*, Ionic *ῥηΐδιος*.[22] Wackernagel also noticed the presence of this compositional *-i-* before other suffixes as in Skt. *r̥j-ī-ká-*, a name for Indra (?), Greek *κύδ-ι-μος* 'famous', *πυκ-ι-νός* 'close, firm', Hom. *φαίδ-ι-μος* vs. *φαιδ-ρός* (Pi., A.) 'bright, beaming', Hom. *Φαίδρη* and in the comparatives in *-ίων* and superlatives in *-ιστος* like *ῥᾴων*, *ῥᾷστος*.

The essential point in the observations of Parmentier, Caland, and Wackernagel are the regular alternations between suffixes yielding a variety of nominal formations. Parmentier and Caland independently considered these alternations to be synchronic phenomena of Greek and Indo-Iranian respectively while for Wackernagel, building the bridge between these two language groups, the matter, especially the replacement rule **-ro-* etc. > **-i-* was inherited from PIE. Yet, even Wackernagel was unable to offer a reason or a functional explanation for these alternations.[23]

1.6 A LONG SHADOW: THE DISCUSSION OF 'CALAND'S LAW'

Early Days

Caland's and Wackernagel's observations understandably caused excitement among philologists and scholars were quick to add more evidence, chiefly from Indo-Iranian.[24] The prevailing view at the

[22] That adverbs in *-α* belonged to this group of suffixes had already been noticed by Parmentier (1889) 137.

[23] Cf. *Ai.Gr.* ii, 1. 60.

[24] See in particular the collections by Bartholomae (1898) 259, (1900) 136 ff., Hübschmann (1900) 49 f., *Ai.Gr.* ii, 1. 59 ff.

time was that the formations in *-*ro*- were primary and that *-*i*- had no function other than that of a suffix used in composition and before other suffixes, a sort of linking element.[25]

However, more critical voices were also to be heard. Wilhelm Schulze offered the first attempt at an explanation of the *-*ro*- : *-*i*- alternations.[26] According to him, the latter were simply i-stem nouns used as first members of compounds since nouns are preferred over adjectives in such a function, a view that still enjoys strong support. A somewhat different view was taken by Hirt who explained the forms in *-*i*- as archaic adjectival formations preserved in compounds, while in the simplex forms they had been replaced by formations in *-*u*- and *-*ro*-. [27]

Gatherers: Describing the System

In the following period, different approaches were taken in order to cope with 'Caland's Law'. In general, a suspicious silence prevails among scholars as to their view whether *-*ro*- : *-*i*- ever was a productive derivational rule of PIE or any of its daughter languages. In more recent times, a number of philologists clearly take a sceptical view, and the law has even been described as an optical illusion[28] and not as functional in any meaningful way.

Among the more cautious scholars, Leumann[29] and Risch[30] limited themselves to listing the reasonably large number of roots that form their derivatives with the well-defined set of 'Caland' suffixes. Here, it is interesting to note that the suffixes involved seem to vary from language to language: adverbs in -α and adjectives in -αλέος are not attested with any certainty outside Greek while adjectival *-*(e)nt*- as in Lat. *argentum* plays virtually no role in Greek. It would thus appear that certain suffixes disappeared from the scene and new ones could enter the set of suffixes at any given stage. The presentation of the state of affairs in individual languages as done by these two scholars is, therefore, of central importance and it may be helpful

[25] Cf. Caland (1892) 592; *Ai.Gr.* ii, 1.61; Güntert (1910) 26.
[26] *Apud* Fraenkel (1909) 124 n. 2. [27] Hirt (1927) 274 f.
[28] Perpillou (1974) 106, followed among others by de Lamberterie (1990) 22.
[29] *Lat. Gr.* 265 f. [30] Risch (1974) 65 ff.

to set out here, for Greek, the main suffixes belonging to the 'Caland' type of alternation:

(a) adjectives (sometimes nominalized) in -ρός, -νός, -ύς for which there is good comparative evidence;
(b) adjectives in -αλέος, -(αλ)ιμος, -εδ(α)νός, formations that are limited to Greek;
(c) compositional first members in -ι-;
(d) nouns in -ος, together with compound adjectives in -ης;
(e) adverbs in -α.

Several points are worthy of note. Many scholars also include among the 'Caland' formations the comparative in -ίων and the corresponding superlative in -ιστος. This line is not adopted here as it is clear that the more we go back in time the more universal the use of the inherited suffix *-i̯os- for the comparative becomes. It is well known that in Myc., *-tero- is used only as a contrastive suffix and thus only comparing implicitly, as in *wa-na-ka-te-ro* 'belonging to the king' as opposed to *ra-wa-ke-si-jo* 'belonging to the λαϝαγέτας' while *-i̯os- is not limited to 'Caland' type adjectives, cf. *ka-zo-e* < *kak-i̯os-es* 'worse' from the simple thematic adjective κακός. It has also been argued that the stative verbs in PGreek *-ē-(type βαρέω 'I am heavy', Lat. *maneō* 'I stay') belong here but it seems that stative verbs are in no way limited or specially tied to 'Caland' roots, and for this reason they too will not be included here.

The most important sets of formations, not all of them of equal certainty, in early Greek are given in Table 1.1 (non-Homeric forms are marked).[31] Even from the limited collection in the table it is evident that our s-stems play a pivotal role here, and there are, in fact, many more pairs of adjectives in -υς : nouns in -ος such as βαθύς 'deep': βένθος/βάθος 'depth' that will concern us in section 2.6. If a u-stem adjective is found, then this will form the compounds (type θρασύς 'bold': θρασυκάρδιος 'bold-hearted'); if the adjective is one in -ρο- or, rarely, -νο-, then the compositional form will be in -ι-, while -ρο- becomes acceptable here only from the sixth century onwards. The exception to this is κρατερός/καρτερός 'strong' which is

[31] This list is not complete. Only roots that form at least three different 'Caland' formations or that show the central Caland observation, compositional *-i-, are included. For more forms cf. Risch (see note 30 above).

Table 1.1. 'Caland' type alternations in Early Greek

Adjective type (a)	Adjective type (b)	Compound in *-ι-*	Noun/adj. in *-ος/-ης*	Adverb in *-α*
ἰθαρός	*αἰθαλέος* (A.R.)	*Αἰθί-οψ*? *ἰθαι-γενής*?	*αἶθος* (A.R.)	
αἰσχρός, *Αἰσχύ-λος*			*αἶσχος*	
ἀργός(<**ἄργρός*), *ἄργυ-φος*		*ἀργι-κέραυνος* etc.	*Ἄργος*, *ἐν-αργής*	
γλυκύς, *γλυκερός*			Myc. *de-re-u-ko γλεῦκος* Gortyn +	
διερός		*διει-πετής* (*δια-πετής*)		
θαλύς, *θαλερός*			*θάλος*, *ἀμφι-θαλής* etc.	
θρασύς, *θάρσυνος*	*θαρσαλέος*	*Θερσί-λοχος* etc.	*θάρσος*, *θράσος*	
καλϝός	*κάλλιμος*	*καλλί-(ρ)ροος* etc.	*κάλλος*, *περι-καλλής* etc.	
κρατύς, *κρατερός*, *καρτερός*		*κραται-γύαλος* etc.?	*κράτος*, *κάρτος*	*κάρτα* (Hipp.)
κυδρός, *κυδνός* (v.l. Hes.)	*κύδιμος*, *κυδάλιμος*	*κυδι-άνειρα*	*κῦδος*, *ἐρι-κυδής* etc.	
λάθρη		*λαθι-κηδής*	*ἀ-ληθής*	
μιαρός		*μιαι-φόνος*		
	ὑπ-οιδαλέος (Archil.)	*Οἰδι-πόδης*	*οἶδος* (Hp.)	
πυκνός, *πυκινός*	*πευκάλιμος*	*πυκι-μηδής*	*ἐχε-πευκής*	*πύκα*
σμερδνός	*σμερδαλέος*		*σμέρδ[ν]ος*, *εὐσμερδής* (both Hsch.)	
ταρφύς, *τραφερός*			*τάρφος*	
ταχύς			*τάχος*	*τάχα*
τερπνός (v.l.; certain from Sa.)		*τερπι-κέραυνος*	*ἀ-τερπής*	
χαλαρός		*χαλί-φρων*		
ὠκύς			*ποδ-ώκης*	*ὦκα*

acceptable as a compositional form already in Homer (κρατερόφρων and καρτερόθυμος 'strong-minded, strong-willed'), suggesting that κραται- is not actually connected to the problem.[32] Thus it is clear that, as far as the compositional *-*i*- is concerned, its existence does not depend on an s-stem noun being attested, but rather on the nature of the adjective found.

Hunters: Trying to Catch the Ghost

The more daring approach is not satisfied with the presentation and analysis of the facts in the individual languages but seeks to reconstruct the earlier state of affairs. To the present day, the debate centres around the question of the nature of the 'Caland-i'. The most extreme view regards this *-*i*- as an original marker of an indefinite case, then developing into a stem forming suffix, for both nouns and adjectives.[33] This view cannot be proven right or wrong but it is not clear how, why and when a case form of this type developed into a stem forming suffix.

More commonly, scholars take the forms in *-*i*- to be adjectives, as Caland himself believed, or nouns in origin, the view held by Schulze as noted at the beginning of this section. This question has partly met with little understanding in the literature.[34] Semantically, they are palpably adjectival, and if the i-stem formation is attested independently, it is also adjectival, cf. Hitt. *ḫarkiš* 'white', Skt. *śúci*- 'clear, bright'.

The opposite view that these formations were nouns in origin has also mustered powerful support and it is in this context that our s-stems are of importance. Szemerényi observed that in Skt. *á-kravi-hasta*- 'with clean (not-bloody) hands' has the vocalism of the s-stem noun *kravíḥ* 'flesh' rather than that of the adjective *krūrá*- 'raw, bleeding',[35] and it is tempting to see the noun as the first member here.

[32] For an alternative explanation see Meißner (1998*a*) 245. In keeping with the acceptability of κρατερο-/κάρτερο- as first members, compositional κρατι- is not attested before the 5th cent. at the earliest and is limited to onomastics where it owes its existence to unrelated factors.

[33] Bader (1962) 18 ff.

[34] See Benveniste (1935) 79 ff., Kuryłowicz (1964) 232 f.

[35] Szemerényi (1964) 397.

Supporting evidence has been quoted from Greek. In 1967, Chantraine drew attention to the fact that in many cases the Greek formation in *-ι-* stands beside a neuter noun in *-ος* rather than an adjective in *-ρο-* etc. Thus, e.g., we find *Οἰδί-πους* lit. 'having a swollen foot' alongside *οἶδος*, *ὀρι-/οὐρι-βάτης* 'walking in the mountain' alongside *ὄρος*, *Ἀδί-λεως* lit. 'having a stout crowd' alongside *ἄδος*, *Μειδί-λεως* lit. 'having a smiley crowd' alongside *μεῖδος· γέλως* (Hsch.). But practically all of Chantraine's evidence comes from onomastics; in this corner of the lexicon, a compositional vowel *-ι-* is found in formations where it does not alternate with any of the suffixes mentioned, cf. *Αἰσι-γένης*, *Μοιρι-σθένης* and it seems dangerous to draw any firm conclusions from *Οἰδί-* etc. Other explanations for the i-vocalism here can be found.[36] There can be no doubt that the appellative examples with a 'Caland-i' are very archaic, and they are confined to early poetry. The Greeks must have been aware of this and it is obvious that in extreme formations like *Αἰσι-γένης*, *Μοιρι-σθένης* the first element belongs to the poetic vocabulary as well. Such formations can be deliberate attempts to create archaic looking names, producing, so to speak historically 'incorrect' forms. Most of Chantraine's examples belong here, especially those that look like verbal governing compounds of the type *φερέ-οικος*, having replaced their linking vowel *-ε-* with the archaizing *-ι-*. Consider, for example, the compositional first member *ἀρχι-* as in *ἀρχιτέκτων* 'head carpenter'. This form is clearly younger than *ἀρχε-*, the only form found in epic and early tragic poetry, cf. Hom. *Ἀρχέ-λοχος*. *ἀρχι-* is first found in *Ἀρχίλοχος* but it is nearly another two hundred years before it begins to spread to the appellative vocabulary. Partly, the i-forms may also have been helped along by the existence of compounds of the type *τερψίμβροτος*, and *ἀρχεσι-* is indeed attested as early as the seventh century in Stesichorus' *ἀρχεσίμολπον*. Chantraine's *Ἀρκι-* can most profitably be explained as a cross of the regularly formed *Ἀρκε-* and *Ἀρκεσι-*: both elements are attested, and indeed predominate in personal names—and *Ἀρκεσί-λαος* occurs as early as in Homer. This means that we are dealing here with a solely Greek compositional vowel *-ι-* that in origin may go back to the 'Caland-i' but that has spread, in a well-defined

[36] See also Meißner (1998*a*) 243 ff.

lexical area and with a clear motivation, much beyond its original domain.

Some of Chantraine's examples, however, are not straightforward: alongside *Οἰδι-* we find neither *Οἰδε-* nor *Οἰδεσι-*. This can be explained in the same way as *Μοιρι-* etc., i.e. we are dealing with a simple archaization limited to personal names, which would appear unproblematic. Yet the early attestation gives one pause, and it is tempting to suggest that Greek once possessed an adjective **οἰδρός* (with perhaps an analogical full grade of the root) that can still be seen in OHG *eitar* 'pus', OCS pl. *jadra* 'breasts' on the basis of which *Οἰδι-* would be understandable. Clearer still is an example not considered by Chantraine, namely *θερσι-*, first attested in *Θερσί-λοχος*. This stands beside the archaic *θέρσος* 'courage', apparently tying in with Szemerényi's observation about the root vocalism (and contrasting with *θρασύς*). But there is a difference here inasmuch as this first member is also found outside of compounded personal names in Bacchylides' *θερσιεπής* 'of daring words'. This means that we should probably regard the i-stem as old, and a matching simple adjective is indeed found in Av. *darši-*, even showing the same root gradation.

The only form in *-ι-* quoted by Chantraine that occurs in the appellative lexicon is *ὀρι-/οὐρι-* which occurs in several authors, e.g. *ὀριβάτης* in Ar. *Av.* 276. Here, though, the quality of the evidence is doubtful. These forms are either poorly attested variant readings from Roman times or found in bad papyri. Significantly, too, in all of these examples the putative *ὀρι-* has the sense of the locative, and *ὀρει-* will be the correct reading here.

A preliminary conclusion must be, then, that there is no evidence in Greek connecting the i-stem compositional forms with s-stem nouns from a historical point of view, and probably also not from a synchronic point of view.

A somewhat different approach was taken by Schindler.[37] For him, much like Schulze, the i-stem forms here are nouns, and while no explicit reason for this analysis is given by Schindler, his referral to his famous predecessor suggests that he accepted Schulze's reasoning. Schulze had found that '[i]n compositione solent Graeci ipsius

[37] Schindler (1987) 348 n. 44, followed, e.g., by Meier-Brügger (1992*a*) ii. 32.

substantivi formam incorruptam adhibere, non a substantivo derivatum, etiamsi sensui adiectivum aeque satis faceret'[38] and Schindler himself collected the evidence for i-stem abstract nouns alongside o-stem adjectives.[39] But the evidence is not straightforward as the mechanism here is one of simple substitution of *-*i*- for *-*o*-:[40] the best example (and virtually the only one found in more than one language) is clearly *$h_2e\hat{k}$-*ro*- 'sharp, pointed', cf. ἄκρος 'highest': *$h_2e\hat{k}$-*ri*-/$h_2o\hat{k}$-*ri*- 'peak', cf. ἄκρις 'peak of a mountain', ὄκρις 'high point', Lat. *ocris* 'mons confragosus';[41] what we do not find, however, is a substitution of a complex suffix of the Caland type. A connection could thus only be defended if alongside a 'Caland' type adjective the same roots also yield simple thematic adjectives. This is the case in a few examples, especially some colour terms like *(h_1)ro*u̯d^h*o- (Goth. *rauþs*, Lat. *Rūfus*) alongside *(h_1)rud^h*-ro*- in Greek ἐρυθρός, Lat. *ruber*. On the whole, though, this is an exceptional pattern and, more significantly, the Caland-type adjectives have sigmatic abstract formations as we have seen. From a formal point of view it also has to be objected that 'Caland' first members do not normally show the root gradation of the thematic adjective or the putative i-stem abstract: we find *á-kravi-hasta*- only in one language, the cross-linguistic evidence (Skt. *ṛji*-, Gk. ἀργι-, Skt. *rudhi*-, Gk. ἐρυσι- as in ἐρυσίβη[ῑ] 'rust') points to the same gradation of the compositional

[38] Schulze (1892) 39.

[39] Schindler (1980) 390.

[40] For a daring phonological explanation of this see Olsen and Rasmussen (1999), Rasmussen (2002).

[41] Yet not even this example is free from problems. Lat. *ocris* has often been suspected to be a loan from a Sabellic dialect, cf. Umbr. *ocar* (also found in Marrucinian and South Picene), and for this an original adjectival meaning 'pointed, sharp' has been argued for as the word seems used in Etruscan as a *cognomen*, see Untermann (2000) 791 ff. As far as Greek ὄκρις is concerned, it occurs together with an adjective ὀκρίς (A. *Pr.* 1016) and ὄκρις may well be an inner-Greek substantivization. The same will hold good for Latin: 'peak of a mountain' in Classical Latin is, of course, *summus mōns* and this serves to show how close noun and adjective are in this usage. But *ocris* could also be secondarily abstracted from compounds (*mediocris*). Middle Irish *ochair* and Welsh *ochr* cannot, of course, continue PIE *$h_2o\hat{k}$-*ri*- and either point to an original r-stem or a loanword. As for the rest of Schindler's evidence, with the exception of OCS *dŭbrĭ* 'gorge' for which an unclear but in any case non-Greek gloss δύβρις· κατὰ γλῶσσαν ἡ θάλασσα (Σ Theoc. 1.118a and c) exists, quite possibly belonging to a South Slavic dialect, there are no good word equations and none of them looks particularly old.

first member and the base adjective. One could explain this as analogical, but it shows that in all individual languages the compositional first members were understood as adjectival.

It is also worth noting that Schulze's observation is valid evidently only for relational adjectives and adjectives of material, and i-stem adjectives do not belong here. Also, it is clear that u-stem adjectives are readily acceptable as first members of compounds as we have seen. In order to circumvent this problem, one would then have to assume that the u-stems as we have them in composition are not adjectival but equally nominal. These would have to be derived from adjectives by means of 'internal derivation', i.e. a process that derives a word from an existing word not by suffixation but by transferring it to a different accentual-paradigmatic class (see section 1.11). As one of the best examples, Greek κρατύς (zero grade of the root) is taken as an adjective and contrasted with the noun Skt. masc. *krátu-* 'power, force' (full grade). But again it is evident that the compositional first members in *-*u-* have the same root gradation as the adjective, and it is also clear that κρατύς and *krátu-* are not actually comparable (see section 2.3). To interpret the i-stem forms as original nouns also means that simple adjectives in *-*i-* have to be explained as secondarily abstracted from the compounds, including the oldest piece of evidence we have, Hitt. *ḫarkiš* 'white'. This is particularly dangerous, of course, in a language that is so poor in compounds.[42] Following this line of reasoning, the simplest and most natural conclusion would be that both the i-stem 'Caland forms' and u-stem compositional members are adjectival in origin, with i-stem adjectives forming a recessive class in most languages. The corresponding nominalizations would, under well-defined conditions (see section 2.6), be expressed by s-stem nouns. This is a good position to take but one *caveat* must be added. The border between nouns and adjectives is known to be fuzzy, a phenomenon known as gradience: English *top* has 'nominal' semantics and behaviour in *the top of the mountain* but displays a more adjectival behaviour in *Rosanna got the top mark in the exam*. In the early attested IE languages, this

[42] Note also that in *šalla-kart(a)-* 'presumptousness', lit. 'great-heart', one of the extremely few Hitt. compounds, it is precisely not the i-stem form that we find as the first member, and the compound is almost certainly a very young formation.

behaviour is typically much more prominent than in English. Confining ourselves to examples from Greek, comparative/superlative forms like *βασιλεύτερος/βασιλεύτατος* 'more/most king-like', *κύντερος* 'more dog-like' or collocations such as *ἀνὴρ χαλκεύς* 'smith-man' are entirely regular (all examples are found from Homer onwards), and nouns can take genders just like adjectives, e.g. *ὁ/ἡ θεός*. Thus it may well be that we are in danger of overstating the difference between nouns and adjectives in PIE. If I still favour the former view it is mainly because it is hard to see what the role of and need for the s-stem abstract nouns was (and a chronological difference between these and the putative i-stem nouns seems not in sight) unless the i- and u-stem forms were clearly adjectival.

Hunter-Gatherers

A common factor in the gatherers' and the hunters' approach was that both gave the whole group of suffixes a certain mythical or at least archaic aura as one seemed to be confronted with a very ancient set of derivational rules. It is not surprising, then, that 'Caland' has been widely used to explain the otherwise unclear and inexplicable. Thus, in what must surely be the most ingenious interpretation of the *τερψίμβροτος*-type compounds, it has been argued that the **-ti-* here—still visible in unassibilated forms like Hom. *βωτι-άνειρα* 'feeding men', RV *dā́ti-vāra-* 'giving treasures'—is nothing other than the Caland form of the PIE agent suffix **-tr-*.[43]

Wackernagel himself saw the 'Caland-i' in Greek adjectives of the type *κύδ-ι-μος*. This looked like a very attractive solution since **-mo-* seems, albeit to a limited extent, to take part in this set of alternations, cf. Skt. *tigmá-* alongside Av. *tiγra-* 'sharp, pointed', one of Caland's own examples. But a subsequent study of the adjectives in *-ιμος* has shown that things may not be that simple.[44] The oldest formations appear to be *κύδιμος*, *κάλλιμος*, *φαίδιμος* and *ἄλκιμος*. Arbenz observed that at *Il.* 16.197 and 17.467/472 Homer refers to a pair of fighters *Αὐτομέδων* and *Ἄλκιμέδων*. Later on in the *Iliad*, at 19.392 and 24.474 and 574 the same couple is called *Αὐτομέδων* and *Ἄλκιμος*, the second name obviously being a hypocoristic form. Since there are other adjectives

[43] Bader (1975*b*) 46. [44] Arbenz (1933).

like *εὐρυμέδων* (Pi.+) used as personal names (*Εὐρυμέδων Il.* 4.228+) the formations in *-ιμος* may have developed, according to Arbenz, an appellative usage as adjectives, perhaps via standing epithets. The problem I see with his explanation is the development of a personal name to an adjective, but if he is right, the *-μο-* here would have nothing to do with 'Caland', and it can be argued in favour of Arbenz's theory that alongside three of the four seemingly oldest adjectives in *-ιμος*, compositional forms in *-ι-* (of various sources) are attested, namely *ἀλκι-* (loc. case form), *καλλι-* and *κυδι-* (both 'Caland' forms). His explanation is thus very attractive, and this example may suffice to demonstrate how dangerous the 'Caland' labelling can be. For a long time, many studies in word formation were influenced by this shadow to a significant extent. But Arbenz's work is important in another respect as well, as it marks the beginning of a whole series of studies into the history of individual suffixes in Greek which can almost be called the hallmark of the Zurich school under the guidance of Manu Leumann and then Ernst Risch. This approach will also prove profitable for our s-stems since they very much develop, as we shall see, their own dynamics in Greek.

1.7 *DON'T GET INVOLVED*: McKENZIE AND THE S-STEMS

In 1919 McKenzie, co-editor of LSJ, observed that in early Greek, especially in Homer, many s-stem adjectives like *ἡμιδαής*, *γυναιμανής* do not stand side by side with s-stem nouns but rather with aorist passive forms in *-ην*. McKenzie, who does not seem to be aware of earlier attempts suggesting a deverbative derivation for some of the s-stem adjectives and who does not get involved in any 'Caland' type speculations, drew conclusions from this that would not be maintained today. But his main observation is of central importance and will be discussed in section 4.7.

1.8 THE 1930s OR *GIGANTES ERANT SUPER TERRAM IN DIEBUS ILLIS*

If one were to name the most prolific period for the study of word formation in Greek there can be no doubt that this would have to be

the decade from 1930 to the beginning of the Second World War. The importance of Arbenz's work has just been outlined. The same year, 1933, saw the publication of Chantraine's *Formation des noms en grec ancien*, in its way a still unrivalled tool for this branch of study. Chantraine's discussion of s-stem nouns and adjectives is necessarily brief. With regard to the nouns, he attempted to group them into semantic fields and indeed it is remarkable that the words for 'skin' are mostly s-stem nouns (*δέρος*, *εἶρος*, *κύτος*, *νάκος*, *πέκος*, *σκῦτος*), as are many terms for weapons (*βέλος*, *ἔγχος*, *ἔντεα*, *σάκος*, *ξίφος*). But although this is evident in a small number of fields, the conclusion that '[i]l ne s'agit pas d'un suffixe de sens défini, mais d'un élargissement, dépourvu de valeur sémantique'[45] is inevitable. Concerning the formation of s-stem adjectives his judgement is very conservative; the deverbative derivation, established in principle by Parmentier and McKenzie, is acknowledged only as a coded admission that a relatively great number of adjectives are difficult to connect with s-stem nouns.[46] The great majority of s-stem adjectives, for him, are clearly derived from neuter s-stem nouns, even if one has to assume that this noun was lost. Thus, in connection with *πυραυγής* 'qui a l'éclat du feu', Chantraine compared Skt. *ójas-* 'vigour, power', and for Homeric *δυσαής* 'ill-blowing' he referred to *ἄος· πνεῦμα* found in Hesychius. It would appear, though, that the assumption of a major loss of neuter s-stem nouns here is unsatisfactory, *per se* and because the s-stem nouns are quite a resistent class to the present day, and much needs to be explained here. Chantraine did not discuss the history of the respective suffixes in Greek. On the basis of a closer analysis we shall see that in fact in many cases the derivational process was reversed, i.e. an s-stem adjective not based on a neuter s-stem noun secondarily gave rise to such a noun.

One of the most important points discussed by Chantraine is the role of words in *-εσ-/-ος* when contrasted with other formations, and Chantraine was the first person to consider this in detail. He observed that in Homer *τάχος* can be semantically distinguished from *ταχυτής* inasmuch as the latter means 'la vitesse en tant que qualité abstraite, à l'état pur' while *τάχος* has a 'valeur presque

[45] Chantraine (1933) 414. [46] Chantraine (1933) 426.

concrète'.[47] This statement, made almost in passing, is very valuable and shows the path to a new dimension of studying word formation. In section 2.6 Chantraine's observation will be put in a wider context and the differences between the two types of formation will be established. Similarly, the difference between compound adjectives in -ης and other formations will be examined in section 4.12.

Risch in 1937 and in even more detail in 1974 pursued a different path. He did not contrast suffixes but built on Caland's and Wackernagel's observations. He identified further suffixes belonging to the set of statistically significant alternations and grouped them together as 'Caland suffixes'.[48] This enshrinement is used up to the present day and is powerfully supported by a wealth of evidence in which the s-stem nouns and adjectives play a central role. His collection and grouping of the evidence will consequently be amply exploited in the remainder of this book.

Contrary to Chantraine's approach, Risch did take into account the history of the suffixes, at least as far as the adjectival formations are concerned. He is an outspoken advocate of the possibility of a deverbative derivation of s-stem adjectives. In his view, such compounds arose by reinterpreting original possessive compounds where the second element could be felt to be derived from a verb. Thus, διογενής, originally 'having one's origin from Zeus' or 'having a divine origin', was reinterpreted as 'stemming [i.e. γενέσθαι] from Zeus'. Risch could not go into the details but his explanation constitutes a considerable contribution towards the understanding of this class of adjectives. It would appear, however, that the explanation can be somewhat refined, and in section 4.7 we will attempt to do this. What Risch's statement means, in any case, is that from a Greek point of view nominal -ος and adjectival -ης are regarded as two different suffixes.

1.9 WORK ON LATIN AND SANSKRIT

Chantraine's and Risch's work covered a large range of Ancient Greek word formation and it is not surprising, therefore, that after them the Greek s-stem formations did not receive any detailed or comprehensive treatment for quite some time. This can be contrasted, for example, with Latin and Sanskrit where several monographs

[47] Chantraine (1933) 418. [48] Risch (1974) 65.

highlighted various aspects of the s-stem formations in these two languages.

Quellet's 1969 book deals mainly with the semantic value of the suffix *-or* in Latin words such as *vigor* 'strength', *timor* 'fright', *rubor* 'redness'. At least some of them apparently go back to old s-stem formations, though morphology is not really his concern. He defined the suffix as expressing 'un procès autonome et imperfectif [...]: le procès est envisagé dans son déroulement, à l'exclusion de son *origine et de son *terme'.[49] What this means in effect is that the nouns in *-or* are nominalizations of impersonal verbs or, regularly, of stative verbs. We shall see that this value, although very broadly defined, is to some extent reflected in the semantics of Greek deverbative s-stem adjectives (section 4.7).

Manessy-Guitton's 1961 and 1963 works are devoted to the morphological peculiarities and etymological connections of s-stem nouns in Sanskrit and Latin. Not much of this is of primary importance in our context, but in these works the author admitted the existence of a complex PIE suffix *-*nes*-, a suffix that had already preoccupied Aufrecht. Yet, in a later study with special reference to Greek she came to the conclusion that for the parent language such a suffix cannot be reconstructed. There is an obvious problem here that we shall deal with in section 2.2.

Starting from the Sanskrit word *ójas* 'power, might' whose *ancienneté* had already impressed Chantraine, Gonda attempted a semantic definition of the suffix *-*es*-/-*os* for the parent language. According to him, these formations 'denote potent entities, substances, "ideas", bearers of energy, power-substances which made the more or less primitive ancient Indo-Europeans experience the presence of something residing in them'.[50] *ójas* 'must be considered a "Daseinsmacht", a potency, a "power-substance", which empirically, or within some form of experience, is supposed to be present in persons, things and phenomena, and by virtue of which these are powerful, influential, effective, endowed with something which is beyond the bounds of understandable common experience and which may rather vaguely be described as a kind of vital energy'.[51]

[49] Quellet (1969) 131.
[50] Gonda (1952) 73.
[51] Gonda (1952) 46.

Gonda's views are obviously rather general and so riddled with animistic ideas about Indo-European religion that they are hard to refute. They are difficult to square, however, with the inanimate character of these nouns. Whether they are true or not, they are not particularly helpful when it comes to the explanation of Greek words such as πλέκος 'basket', ἕδος 'seat', and it would require a great deal of tolerance and imagination to ascribe potency to a noun like *μέτος 'year', Greek ἔτος etc. Gonda's study serves to show, however, how speculative the interpretation of semantics, especially that not based on individual forms or lexical roots, can be.

On a more sober note, Nowicki collected and analysed the Indo-Aryan s-stem nouns in 1976. His study reveals a number of interesting facts. First, surprisingly few of the Indo-Aryan formations seem to be inherited. About 180 s-stem nouns in *-as-* are attested in Skt., only 70 of which have cognates in other languages (including Avestan). Many of the forms in the Rigveda are *hapax* and some very much look like nonce formations. Even commonly cited words such as *jánas-*, usually compared to Greek γένος, Lat. *genus* occur but once. Secondly, in their capacity to produce action nouns, the s-stems are still productive in the Rigveda: in these cases, like *vépas-* 'trembling', a connection with a primary verb can always be established. That productivity ceases, however, after these oldest texts, and new formations are exceedingly rare after the Rigveda. In all other functions (resultative nouns, instrument nouns) the suffix had already ceased to be productive in our earliest texts. Thirdly, some nouns are attested with diverging semantics, e.g. *ápas-* is used both as an action noun 'work(ing)' as well as a resultative noun 'work done'. Even if one allows for a general trend abstract noun (in a wide sense of the word) > concrete noun it is evident that the semantics of such formations will be very hard to reconstruct for the parent language.

1.10 THE 1980s

This decade saw both the publication of a book on Greek s-stem nouns and the presentation of a magisterial thesis on the adjectives. But this is where the similarity between the two works ends. Höfer's declared aim in his 1984 book is the description of verbal abstract nouns in -εσ-/-ος. Apart from listing and etymologizing the 171

nouns in -ϵσ-/-οs that in his view are attested with certainty, thereby merely repeating Frisk's views, little emerges from his study other than the known observation that certain nouns can be regarded as direct nominalizations of verbs, e.g. ψϵῦδοs 'lie'.[52]

By way of contrast, Alain Blanc presented in 1987 the most comprehensive study of Greek s-stem adjectives ever undertaken. Practically all aspects, from suprasegmental features like the accentuation to phonology, morphology, and semantics are covered, and the formations are analysed from both a textual and a historical-linguistic point of view. Many of the views expressed in this thesis that has regrettably never been published in full have influenced the ideas put forward in the present book, and there will be ample room to present and discuss some of the many important ideas of Blanc's in Chapter 4. The original thesis underlying this book was written without recourse to Blanc's work, and it is particularly gratifying to see that both Blanc and myself on a number of occasions arrived at the same conclusions independently.

A number of articles have sprung from his thesis, mainly dealing with the etymology of individual s-stem adjectives.[53] Etymology is not the main concern of this book, and therefore Blanc's systematic semantic analysis, and the contrasting of s-stem with other formations are particularly relevant in our context.

1.11 INFLECTION AND WORD FORMATION

Throughout this first chapter, and indeed for the remainder of this book, the suffix is given as **-es-/-os*, indicating that the vowel preceding the **s* varies, depending on several factors. This remarkable vowel change and the question arising from it as to what should be regarded as the original or standard form of the suffix was one that occupied, as we have seen, even the early scholars, inspiring some rather adventurous etymological suggestions. It was not until the 1970s that the connection was made clear in a persuasive way between the shape of the suffix and the inflectional paradigm reconstructable for the parent

[52] For a fair review see Peters (1984).
[53] See Blanc (1985, 1988, 1992*a*, 1992*b*).

language. Again, this is a complex issue and a few basic points need to be established first.

Let us consider the inflection of the word for 'father' in Greek (and indeed in many other IE languages). It is evident that a number of changes occur in the paradigm:

nom. sg.	πατήρ
acc. sg.	πατέρα
gen. sg.	πατρός

The nom. sg. has a long vowel in what looks like the suffix;[54] this vowel bears the word accent. In the acc., the vowel is short, the accent still tied to it. In the gen., however, the vowel has disappeared, and the accent is on the ending. There is an obvious correlation here between the word accent and the presence or otherwise of the suffix vowel. From these simple facts one might infer that the rightward shift of the accent that we see in the gen. triggers the loss of the preceding vowel. It is not clear what causes this shift of the accent, but correlation between this shift and the loss of the vowel is hard to dispute. It is important to note that the accentual behaviour is seen as the primary factor here and that the ablaut difference is a consequence of this.

This pattern is mirrored in much the same way in a whole range of languages in a good number of words. It appears that in the original, i.e. PIE declension of such words, there was a regular paradigmatic accentual alternation of this type whereby in the so-called strong cases (the nom. and acc.) the accent was on the suffix which was in the full grade while in the weak cases (essentially the rest, but not the loc.) it was on the ending, and the suffix was in the zero grade.

On the basis of such regular alternations, a number of *paradigmatic accent classes* have been established and reconstructed for the parent language.[55] The basic distinction here is that between static and mobile ('kinetic') paradigms, i.e. such where the accent remains

[54] It is common to isolate a suffix *-*ter*- or, more recently, *-h_2*ter*- in kinship terms even though it has to be admitted that once one begins etymologizing these words the resulting roots are very hard to identify.

[55] An excellent and up-to-date overview of the entire topic is found in Meier-Brügger (2002) 203 ff.

on the same formative element throughout the inflection and such where it changes, depending on the individual case. Tied to the accentual behaviour we find the corresponding ablaut grades, the basic assumptions being that the accented part of the word will have the e-grade, the immediately post-tonic syllable can have the o-grade or the zero grade, all other syllables show the zero grade. Furthermore, Greek and Sanskrit show that the weak cases can never be accented further to the left than the strong cases, and there is good reason to assume that this was so in the parent language as well. The loc. takes a special position; Sanskrit grammarians defined it as a 'middle' case as it sometimes agrees with the strong cases, sometimes with the weak ones. From a PIE perspective it looks as though the loc. had a very strong tendency to have an accented suffix, independent of the behaviour of the rest of paradigm.

This means, then, that in theory we can envisage three static and four mobile paradigms:[56]

(a) 'akrostatic', i.e. accent always on the lexical root, schematically:
strong: $R_{(\acute{e})} - S_{(z/o)} - E_{(z)}$ (expected, in fact $R_{(\acute{o})}$ or $R_{(\acute{\bar{e}})}$ are reconstructed)
weak: $R_{(\acute{e})} - S_{(z/o)} - E_{(z)}$

(b) 'mesostatic', accent always on the suffix:
strong: $R_{(z)} - S_{(\acute{e})} - E_{(z/o)}$
weak: $R_{(z)} - S_{(\acute{\bar{e}})} - E_{(z/o)}$

(c) 'teleutostatic', accent always on the ending:
strong: $R_{(z)} - S_{(z)} - E_{(\acute{\bar{e}})}$
weak: $R_{(z)} - S_{(z)} - E_{(\acute{\bar{e}})}$

As a matter of fact, there is virtually no evidence for the teleutostatic and no reliable evidence for the mesostatic types.[57] Thus the only static type for which there is any evidence is the akrostatic one. But there is a further complication here inasmuch as we find, under this

[56] The cover symbols used here are R (root), S (suffix), E (ending), (e) e-grade, (o) o-grade, (z) zero grade.

[57] The fem. ā-stems have been regarded as an original mesostatic type. This may be true on one level but it is almost certainly anachronistic. For the entire paradigm arose very late in PIE or conceivably even after the primary dispersal of the daughter language groups, i.e. at a time when this scheme had long ceased to operate productively.

scheme, otherwise unknown ablaut variations: the strong cases do not show the expected **é* but rather **ó* or **ḗ* under conditions that have so far been impossible to specify.[58] The divergence is obvious and given that the evidence is of varying kinds and character, there is a strong suspicion that to some extent this is a 'dustbin class' for ill-understood phenomena. Some of our s-stems that show a long vowel in a number of languages such as Greek *μήδεα* 'plans' alongside *μέδεα* 'genitals' have been discussed in this context and will concern us in section 2.3.

In the mobile paradigms we can distinguish between the following types:

(d) 'proterokinetic', with the accent on the root in the strong cases and on the suffix in the weak ones, schematically:
strong: $R_{(\acute{e})} - S_{(z/o)} - E_{(z)}$
weak: $R_{(z)} - S_{(\acute{e})} - E_{(z/o)}$

(e) 'hysterokinetic', with the accent on the suffix in the strong cases and on the ending in the weak ones:
strong: $R_{(z)} - S_{(\acute{e})} - E_{(z/o)}$
weak: $R_{(z)} - S_{(z)} - E_{(\acute{e})}$

(f) 'amphikinetic', with the accent on the root in the strong cases and on the ending in the weak ones:
strong: $R_{(\acute{e})} - S_{(z/o)} - E_{(z)}$
weak: $R_{(z)} - S_{(z)} - E_{(\acute{e})}$
This latter type is somewhat different from the others. As outlined above, the loc. had a tendency to be stressed on the suffix. In the other paradigms this means that it behaved like either a strong or a weak case. Here, it means that it would take a form not found elsewhere in the paradigm:
loc.: $R_{(z)} - S_{(\acute{e})} - E_{(z/o)}$
In other words, we find the accent on every part of a word belonging to this class at some stage. This type has therefore also been called 'holokinetic', and 'amphikinetic' would be a useful term then only for root nouns, i.e. nouns without an overt suffix:
strong: $R_{(\acute{e})} - E_{(z)}$
weak: $R_{(z)} - E_{(\acute{e})}$
with the behaviour of the loc. being uncertain.

[58] It has even been suggested that both **ó* and **ḗ* could surface in the same paradigm, cf. Schindler (1994) 398. The distribution would be very unclear but contradicts the assumption of these vowels only being found in the strong cases.

(g) The most recent addition to this edifice is the so-called 'anakinetic' type[59] where, different from all the other stem classes, the accent is retracted in the weak cases and both unstressed e-grades and stressed o-grades are allowed for (reconstruction given according to Tremblay):

strong: $R_{(z)} - S_{(ó)} - E_{(z)}$
weak: $R_{(é)} - S_{(z)} - E_{(z)}$.

Again, evidence for some classes is better than for others. The anakinetic type operates with parameters otherwise unacceptable, and it goes very much against the grain of the visible evidence. In Greek and Skt. (as well as the other languages inasmuch as they can add anything here), the movement is only ever rightward; the anakinetic type can safely be dismissed. By way of contrast, evidence for the protero- and hysterokinetic types is very good: the word for 'father' as illustrated above would be a good example for a hysterokinetic word; for the proterokinetic type, we may look to u-stem adjectives like Greek *ἡδύς*, Skt. *svādúḥ* < **su̯eh₂d-ú-s*, showing an e-grade, unstressed root and a zero grade but stressed suffix. It is evident that this cannot be original. What follows from the distribution is that both the root (because it has the full grade) and the suffix (because of the accentuation) must have been stressed in various forms of the paradigm. The gen. shows the full grade of the suffix, together, as expected, with the accent: Greek *ἡδέϝος*, Skt. *svādóḥ* < **su̯eh₂d-éu̯-os/s*. This means, then, that the most likely scenario is that the root will have been stressed in the cases where we find a zero-grade suffix, i.e. the strong cases, and the suffix bore the stress in the weak cases: at an earlier stage still in PIE we must have had a 'strong' stem **su̯éh₂d-u-* and a 'weak' stem **suh₂d-éu̯-*: precisely the proterokinetic type. It is clear that various analogical levellings have clouded the picture: the root ablaut is hardly ever maintained (unsurprisingly as the lexical root needs to be clear) and, in the case of this and many other u-stem adjectives, is levelled in favour of the full grade found in the strong cases; the accent, on the other hand, is columnalized on the suffix, i.e. the pattern of the weak cases has been generalized; the suffix ablaut is maintained well.

[59] See Tremblay (1996*a*) 102.

In his famous 1975 article, Schindler argued that most of the neuter s-stem nouns belong to this class (type γένος). At the same time, he noted that a few s-stems have a long vowel e.g. μήδεα 'plans' which under this system would clearly point to the akrostatic class, and this was later explicitly argued by him. The problem is a complex one, and the details will be looked at in section 2.3.

The holokinetic type is rapidly expanding, i.e. more and more stem classes are said to belong here; this includes a small number of s-stems, namely the animate ones like Greek ἠώς, Skt. *uṣás* 'dawn' (see section 3.4). No language, however, even comes close to reflecting the original state of affairs here, and while the evidence can be explained on the basis of the holokinetic model, it is dangerous from a methodological point of view as under this model root, suffix and ending will have been stressed somewhere in the paradigm, and, with the help of invoking analogy, one is free to assume more or less whatever gradation and accent is needed to explain the data as actually attested.

1.12 RECENT WORK ON S-STEMS

The word for 'dawn' just mentioned is in many ways a troublesome piece of evidence. Clearly, it is a very old word; Fritz argues that dawn was personified early on and that it formed part of the PIE pantheon. Owing to its morphological shape it is regarded as an old collective formation, and it is even argued that this very word was perhaps responsible for the creation of the feminine gender.[60] This is a far-reaching conclusion and we shall look at the problem again in section 3.4.

Doubtless the most important publication on s-stems in recent years is Stüber's 2002 book on the topic. It deals with the PIE s-stems argued in a comprehensive way, combining the morphological (i.e. paradigmatic) and the semantic approaches, the two areas that had occupied scholars right from the beginning of research into these formations. She first establishes what s-stems can be reconstructed for the parent language and then discusses the accentual paradigms;

[60] Cf. Fritz (1998) 263: 'Vielleicht ist es also die Göttin der Morgenröte gewesen, was die Indogermanen – und Indogermaninnen – dazu bewogen hat, die holde Weiblichkeit mit einem eigenen sprachlichen Zeichen zu beehren.'

for her, the neuter nouns are either akrostatic or proterokinetic. As far as the animate ones, like the word for dawn, are concerned she agrees with Fritz that they continue old collective formations and inflect according to the holokinetic/amphikinetic paradigm. Turning to semantics, it is argued that the meaning of a given PIE s-stem depends on the characteristics of the verbal root: depending on well-defined factors, a noun can be a *nomen rei actae* or an action noun, more rarely, an agent or a result noun.[61] The work is evidently of great importance for our task and will frequently be cited. However, our focus is somewhat different as the semantic side will primarily be looked at from an inner-Greek point of view. As far as morphology, i.e. the reconstruction of the actual inflectional paradigm, is concerned, an attempt will be made to explore the issue further and the problem will be looked at in detail in sections 2.3 and 3.4.

1.13 WORD FORMATION IN GENERATIVE GRAMMAR

So far we have concentrated on what one might term the traditional way of studying word formation. Both problems and suggested solutions might benefit, however, from a more general outlook; in particular it is worth looking at the debate that has surrounded the nature and status of word formation in generative grammar. Obviously it cannot be expected that theories developed for the analysis of English can be applied wholesale to languages for which there is limited evidence, nor can we hope that a study of the Greek s-stem formations will radically alter these theories. Nevertheless, as we shall see, some of the questions currently discussed apply to all forms of morphological data, and our s-stems can potentially make an important contribution in this regard.

It is undoubtedly Chomsky's merit to have highlighted a great number of difficulties with the traditional notion of morphology. Accepting that there is a distinction to be drawn between inflection and derivation, he separates the two quite radically. In the early generative approach which has become known as the *Standard Theory*,[62] a sentence like *The boy runs*[63] would be analysed as illustrated

[61] See Stüber (2002) 217 ff., in particular 243 f.
[62] Chomsky (1965).
[63] The example is taken from Spencer (1991) 65.

in Figure 1.1. The noun phrase (NP) *The boy* carries a number of syntactic features – comparable to the distinctive features of phonology – to mark the grammatical person (3rd) and number (singular). By a transformational process, these features are copied from the NP onto the verb which now carries the features [+ 3rd person] and [− plural]. To realize these on the root so that the actual form *runs* surfaces is entirely the job of phonology. This means that inflectional morphology as a whole was reduced to an interaction between syntax and phonology, albeit with the help of certain readjustment rules 'converting the surface structures generated by the syntactic component into a form appropriate for use by the phonological component'.[64]

The situation regarding word formation is far more complex than this since derivational processes are 'typically sporadic and only quasi-productive'.[65] In Chomsky's view, productive processes such as nominalizations like *destruction*, *refusal*, *sincerity* from the verbs *destroy*, *refuse* or the adjective *sincere* do not cause any

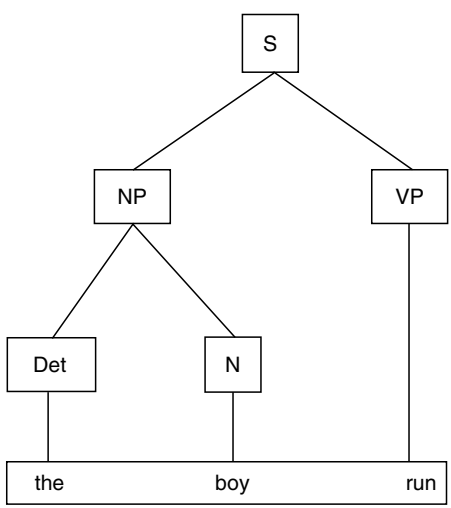

Figure 1.1

[64] Chomsky and Halle (1968) 9. The admission of such readjustment rules was, in effect, the back door through which morphology was readmitted to generative grammar.

[65] Chomsky (1965) 184.

problems: their semantics are entirely predictable on the basis of the verbs/adjectives from which they are created by a simple transformation – they are nothing more than nominalized sentences. Such items, then, do not enter the lexicon which is defined as a principally unordered list of all lexical formatives.[66] One feature of lexical entries that is particularly relevant here is that their semantics are idiosyncratic; the semantics of *destruction*, *refusal* and *sincerity* are not idiosyncratic and cannot, therefore, enter the lexicon. On the other hand, *horror* (: *horrify*, *horrid*) or *frighten* (: *fright*) are the results of quasi-productive processes. There are 'no rules of any generality that produce the derived items'.[67] Consequently, such items do enter the lexicon.

Later on,[68] Chomsky focused again on English nominalizations of the type *refusal*, *destruction* only to come to the conclusion that, contrary to his earlier view, they are better regarded as distinct lexical items rather than accounted for by syntactic transformations. His arguments are both syntactic and semantic: only gerundival nominalizations like *destroying* are nearly always acceptable and hence can be called productive while 'derived nominalizations' like *destruction* cannot be obtained by transformation and are idiosyncratic in this respect. Compare the following examples:

1.1. John is eager to please.
1.2. John is easy to please.

2.1. John's eagerness to please
2.2. *John's easiness to please

To explain the discrepancy between *easiness* and *eagerness*, it is argued that lexical insertion takes place at a deep structure level. This means that the acceptability of *easiness* and *eagerness*, as illustrated above, depends on their subcategorization requirements. More precisely, Chomsky suggests the construction of category-neutral items EAGER and EASY both of which can be nouns or adjectives, depending on the context.

[66] Chomsky (1965) 84.
[67] Chomsky (1965) 186.
[68] Chomsky (1970).

Equally grave are his semantic objections. 'Derived nominals' typically reflect only a part of the possible meanings of the corresponding verbs. This 'range of variation and its rather accidental character are typical of lexical structure'.[69] In other words, much of derivational morphology is irregular from a semantic point of view and should not be dealt with in syntax. Rather, in order to classify relationships like the one between *destroy* and *destruction*, Chomsky suggested that a theory of the lexicon be constructed with the help of lexical redundancy rules.

Such a categorization is problematic. It is obvious that there are many such examples with varying degrees of productivity. Furthermore, words, once formed, can persist or change; they can develop semantic idiosyncrasies. Thus, *offering* is to be regarded more as a separate lexical entry rather than as a regular gerundival nominalization of *to offer*. This means that words, from an incalculable point on, are no longer formable by a simple algorithm of any generality.

Arising from Chomsky's remarks, several hypotheses were developed in order to cope with the problems posed by derivational morphology. The first response was what has become known as the Strong Lexicalist Hypothesis.[70] This excludes all morphological phenomena from syntax. This theory has serious shortcomings, though, as it means 'that the syntax cannot relate *some* and *any* and that inflection, if it is referred to in the syntax, must be handled by some sort of filter.'[71] This filter has been difficult to specify, and Aronoff developed a milder version of the approach known as the Weak Lexicalist Hypothesis. This does not claim that derivational processes are always irregular or that the semantics of the results of these processes are always idiosyncratic. It is a significant step forward compared to earlier work because it excludes from the syntax not only irregular derivational phenomena (like *destroy – destruction*) but *all* derivational phenomena, whereas inflectional morphology remains firmly embedded in the syntax/phonology interaction. This theory has the advantage that it can cope with *offering* as well as with *destroying* which are both regarded as lexical entries.

[69] Chomsky (1970) 189.
[70] See Jackendorff (1972).
[71] Aronoff (1976) 9.

However, it has also been argued that at least *some* derivational affixes are syntactic.[72] The argument here is that since word formation processes take syntactic constituents as their inputs and since the parts of the word formed by the process bear some kind of syntactic relation and also respect principles of syntactic well-formedness, the whole process should be regarded as syntactic. This is especially clear in the case of compounds, which provide the interface between morphology and syntax *par excellence*, but is also found in affixation.[73]

Problems for the Weak Lexicalist Hypothesis come from another corner too. The weak-lexicalist 'split morphology' hypothesis (inflection is syntactic/phonological, derivation basically lexical) proposed by Aronoff and others has come under attack in more recent times. Traditionally, the main arguments for separating the two are the following:

(a) Derivation typically leads or at least can lead to idiosyncratic semantics whereas inflection does not. However, it has long been shown that inflection can show semantic idiosyncrasies as much as derivation can.[74] Thus, in a limited number of Russian nouns, the instrumental case can be used to convey the notion of 'during': *leto* 'summer' : *letom* 'during the summer *den*' 'day': *dn'om* 'during the day'. However, words like *god* 'year' or *sreda* 'Wednesday' cannot be used in the instrumental with such a meaning.

(b) Inflection is paradigmatic while derivation is not. This, too, has been challenged.[75] Szymanek draws attention to the formation of derivational adjectives from nouns in Polish. In order of increasing productivity and generality these are:

1. palatalization: *jagnię* 'lamb' (stem *jagnięt-*) → *jagnięc-y* 'of a lamb'; (*-y* is the masc. nom. sg. ending)
2. palatalization + *-an-*: *ziemniak* 'potato' → *ziemniaczan-y* 'of a potato';

[72] See in the first instance Fabb (1984) 38 f., followed by Sproat (1985), Roeper (1987), (1988), Baker (1988), and Drijkoningen (1992).

[73] See in particular Drijkoningen (1992).

[74] See Halle (1973).

[75] See Szymanek (1985) 141 ff.

3. *-i-*: *żaba* 'frog' → *żabi* 'of a frog';
4. *-n-*: *szkoła* 'school' → *szkoln-y* 'school-';
5. *-sk-*: *uniwersitet* 'university' → *uniwersiteck-i* 'of a university';
6. *-ow-*: *dom* 'house' → *domow-y* 'of a house'.

The choice of suffix is not free but is governed by morphology and phonology, and only one formation is possible from any given root. It would appear that the suffixes form a disjunctively ordered set. For example, suffix 1 is characteristic of words whose stem ends in *-ęt-*but there is a semantic component here as well as these stems are typical for the names of young animals. By contrast, all words formed with the suffix *-(i)ak* will form relational adjectives with the help of suffix 2. However, if a word is formed without any recognizable suffix, i.e. in the case of synchronic root nouns, suffix 6 is the default choice. Szymanek explicitly argues, therefore, that this aspect of derivational morphology is governed by the Elsewhere Condition;[76] as this means a very high degree of both regularity and productivity, Szymanek speaks of a *derivational paradigm.*

This point may be of considerable importance in the context of 'Caland's Law' as well. The choice of suffix for the base adjective is partly governed by phonology as roots containing **-u-* will not form a u-stem adjective.[77] The traditional doctrine also has it that these adjectives have a form in **-i-* when they are used as first members of compounds (which one might even describe as a category-neutral item) and, importantly, nominalizations ('abstract nouns') in **-es-/-os*, e.g. Greek *βαρύς* 'heavy' : *βάρος* as we have seen. This can be contrasted with non-Caland adjectives such as *κοῦφος* 'light' which has *κουφότης* as its nominalization. The exact state of affairs for the parent language may be irrecoverable and we shall concentrate on Greek which arguably provides the most extensive evidence for 'Caland's Law' anyway. Even if only a section of Caland's Law can be shown to be operational it could provide the best evidence yet for a derivational paradigm and thus make a significant contribution

[76] This condition in effect means a systematic disjunctive ordering, with the more special rule pre-empting the general rule. For a discussion see Spencer (1991) 109 ff.

[77] The sole (but old) exception is the word for 'wide', **h₁uru-*, Greek *εὐρύς* = Skt. *urú-*.

as to how word formation should be viewed in general linguistic terms.

1.14 CONCLUSION

Research into s-stems is thus multi-faceted, and different approaches can be taken to achieve different ends. It will have become clear that a proper evaluation needs to combine the descriptive approach à la Risch with the historical and semantic approach taken by, e.g. Chantraine and Stüber. The Greek data must be assessed in its historical, authorial and stylistic context to ascertain its value before possibly using it for and testing it against new theories and hypotheses that have been developed in PIE and generative research in recent years.

In a sense, though, the historical component has priority here. The morphological properties and semantic characteristics of the s-stem formations changed considerably in the shift from PIE to Greek, and in Greek within the historical period considered. Each type of s-stem (nouns in *-ος*, *-ας*, *-ως* and adjectives in *-ης*) needs to be assessed separately to define the type of development that has taken place, evaluate the dynamics of certain groups and to describe the changing place of s-stems in Greek word formation. It is thus important to look at suffixes and derivational processes in the first place. But individual words also need to be studied as morphology is typically much more 'messy' than, say, phonology. The phrase 'poetic formation' or 'authorial licence' is sometimes used here – arguably, this means acknowledging the existence of words not formed according to familiar rules. We thus have to find either different rules or a good philological reason for the existence of certain formations, meaning that not all actually existing words have been created by definable rules.

At the same time, the s-stem formations influence each other in a variety of ways; collectively and individually they also develop certain ties with other formations. Here, then, a combination of the morphological and semantic approach is of particular importance. Not all formations behave alike, of course; the aspects looked at here, the PIE background, the morphology and semantics of the formation under consideration, the links between the various types of s-stems

and the interaction between them and other derivational categories, will all receive a different degree of emphasis.

The history of research into the topic also shows very clearly that a cautious approach is needed, avoiding both the Scylla of Pan-Indo-Europeanism that sees all forms and patterns of derivation as inherited from the parent language and that would not hesitate to argue that everything ill-understood must be a relic from ancient times, as well as the Charybdis of Pan-Hellenism that overrates the productivity and dynamics of the formations in the Greek language. The ship needs to be held on a steady course as established by people like Parmentier, Risch, and Chantraine to name but a few.

2

The Neuter S-stem Nouns

2.1 INTRODUCTION: THE NEUTER S-STEM NOUNS AS AN INHERITED CATEGORY

The neuter s-stem nouns constitute one of the best established word formation categories in the Indo-European languages and it is certain that they are deep-rooted in the parent language itself. This is clear not only from their peculiar ablaut pattern which recurs in no other stem class (see section 2.3 below) but also by the great number of word equations across the individual languages. Thus, to give just a few examples, the following can be confidently reconstructed:

(a) **ĝenh₁os* 'stock, family', cf. *γένος*, Lat. *genus*, Skt. *jánas-*, probably also Arm. *cin*;
(b) **nebʰos* 'cloud, sky', cf. *νέφος*, Skt. *nábhas-*, Av. *nabah-* (neut. pl.), Hitt. *nēpiš*, OCS *nebo* etc.
(c) **k̂leu̯os* 'word, fame', cf. *κλέος*, Skt. *śrávas-*, Av. *srauuah-*, OIr. *clú*, OCS *slovo* etc.
(d) **pleth₂os* 'breadth, width', cf. *πλάτος* (with *α* for *ε* after the adjective *πλατύς*, see below), Skt. *práthas-*, Av. *frajah-*, MoW. *lled*.

Apart from this very frequent 'normal' type, there may be a much less common second type, found only in Indo-Iranian and Greek and characterized by the zero grade of the suffix in the nominative/accusative singular following a root-final **h₂*. The only word equation is *κρέας* 'flesh, raw meat', Skt. *kravíḥ* 'idem' and even this has been doubted though no convincing alternative explanation has been put forward as yet. This class of nouns poses many problems and shall be dealt with further below in section 2.8 but they will be mentioned in the following discussion where relevant.

In their indispensable index, Buck and Petersen list *c.*400 nouns in -ος and thirty nouns in -ας. This list must now be somewhat enlarged principally because of the Mycenaean data.[1] According to my count, about 117 s-stem nouns are attested as early as Homer. More striking still is the distribution of the smaller type in -ας: no fewer than 17 of the 30 nouns are found in this early text.

According to the traditional opinion,[2] the neuter s-stem nouns constitute a class that had ceased to be productive in Greek early on and that contained a great number of old words. Yet, we shall see that in specific areas and under certain conditions the s-stem nouns remained very much an open category.

In what follows, the PIE background of these nouns shall briefly be assessed, giving due regard to problems concerning their inflection and derivation. The conditions under which new s-stem neuter nouns could be formed will then be determined. In keeping with the aim throughout this book of looking at morphologically and, wherever possible, semantically closely defined classes of words in the context of the language system as a whole, the most important suffixes competing with the formations in -εσ-/-ος will be examined. In this way, we shall arrive at a better understanding of their semantics and their position in Greek word formation. To this end, our discussion of morphology and semantics will be intertwined. On the other hand, the reader will look in vain for a detailed discussion of the etymology and semantics of every single s-stem noun. This is not the aim of this work and space is far too limited even to attempt such a task. Individual cases will be dealt with only if they serve to illustrate a certain mechanism of word formation and/or if they belong to a definable subgroup of s-stem neuter nouns.

2.2 THE DERIVATIONAL BASES OF NEUTER S-STEM NOUNS IN PROTO-INDO-EUROPEAN AND GREEK

As even the few examples in 2.1 make clear, the derivational basis for s-stem nouns in Indo-European is quite heterogeneous, and to say that the s-stem nouns are 'abstract'[3] is at the very least insufficient.

[1] See Ruijgh (1983), Bartoněk (2003) 260 ff.
[2] See Chantraine (1933) 414.
[3] Cf. e.g. the title of Höfer's 1984 book.

Some of the nouns (cf. **ĝenh₁os*) can be described as deverbative since they fulfil the role of a verbal noun. Others, like **pleth₂os*, have very strong connections to adjectives or, perhaps more precisely, to so-called primarily adjectival roots. Some nouns, like **nebʰos*, belong to roots for which verbal forms do not exist or are secondary,[4] even though the same root can yield morphologically different, yet semantically similar, nominal derivatives, cf. e.g. Lat. *nebula*, Germ. *Nebel* 'fog' < **nebʰ-lo-*, Skt. *abhrá-* 'cloud' < **n̥bʰ-lo-/-ro-*.

As far as the deverbal derivation is concerned, it is impossible to establish any link between s-stem nouns and specific Indo-European present or aorist forming suffixes; nor do aspectual properties of the root (telic vs. atelic) seem to play a role in determining whether a noun of this type can be formed or not.[5] Thus, from **ĝenh₁os* or **h₂eid̯ʰos* (αἶθος 'heat', Skt. *édhas* 'burning wood') no conclusion can be drawn as to the formation of the present or the aorist of the respective verbs in the parent language (or indeed in the individual languages). The only verbal suffix that has a strong – i.e. seemingly systematic – link with **-es-/-os* is, of course, the stative suffix PGreek **-ē-*.[6]

This leads directly to the question of the 'deadjectival' derivation. Since the publication of Parmentier's 1889 book it has been well known that s-stem nouns occur alongside 'Caland' adjectives, i.e. adjectives formed essentially with a suffix **-u-*, **-ro-*, **-no-*, **-lo-*, **-mo-*, **-i-* or **-e/ont-*.[7] It is interesting to note that the converse is also true. With very few exceptions, s-stem nouns are linked with Caland adjectives only, rather than with simple thematic adjectives. Thus, next to an adjective **neu̯o-* 'new' there is no evidence for a noun **neu̯os*. The most prominent exception to this rule is **leu̯kos* 'light' (Skt. *rocas-* only in compounds, Av. *raočah*) which is found beside

[4] See *LIV* 448 n. 1 and in particular Nussbaum (1976) 105 f.; verbal forms are found only in Greek *συννέφει* 'clouds over', *ξυννένοφε* 'is overcast' and Av. *aiβi.naptīm* 'wetting', *napta-* 'wet'. They look very much secondary and they certainly diverge in meaning.

[5] The semantics of the nouns, however, may be affected by and indeed depend on the nature of the verb, see Stüber (2002) 217 ff.

[6] See above and further Watkins (1973), Tucker (1990), and the 2003 Cambridge Ph.D. dissertation by Matthew McCullagh.

[7] See Nussbaum (1976) 44 ff. for the PIE state of affairs. See also further below for a slightly modified view of the matter.

λευκός 'white'. However, as the s-stem is attested as such only in Indo-Iranian (but cf. λύχνος if < **luks-no-*) and the adjective is only found in Greek (comparable thematic formations are o-grade nouns, cf. Early Lat. *loucos*, Lith. *laũkas*), it is probably erroneous to reconstruct both the s-stem noun and the thematic adjective for PIE. The most likely scenario, then, is that the thematic (verbal) adjective **leu̯ko-* and the root noun **luk-* (Lat. *lūx, lūc-is*, Skt. *rúc-*) are inherited. If Skt. *rúśant-* 'shining' also belongs here[8] (in spite of the palatal nature of the velar) then within Sanskrit the root forms a 'Caland system'. This distribution is highly remarkable and it is hardly compatible with the view that the entire phenomenon is a mirage.[9] But, as we have seen already, it is true that a proper functional explanation is still wanting.

The two derivational bases need not be mutually exclusive. Thus, OCS *čudo*, Gk. κῦδος 'fame' stand beside a verb 'praise' and an adjective κυδρός 'famous' respectively. It seems impossible to establish whether either of these derivational sequences is primary and it may not even be a reasonable question to ask. Nor indeed can we exclude the possibility that the two nouns are independent formations.[10]

The situation in Greek regarding the derivational basis of s-stem nouns is remarkably similar to that in PIE outlined above. The most notable fact is that if a noun in -ος stands beside an adjective, in Greek, this adjective will almost unfailingly be of the 'Caland' type. This even holds true for at least one adjective without an established etymology: αἶπος 'steep height' : αἰπύς 'steep'.[11] If ἐχθρός 'hostile,

[8] See *EWAia.* s.v. (approving).

[9] Perpillou (1974) 106: 'la loi de Caland-Wackernagel [...] pourrait [...] résulter d'une sorte d'illusion d'optique.'

[10] One of the main aims of de Lamberterie's 1990 book is to show that in the last instance, all inherited u-stem adjectives are based on verbal roots. More precisely, the paradigmatic place for these formations was the perfect participle (27 f.). Accordingly, the perfect participle in *-*u̯os-* is an enlarged form (an idea already found, e.g., in Brugmann (1879) 46 f. and Benveniste (1935) 85 f.). According to de Lamberterie, for the great majority of the Greek adjectives in -υς a verbal link can indeed be established (951 ff.). The evidence is clearly difficult to interpret, all the more so given that the suffix would have to be a very old one. Suffice to say that, with the exception of **su̯eh₂d-* (cf. *LIV* 606) cross-language verbal stem equations are hard to find.

[11] See de Lamberterie (1990) 302 ff.

hated' is indeed to be derived from **eks-tro-* we even have a *terminus post quem* for 'Caland' being an active mechanism of word formation: alongside ἐχθρός, we find the derivatives ἔχθος (*Il.*+), comparative ἐχθίων (A.+), superlative ἔχθιστος (*Il.*+). An s-stem noun alongside a form **eks-tro-* would primarily be unexpected. It would seem, therefore, that when **eks-tro-* had developed into ἐχθρός, a development which is likely to be post-Mycenaean on the strength of the preservation of interconsonantal -s- in *ai-ka-sa-ma* 'tip of spear' vs. αἰχμή, it was analysed as ἐχθ-ρός. In other words, a secondary root ἐχθ- was created which was interpreted as a Caland root because of ἐχθρός and thus was capable even in post-Mycenaean times of yielding the other Caland forms ἔχθος, ἐχθίων, etc. If this is correct, it does support the view, whatever the original function of the Caland suffixes in PIE, that a simple derivational mechanism along these lines existed early in the history of the Greek language.

Only in three cases do we find a neuter noun in -ος alongside a seemingly simple thematic adjective: κάλλος 'beauty' (*Il.*+) vs. καλός 'beautiful' (*Il.*+), στένος, Ion. στεῖνος 'narrow space; distress' (A., *Il.*+) vs. στενός, στεινός 'narrow' (S., Hdt.+) and στέρφος 'skin, hide' (A.R. +, rare) vs. στερεός 'firm, solid' (*Il.*+). All three adjectives have strong 'Caland' connections. καλός (Boeot. καλϝός) could go back to a u-stem adjective[12] or, less likely, contain a ready-made suffix *-*u̯o-*. Compositional καλλι- is more significant although the gemination in this form as well as in the noun is still ill-understood. στενός, στεινός very probably is a secondarily thematized u-stem adjective (see below section 2.5). The link between the rare στέρφος and στερεός is, for both formal and semantic reasons, more tenuous. If they are indeed cognate, στερεός (also στερρός E.) might well go back to a u-stem adjective as well[13] and it is at least possible that the personal name *te-ru-ro* KN Dd 1380 is to be read as Στέρυλος. Other 'Caland' forms are στέριφος 'firm, solid' (Th.+) and, possibly, στέρνον 'chest' (*Il.*+). στέρφος would then contain the marginal[14] 'Caland' suffix *-*bʰo-*

[12] See Meißner (1998*a*).

[13] Probably a thematization from, e.g., the neuter plural *στερέα with concomitant change of accent according to the strong tendency to avoid paroxytonesis in words consisting of three shorts, the rare type ὀλίγος. See also Halle (1997) 304.

[14] Following the terminology established by Nussbaum (1976) 6.

(cf. ἄργυφος) contaminated with the nominal s-stem. Again, this raises the question of the productivity of the derivational sequence or implication 'Caland' type adjective → neuter noun in -ος. We shall see below that while this implication was still a possibility, it is not or no longer still imperative in historical Greek.

As to the deverbative derivation, there is no link of any sort between the nominal suffix -εσ-/-ος and any tense marker in the verb in Greek. Thus, σίνος 'hurt, mischief' stands beside σίνομαι 'I damage'; σκάφος 'digging, cave, inner part of a ship' stands beside σκάπτω.

In addition to these groups there is also a substantial number of s-stem neuter nouns without an established etymology. Many of them are morphologically and lexically isolated and may indeed be loanwords, such as κῆτος 'sea-monster, whale' (*Il.*+), πέλαγος 'sea' (*Il.*+), ζῦτος 'an Egyptian type of beer' (Hp.+). It even seems that entire 'lexical fields' are represented by neuter s-stem nouns: words for weapons, all attested from Mycenaean or Homer onward such as ἔντεα 'fighting gear', ἔγχος 'spear', ξίφος, Myc. nom. du. *qi-si-pe-e* PY Ta 716 'sword' are without established etymologies and are usually regarded as loanwords. Thus, despite being allegedly an unproductive category, the s-stem nouns were still strong enough as a class to absorb foreign words although they might conceivably have been integrated into the thematic stem class.

Apart from such primary derivatives, i.e. s-stem nouns where the suffix is attached directly to the root, Greek possesses a number of nouns formed with complex s-stem suffixes, i.e. suffixes of the structure -Cεσ-/-Cος. Examples of such suffixes are τέμενος 'land cut off/set aside' or μέγαθος/μέγεθος 'greatness'. The great majority of these formations show a suffix -νεσ-/-νος. As comparable formations exist in related languages, notably Latin and Sanskrit (cf. e.g. *fēnus* 'interest, emolument', Skt. *ápnas-* 'wealth, good, remuneration'), some scholars have reconstructed a suffix *-*nes-/-nos* for the Indo-European parent language[15] although reliable word equations between any two Indo-European languages are very hard to come

[15] Cf. Beekes (1969) 222 n. 109 'it is certain that -*nos*- was a suffix of the proto-language.'

by.[16] In view of this lack of cross-language agreement, Manessy-Guitton (1972) tried to show that there was, in fact, no such PIE suffix and that a secondary extension of pre-existing n- or no-stems was more likely.[17] In such cases, then, **-es-/-os* would be very much a secondary suffix. We also find, in Greek and other IE languages, scattered relics that have been interpreted as s-extensions of pre-existing i- and u-stems, e.g. κόνις, -ιος fem. 'dust', an original i-stem as is clear from its inflection in Greek as well as from its root vocalism, vs. *κονι-σ- in the unique formation κονίω < *κονι-σ-i̯ω.[18] As the o-grade cannot be original in the s-stem, this must be a secondary formation. Lat. *cinis*, *cineris* masc. and fem. would at first glance suggest that the i-stem was simply extended by an s-suffix[19] but the concomitant existence of *cinus*, *cineris* neut. 'ashes' makes it more likely that we are dealing with contaminations of i- and s-stems. Such formations are too rare to be called systematic and will be dealt with here only in the context of Greek αἰεί, αἰές in section 3.4.

Be this as it may, it raises an interesting point: in Greek, the first element of a complex s-stem suffix is in itself always a Caland suffix. In other words, it appears likely that one Caland suffix was extended by another one.[20] Apart from **-no-*, we find **-d^{h}o-* as in

[16] The old connection between Skt. *ápnas-* 'good, remuneration' and ἄφενος 'wealth, possession', formally very difficult, may have to be given up, see Balles (1997) and, above all, Willi (2004). Skt. *réknas-* 'inheritance, wealth' has been connected to OHG *lēhan*, ON *lán* (o-stem), OE *lǽn* (i-stem), see, for example, Meillet (1908/9) 256. There is no direct evidence for the s-stem inflection and it has been assumed only because a- and i-stem forms alternate that would reflect the ablaut **-os* : **-es-* found in the PIE paradigm of these nouns. The view that this points to an old s-stem is based on an old theory first established by van Helten (1910) 502 that has often been repeated since (see most recently *LÄGL* ii. 155, Bammesberger (1990) 72 and 147) but in fact van Helten himself later gave up this view and it is clear that we are dealing with a Germanic problem and not with an inherited s-stem: the Germanic forms are based on the o-grade of the root, PGerm. **laih^{w}na-* and **laih^{w}ni-* which did not present a problem in van Helten's time but now constitutes an insurmountable obstacle for regarding this as an inherited s-stem formation. Also, it is interesting to note that the only probable inherited formation in **-nos-* is an animate s-stem, the word for 'moon, month' (see section 3.4).

[17] This seems to have been proposed first by Aufrecht (1853) who took the *-ν-* of the Greek formations in question to be identical with the (masc. and fem.) suffix Skt. *-an-*, Lat. *-en-*, see section 1.2.

[18] See Tucker (1990) 390 f.

[19] See Nussbaum (1976) 143 ff. for this process.

[20] In principle, this phenomenon is well known, cf. the adjectives in *-ιϝο-*, *-ιμο-*, *-υρο-* etc.; see Risch (1974) 71, 99, 105 for the Homeric evidence.

μέγαθος/μέγεθος, giving excellent support for Nussbaum's hypothesis, argued almost entirely on the basis of evidence from Latin, that *-*d*^{h}*o*- was a marginal Caland suffix.[21] The same holds true for the rare *-*b*^{h}*o*-[22] (cf. ἄργυφος), especially if the connection between στέρφος and στερεός (see above) is correct. S-stems—in Greek at least—never form complex suffixes with suffixes traditionally described as non-Caland, e.g. suffixes like -τρο-, -κο-, -τ-, -δ-, -μεν-/-μν- etc. Thus, suffixes like *-τρεσ-, *-κεσ-, *-τεσ-,[23] *-δεσ-, *-μνεσ- do not exist. If one were to push this analysis further, it might be suspected that the Indo-European comparative suffix *-*i̯os*- and the perfect active participle suffix *-*u̯os*- too are mere Caland extensions of original i- and u-stems,[24] but their ablaut patterns are different from the standard pattern of s-stem nouns.

The reason for this additive way of forming complex suffixes is not clear. It has been observed that in some cases the s-stem noun and the present stem of the verb share the same marker, thus we find -ν- in τέμενος as in τέμνω or -θ- in πλῆθος as in πλήθω.[25] However, in the majority of cases such a link cannot be established, cf. κτῆνος vs. κτάομαι, ἕσθος (*Il.*+) vs. -έννυμι, ἕννυμαι, also ἕδαφος 'foundation' vs. ἕζομαι and non-verbal formations such as μέγεθος, στέρφος. In very rare cases the stem is similar but the root gradation is different, cf. ἔρνος 'young sprout, shoot, offspring' vs. ὄρνυμι if the two are related at all.[26]

Such formations can be explained in two ways that are not mutually exclusive: they may be contaminations of forms within the same inflectional paradigm, especially in the case of heteroclitic nouns, or

[21] See Nussbaum (1976) 90.

[22] See Nussbaum (1976) 87.

[23] A very few formations in *-*tes*- are found in a number of languages, but none of them seems inherited; rather, they may be contaminations or extensions of existing nouns. Thus, Skt. *srótas*- 'stream' (root *sru*-) is clearly dependent on *sravát*- fem. 'stream', and compounds in -*srút*- 'flowing' (all RV+).

[24] See also n. 10 above.

[25] See Chantraine (1933) 420, Höfer (1984) 21. In cases like βρῖθος–βριθύς–βρίθω the -θ- belongs, from a Greek point of view, to the root. It seems very unlikely that these nouns were derived directly from the present stems. If this were so, we would expect, e.g., *τέμνος.

[26] This etymological connection, though semantically flawless, can only work, of course, if Rix's Law is not actually valid; see further Meißner (1998*b*).

contaminations of different, semantically very close, formations. The former can be illustrated by Lat. gen. *iecinoris* which presumably is based on *iecur* (or the already innovated *iecoris*) and **iecinis*, the latter e.g. by Gk. *ὀνείρατα υ* 87 which is a compromise between *ὄνατα* (nom. sg. *ὄναρ*) and *ὄνειρα* (nom. sg. *ὄνειρος* and *ὄνειρον*). As we are still relatively ill-informed about the scope of heteroclitic inflection in PIE, apart from the wide-spread r/n-stems, it is difficult to judge the extent to which contaminations of the type *iecinoris* play a role here. On the whole, the second explanation appears more plausible. More specifically, it seems tempting to explain the suffix **-nes-* as a contamination of semantically similar derivatives, cf. *τέκνον* and *τέκος* 'child'. The former would be a nominalized verbal adjective 'the born one', the latter a straightforward nominal derivative. Thus, *τέμενος* could be a contamination of **τέμενον* (< **tm̥h₁-no-* with substantival accent, cf. *θάνατος*) and **τέμος* etc. This would also explain why, despite the fact that *-ρο-* and *-νο-* seem so similar (cf. *κυδρός*, semantically indistinguishable from *κυδνός*), there is no trace of a suffix **-ρεσ-*: **-ro-* is not normally grammaticalized as forming verbal adjectives which could easily have been nominalized. It also ties in well with the fact that 'deadjectival' s-stem nouns (*βένθος*, *γλεῦκος*, *βάρος* etc.) are never formed with a suffix **-nes-*.[27]

If the explanation proposed here is correct in principle, then they would diverge from cases like *μέγεθος*, *στέρφος* etc. Here, as in other cases, a contamination of competing suffixes is also conceivable but more difficult to show.

2.3 HISTORY AND PREHISTORY: THE INFLECTIONAL PARADIGM OF NEUTER S-STEM NOUNS

A Survey

From the Indo-Europeanist's point of view, Greek is of particular importance as it is the most instructive Indo-European language when it comes to the reconstruction of the s-stems as a class and of

[27] This does not mean that all formations in **-nes-* have to be explained in this way. In particular, the s-stem *λῆνος* 'woll' is not easily understood. In all other languages where it is attested the word is an ā-stem (Lat. *lāna*, Lith. *vìlna*, Skt. *ū́rṇā* etc.); for an attempt at an explanation see section 2.5.

their morphology. This is due chiefly to two reasons. For a start, Greek, together with Old Church Slavonic and, less obviously, Celtic, has fully preserved what is commonly assumed to be the late Proto-Indo-European pattern(s) of suffix ablaut of the neuter s-stem nouns, the 'main type' showing o-grade in the sg. nom./acc. and e-grade in all other cases, cf. nom./acc. *γένος*, gen. *γένεος* < **ĝénh*$_1$*-os*, **ĝénh*$_1$*-es-os*. This is exactly paralleled (disregarding the ablaut grade of the ending) in OCS *nebo*, gen. *nebese* 'heaven' < **néb*^{h}*os*, **néb*^{h}*es-es*. The Celtic evidence points to the same kind of ablaut. Evidence from Continental Celtic is scant but in OIr. the neutral quality of the final consonant indicates very firmly the former presence of a non-palatal vowel while the gen. and dat. show the expected *-e-*, cf. *nem* 'heaven', gen. *nime*.[28]

The other IE languages, insofar as s-stem nouns are preserved and discernible at all, do not provide such a neat picture. Normally, the ablaut of the suffix is levelled in favour of one of the grades, mostly the e-grade. This is attested most clearly in Anatolian[29] even though the number of examples is very small, cf. Hitt. nom./acc. *nēpiš* 'sky' < PAnat. **nébes*.[30] In Germanic and Baltic the equivalent process is regularly found but tied to a change in stem class, cf. Goth. nom. *riqis*, gen. *riqisis*, 'darkness',[31] showing a transfer to the productive a-stems.[32]

It is commonly assumed that in Baltic in general this type, like most inherited consonantal stems, was transferred to the i-stems with generalization of the e-grade of the stem as seen in Lith. *debesìs* 'cloud', with the original s-stem inflection still visible in the gen.pl.

[28] Cf. *GOI* 215 f.

[29] See now Rieken (1999) 183 ff. for a full discussion of the Hittite s-stems and their prehistory, and Starke (1990) 95 ff. for the Luwian evidence.

[30] Melchert (1994) 93, 101. Rieken (1999) 187 f. considers the long root vowel and the accentual paradigm to be of PIE age (nom. sg. **neb*^{h}*os*, gen. **neb*^{h}*-es-os*); however, other explanations are conceivable and should not be dismissed, cf. e.g. Hajnal (1995) 63 and in particular Tremblay (1996*b*) 60 n. 102.

[31] The original o-grade of the suffix may still be seen in the Finnish *lammas*, a very early loanword from PGerm. **lamb-az* (< **-os*).

[32] This process probably started in the majority of cases from the gen. sg. where **-es-e/os* led to PGerm. **-es*(*s*) > *-is* on which the a-stem paradigm would have been built. However, the rarer type *weihs* may well conceal an original nom. in **-os* > PGerm. **-az* > *-s*; from there they would have been transferred to the a-stems. See further Seebold (1970) 307 and Boutkan (1995) 266 f.

debesḗ. This transfer is held to be due at least in part to the loss of the neuter gender.[33] While this is a plausible scenario, it should be emphasized that the fate of these nouns in West Baltic, which has preserved the neuter to a considerable extent, is unknown.

A very late generalization of the o-grade is found with certainty in the remodelled Latin type *tempus*, *temporis* while the more frequent 'normal' type *genus*, gen. *generis* is ambiguous since both PItal. **geneses* and **genoses* would have led to *generis*.[34] In Indo-Iranian, the ablaut variations have become largely obscured as a result of the merger of **-e-* and **-o-* in *-a-*,[35] though occasionally we find a paradigmatic contrast velar : palatal in the strong and weak cases respectively. Thus, Gatha-Av. nom./acc. sg. *aogō* 'power' < **h*$_2$*eu̯g-os* contrasts with inst.sg. *aonjaŋhā* < **h*$_2$*eu̯g-es-eh*$_1$, showing clearly the reflexes of the old ablaut. In general, however, either the velar or the palatal form has been generalized, as evidenced by the Sanskrit equivalent of this word, Ved. nom./acc. sg. *ójas*.

In Armenian, PIE s-stems have regularly become o-stems, cf. *get*, gen. *getoy* 'river'. This change is certainly due to the ambiguity of the nom. sg. in this language[36] and particularly understandable given that it has lost all gender distinction.

The situation in Tocharian is unclear. The original ablaut pattern is obscured by complex phonological and paradigmatic developments. However, **-os* may still be seen in the 'ending' B *-e* (corresponding to A -0), e.g. *cake* 'river' < **tek*^{w}*-os*.[37] Finally, the fate of the s-stems in Albanian is entirely unclear.

Hence, Greek is among the very few languages where phonological developments or paradigmatic analogies have not clouded the picture. It is of particular importance in another respect, too, as Greek is the only language, apart from the Indo-Iranian group, to display the much rarer type in *-αϛ*, IIr. **-is-* (Skt. *-iṣ-*, Av. *-iš-*) < **-h*$_2$*s*, cf. *κρέαϛ*, Skt. *kravíḥ* 'flesh'. This type is more likely to be a relic from PIE rather

[33] See Stang (1966) 224.

[34] See also Meiser (1998) 68, who does not consider, however, a PItal. form **genoses*. But *ahēnus* < **aȷes-no-* would seem to suggest that it is indeed the e-grade that underlies *generis*.

[35] *AiGr.* III 280.

[36] See now Olsen (1999) 44 ff.

[37] Cf. van Windekens (1976) 249, Ringe (1996) 74.

than a specific Graeco-Indo-Iranian innovation (see section 2.8 at the very end of this chapter). Indo-Iranian *-is-* may also go back partly to PIE or PIIr. *-*is*-, thus leaving Greek to provide the main evidence for the analysis of nouns in *-*h*$_2$*s*.

The Standard Pattern of Inflection: Ablaut Variations in the Root and Suffix

The reconstruction of the inflection of the 'main type' is something of a *cause célèbre* of Indo-European paradigmatic reconstruction. In his important 1975 article, Schindler reconstructed this 'main type' of neuter s-stem nouns as belonging to the 'proterokinetic' accentual class. This means that at an earlier stage of PIE the original paradigm would have shown e-grade (and word accent) of the root and zero grade in the suffix (schematically R(é)—S(z)) in the nominative/accusative singular whereas the other cases would have had zero grade of the root and the ending (E) but e-grade (and accent) of the suffix (R(z)—S(é)—E(z)). However, already in the parent language three developments took place that are duly reflected in Greek:

(a) The elimination of the root ablaut in favour of a generalized e-grade. To be sure, other root gradations are found in Greek and these will be returned to later.

(b) The introduction of an o-vowel in the suffix in the singular nominative/accusative. Schindler himself regarded the vowel insertion as a morphological process in order to prevent a paradigmatic alternation between monosyllabic and trisyllabic word forms.

(c) The introduction of the o-grade in the ending of the genitive singular. This also happened in many other stem classes and can be considered trivial.

As a result of these three common Indo-European innovations the original paradigm must have looked very similar to the antecedent of Greek nom. *νέφος*, gen. *νέφεος*, i.e. < **neb^h-os*, **neb^h-es-os*. Of course, several loose ends remained. Schindler himself left open the important question as to why *-*o*- rather than the paradigmatically established *-*e*- is found as the suffix vowel in the singular

nominative/accusative.[38] He also noticed that not all neuter s-stem nouns easily fit this analysis since equations like Skt. *ā́gaḥ* 'sin, mistake', Greek *ἄγος* 'curse' or doublets such as Greek *μήδεα* and *μέδεα* 'plans' seem to point to an ablaut alternation *-*ē*- : *-*e*- in the root. Nevertheless, for the great majority of forms Schindler's reconstruction seemed entirely plausible and it was the unchallenged *communis opinio* until recently. The discussion was then reopened in the mid-1990s.[39] Tremblay observed that in some instances neuter s-stems of the shape **CeC-os* are accompanied by another stem in **CóC-s* or **CéC-s*, i.e. forms that would point to an 'akrostatic' paradigm, e.g. nominative singular **h*$_2$*óu̯(s)-s* 'ear' alongside the collective nominative **h*$_2$*éu̯(s)-ōs*.[40] Tremblay regards the latter as inflecting according to the holokinetic pattern (genitive **h*$_2$*u(s)-s-és*) while the singular of at least a good number of s-stems was originally akrostatic. The latter would then account for the long vowel, e.g., in *ῥῆγος* 'rug', the former for the zero grade found in *χρυσοραγές· χρυσοβαφές*. The o-vowel of the nominative singular would be a *forme croisée* of the singular (or rather singulative) and the collective: **-os* would have been morphologically shortened when it had become singular and neuter. Tremblay's approach is attractive in principle as it tries to explain the alternations in the root as well as in the suffix in the same way. However, all the examples can be interpreted differently[41] and the data serving as the basis for such observations are rather limited and the reconstruction difficult to motivate. It is also uneconomical as one still has to admit the existence of at least *some* proterokinetic s-stems like **men-s*. There are also considerable methodological implications. As soon as the concomitant existence of akrostatic, proterokinetic and holokinetic forms, all belonging to one paradigm, is admitted, logically, all ablaut grades in root, suffix and ending surface somewhere in the paradigm and one is free to motivate whatever grade is needed for the theory. Yet, despite this wealth of possible forms, the new model still has to operate with a considerable analogical process. On balance, therefore,

[38] Schindler (1975) 266.

[39] See Tremblay (1996*a*, 1996*b*).

[40] Tremblay (1996*b*) 55.

[41] See below for the forms with long root vowel. For the word for 'ear' see now Fischer (1996) 40 ff. and for 'mouth' Rieken (1999) 185 ff.

this approach does not seem preferable to Schindler's reconstruction. Furthermore, it is instructive to note that the same author in the same year[42] interprets the same data in a completely different way, reconstructing a 'mesostatic' paradigm nom. *CeC-ós, gen. *CC-és-E because in the compounds of these nouns, traces of an old root zero grade are found. We shall see in section 4.9 that, while the existence of the zero grade in a very few forms is undeniable, these have nothing to do with neuter nouns.

In order to arrive at a proper evaluation of the different theories proposed it is worth considering the fundamental underlying assumption that there exists a connection between neuter nouns in *-*os* and collective formations in *-*ōs* to an extent that all 'independent' *-*ōs* forms, i.e. all those that are full lexemes in themselves (e.g. the word for 'dawn', *ἠώς*, Skt. *uṣā́ḥ* < **h*$_2$*(e)u̯s-ōs*) are built on neuter nouns in *-*os*. In other words, the termination found in the animate nouns and the paradigmatically established *-*ōs* serving as the plural nom./acc. of neuter nouns in *-*os* as *may* be seen in Old and Young Avestan pl. *manå̊* (in sandhi Young Avestan *manå̊s-ca*)[43] < **men-ōs* vs. sg. *manō* (in sandhi Gatha-Av. *manas-cā*) < **men-os* are axiomatically regarded as monogenetic. It is also commonly assumed that reliable evidence for such a connection between neuter nouns and animate nouns can be seen in the correspondence between neuter *γῆρας*/*γέρας* and Skt. *jarás-* (gender uncertain in RV, in Classical Skt. it is always feminine).

A few points need to be made. First, the entire reconstruction of holokinetic (or amphikinetic) paradigms in *-*ōs* that are supposed to have shaped the inflection of neuter nouns (properly speaking singularia) in *-*os* ultimately hinges on one or two semantically very closely related words, namely 'dawn' and conceivably 'moon, month'. These will be discussed in more detail in the next chapter but it is clear that no neuter noun **h*$_2$*éu̯sos* or **méh*$_1$*nos* is attested alongside the animate formation; there is no connection between the two here. As regards the word 'age', it will also be seen in the next chapter that while the connection between nouns in *-*os* and *-*ōs* seems logical and can be motivated morphologically, the evidence is surprisingly

[42] Tremblay (1996*a*), even going as far as to say '[i]l est donc impossible que les neutres en -*os* soient d'anciens protérokinétiques' (p. 143).

[43] See Hoffmann and Forssman (1996) 155.

weak. In other words, neither of the assumptions is without its difficulties. In addition, in spite of a recent attempt,[44] the motivation for the reinterpretation of a collective neuter plural as basically feminine and in any case as a clearly animate singular is still unclear, and to my mind such a development is implausible.

In sum, it would appear that collective formations can shed very little light on our neuter nouns and the two main problems raised by Schindler's reconstruction still remain unsolved. The alternation between long and short root vowel seems unconnected with the question of the reconstruction of the suffix vowel and will be examined in the next section.

As far as the addition of the suffixal *-*o*- is concerned, Schindler seems to have regarded this as a relatively late process, and he explicitly points out the existence in Avestan of a form *mąz* < **men-s*. However, it is perfectly possible that this was secondarily taken from the compound *mązda*- 'remember' which in turn can reflect either a univerbation of a very old PIE phrasal lexeme **men-s d*^{h}*eh*$_1$- 'put in one's mind' or a young, inner-Avestan compositionally shortened form < **manas da*-. If this sole piece of Avestan evidence can be explained in this way, the suffix vowel *-*o*- could be very old, so old in fact that it might be the result of post-tonal *-*e*- still affected by ablaut (the well known δοτήρ vs. δώτορ- phenomenon).[45] In other words, schematically the remodelling of the s-stem paradigm within PIE may have looked as follows:[46]

(a) nom./acc. **mén-s* : oblique **mn-és*- (Schindler's starting point); this nom./acc. form, without a suffix vowel, is still likely, not just in view of Av. *mązda*- 'remember' but also because of the existence of the type κρέας, Skt. *kravíḥ* < **kreu̯h*$_2$*-s*. It is possible that **mén-s* itself goes back to an even earlier ***mén-es*, i.e. a form older than the deletion of all unstressed **e* phonemes. This would account for the ablaut in the suffix in the first instance;

(b) through levelling of the root and suffix vowels in favour of the full grade we get nom./acc. **mén-es* : oblique **men-és*-;

[44] Fritz (1998). [45] See Güntert (1916/17), Szemerényi (1996) 121.

[46] In fact, this scenario may be oversimplified (though necessary to introduce here). See further section 3.4.

(c) post-tonal *-*e*- > *-*o*-, resulting in nom./acc. **mén-os* : oblique **men-és*-;

(d) columnization of the stress on the root vowel, giving us the familiar paradigm nom./acc. **mén-os* : oblique **mén-es*-.

This reconstruction has been arrived at on the basis of rather general theories concerning accent and ablaut. But it is also worth considering a concrete piece of evidence, the word for 'mouth' which in Hittite shows ablaut of the root, nom. *aiš*, gen. *iššaš*. This is an additional strong argument in favour of Schindler's reconstruction of the paradigm as proterokinetic as, uniquely, the root ablaut is retained here.[47] This need not surprise: it designates a part of the body, and more importantly it could not be connected to a lexical root. There are very good arguments for regarding it as an original s-stem, especially in view of the Anatolian evidence.[48] The Indo-Iranian data is more troublesome, however. In Vedic Sanskrit, the word is attested once in the ablative *āsáḥ* (7,99,7) 'vom Munde aus', otherwise only as a fossilized, adverbially used instrumental *āsá* 'sichtbarlich, vor Munde' (22 times) and in compounds like *anás*- 'mundlos'. Here it manifestly inflects like a root noun; interestingly, *ās*- is always monosyllabic, which fact may lead to a slight modification of Lindeman's reconstruction of the word as **h*$_3$*éh*$_1$*-os*. This might not have existed as such, as the earlier **h*$_3$*éh*$_1$*-s* would have yielded attested **ōs* straightaway; alternatively, **h*$_3$*éh*$_1$*-os* > **ó-os* > **ōs*. In either case, it is clear that already in PIE times this word looked much more like a root noun than an s-stem (into which scenario the oblique stem **h*$_3$*h*$_1$*-és*- also fits very nicely) and the retention of the root ablaut is thus even less surprising.

The Minority Type: Nouns in -α_S and the Role of *-h$_2$-

Before we turn to another and different ablaut variation in the root, it is worth looking at one further aspect of the Indo-European innovations under the Schindler model described above as it is of direct

[47] A further hint in this direction may be constituted by the Skt. infinitives in *-áse* and, perhaps, the Greek infinitive ending *-ειν* (locative in **-en* of an s-stem noun formation?).

[48] See Lindeman (1967) 1188 f., Rieken (1999) 185 f., Stüber (2002) 194 f. and Zinko (2001) 414 ff.

relevance for Greek. This concerns the relative chronology of the syllabification of $^*h_2$, on the one hand, and the introduction of the o-vowel in the nominative/accusative singular on the other. The nouns in *-αϛ* will be discussed in more detail in section 2.8, and I shall limit myself here to a few remarks. Schindler argued that forms like *κρέαϛ* = Skt. *kravíḥ* < $^*kreu̯h_2s$ strongly indicate that at the time when **-C-s* was replaced with **-C-os*, $^*h_2$ had already been vocalized in interconsonantal position at least in final syllables.[49] Indeed, it is very hard to see how else *-αϛ* vs. *-iḥ* could be explained.[50] If the relative chronology established at the end of the last section is correct, it would follow that the vocalization of the laryngeal is even older than the first remodelling—a chronological scenario that might be objected to. However, in the light of some recent research[51] the laryngeal, interconsonantally at least, may better be seen as a weak vocalic segment anyway and 'vocalization' might actually be a misleading term.

This scenario is not without interesting implications. The root for 'wide' is usually reconstructed as $^*pleth_2$-.[52] The laryngeal is clearly seen in Skt. *práthas-* = Av. *fraθah-* 'width', Skt. *pṛ̥thú-* 'wide' and in the paradigmatically isolated feminine formations *Πλάταια* (place name), Skt. *pṛ̥thivī́* 'earth'. Consequently, we might expect the noun to be ***πλάταϛ* (allowing for the routine replacement of the original root vowel $^*e$ with that of the adjective), corresponding to Skt. ***prathiṣ-* as contrasted with the attested *πλάτοϛ*, *práthas-* unless one is prepared to admit a large-scale analogical remodelling of this and other forms. There is clearly an anomaly here. The shape of a root $^*pleth_2$- is, of course, suspect from a phonotactic point of view and **-h₂-* in this instance looks more like a 'root determinant', i.e. historically speaking a suffix with no detectable synchronic function. A closer analysis reveals that **-h₂-* is particularly frequent as a root determinant/suffix in u-stem adjectives. Apart from $^*pl̥th_2u$- the following are attested:

[49] Schindler (1975) 265.

[50] There is no reason to doubt the equation, cf. *EWAia* s.v. The laryngeal in this root is also guaranteed by adjectival formations like Skt. *krūrá-* = Av. *xrūra-* 'cruel, bloody' < $^*kruh_2ro$-, OIr. *crú*, gen. *crau* (neut. u-stem $^*kruh_2$-) 'blood, gore', Lat. *crūdus* 'hard, raw', Slov. *kri* 'blood' < PSlav. $^*krūs$.

[51] See Reynolds et al. (1998) 94.

[52] See *LIV* 486 f. with references.

(a) *$k\underset{\circ}{r}th_2u$- 'strong' in κρατύς, cf. κραται-, κραταιός, Old Lith. *kartus*. The latter two Greek forms are much discussed[53] but in my view best explained as follows:[54] the original feminine *κραταια was remodelled to κραταιή (note that this form occurs only at the end of a line in Homer) from which a masculine κραταιός could easily be formed. κραται- as the compositional form of this adjective, instead of seemingly more regular κραταιο- is explicable by the strong Greek preference for a linking element -αι- (of various origins) which is favoured over -ο- wherever possible and is thus found not only in κλυται-, πυλαι-, κελαι- for κελαινο- etc. but even in comparative forms like γεραίτερος alongside γεραιός etc. Note in particular that the noun Skt. *krátu*- does not have an aspirated stop and thus shows the absence of the laryngeal expected in the noun. In other words, *krátu*- is a nominal derivative from the beginning and not a nominalized adjective.[55]

(b) *$t\underset{\circ}{n}h_2u$- 'thin', Skt. *tanú*-, in Greek only in compounds like ταν*ύ*-φυλλος 'with thin leaves' *Od*+. In historical Greek, only a thematized form ταναός is attested. The linking form is the neut. nom. pl. ταναϝα < *$t\underset{\circ}{n}h_2$-$e\underset{\circ}{u}$-h_2, cf. Myc. *ta-na-wa* PY Sa 793, the only form of the adjective attested in Mycenaean and thus allowing no decision as to whether the adjective was still a u-stem or had already become thematic.

(c) *$g^w\underset{\circ}{r}h_2u$-, cf. βαρύς, Skt. *gurú*- 'heavy'.[56]

(d) Probably also in ταῦς· μέγας, πολύς[57] and possibly also θαλύς[58] with laryngeal metathesis.

(e) Finally, the same phenomenon with a different 'Caland' type adjective may be found in λιπαρός (: adverb λίπα) 'fat'.

It may well be that all these adjectives were originally stems in *-h_2-, a formation that was dying out already in Proto-Indo-European with μέγα, Skt. *mahí* being one of the few relics. It is thus

[53] Cf. de Lamberterie (1990) 338 f., 352 f.

[54] See also Meißner (1998*a*), 245.

[55] This also has the further implication that *krátu*- vs. κρατύ-, despite many claims to this effect, is *not* an example for 'internal derivation'.

[56] Cf. *EWAia* s.v. with references.

[57] Cf. *EWAia* s.v. *TAVI*.

[58] See de Lamberterie (1990) 174 ff., 661 ff.

tempting to define *-h_2- as a very old ('Caland') suffix forming adjectives and to compare the *-*u*- enlargement of these adjectives with the additive way of forming complex Caland suffixes (like *-*nes*- etc.) described in section 2.2 above. This process is also in evidence here as *$meĝ$-h_2- forms the basis for *μεγα*-*λο*- as well as *μέγα*-*θος* and Skt. *mah-ánt-*.

If the above considerations are correct, then we should not expect the suffix *-h_2- to be present in nominal derivatives. The original distribution would have been adjective *$pl̥t$-h_2/*$plet$-h_2- vs. noun *$plét$-*es*- but after the enlargement to *$pl̥t$-h_2-*u*-, *$pl̥t$-h_2- could be regarded as the root which might then have been taken over into the noun as well.[59] This seems to me to be the most promising way of solving the chronological incompatibility of *kravíḥ*, on the one hand, and *práthas-* on the other.

The preceding analysis deals, strictly speaking, with the internal reconstruction of PIE itself. However, it may shed light on a related category of words in Greek and is thus important in our context. It is well known that adverbs in -*α* like *κάρτα* (: *κρατύς*, *κρατερός*), *πύκα* (: *πυκνός*), *τάχα* (: *ταχύς*) etc. stand alongside 'Caland' adjectives in Greek.[60] No other language has a comparable formation and the origin of this -*α* is unclear. The standard explanation is that of Brugmann[61] who derived it from *-*n̥* although a non-thematic *-*n̥* plays hardly any role in the formation of adjectives and certainly none in a Caland context. Nussbaum[62] saw in it a reflex of *-*n̥t*, the zero grade of the Caland suffix *-*ent-*/*-ont-* as seen in Skt. *mahánt-*, Lat. *cruentus* etc. Why the suffix should be in the zero grade, especially given that the root shows this gradation, is not explained and is not easily paralleled. A much simpler explanation was put forward by Schwyzer[63] who simply took the -*α* to be a prop vowel. The only reason for such an explanation is the fact that the other Indo-European languages have no comparable forms. However, his

[59] Compare for a similar process the spread of the aspirated stop in the word for 'path' in Skt. where nom. sg. *pánthāḥ* instead of earlier *pántāḥ* as reflected in Av. *paṇtå* is remodelled on the basis of the weak cases like gen. *patháḥ* < *$pn̥th_2$-és-*, see *EWAia.* s.v.

[60] See Risch (1974) 66 f.

[61] See Osthoff and Brugmann (1879) 228; more recently Sihler (1995) 300.

[62] Nussbaum (1976) 122.

[63] Schwyzer (1931) 184 f.

parallels, the letter names ἄλφα, βέτα etc. and onomatopoeic words like the exclamations σίττα, ψίττα 'shhht' can hardly be regarded as satisfactory. Furthermore, the formation of ὑπόδρα < *upo-dr̥k̂* militates rather strongly against such an interpretation.

However, much earlier von Blankenstein[64] traced this -α back to *-ə. Of course, he intended to explain all Greek adverbs in this way, including formations like κατά, and he regarded this *-ə as an instrumental ending. In a more modern fashion, *-ə would be identified as *-h_2 and von Blankenstein's position as such is difficult to maintain. It seems quite clear that the origin of the Greek adverbial -α is polygenetic: κατά is almost certainly an old accusative but in the adverbs in question like κάρτα, von Blankenstein's reconstruction of -α as *-ə, i.e. *-h_2 may well be correct. This fits in very well with what has been outlined above: κάρτα etc. are nothing other than the unextended forms **kr̥t-h*$_2$ etc., original neuter forms of adjectives surviving in the isolated function of adverbs, just like Skt. *mahí*. These are mere relics which also explains the fact that such formations are in no way productive within Greek. μέγα and κάρτα also differ, of course, in their root vowel gradation. This, though, is not as large an obstacle as would at first seem. It may be that **kr̥t-h*$_2$ was levelled from an earlier **kert-h*$_2$ under the influence of the u-stem adjective (which, after all, generalized the zero grade itself and clearly influenced the noun as well). Alternatively, it is possible that **meĝ-* generalized the full grade already in the parent language so as to avoid the cumbersome *samprasāraṇa* ablaut. Compositional forms like ἀγα- <**m̥ĝh*$_2$ undergoing the typical compositional 'shrinkage' may well be secondary.

Root Vowel Alternations within Greek

According to the modified Schindler model, in the great majority of neuter s-stem nouns a root vowel *-*e*- is to be expected. Yet it is evident that by no means all neuter s-stem nouns have an e-grade vowel in Greek. Alongside words with full grade of the root throughout, e.g. τέγος, γένος and a few words that seem to have generalized the zero grade rather than full grade, for example πύος, Lat. *pūs*,

[64] von Blankenstein (1907) 105.

possibly also Arm. *hu*, gen. *huoy* 'sore matter' and ῥῆγος, Lat. *frīgor* 'frost', two types of root ablaut within Greek occur:

(a) words showing alternation between full grade and zero grade, e.g. βένθος : βάθος, πένθος : πάθος;
(b) words for which forms with long vowel and forms with a full grade e-vowel are found, e.g. ἦθος : ἔθος, μήδεα : μέδεα, γῆρας : γέρας.

The question is, of course, whether the first group should be regarded as continuing the original root vowel ablaut or whether these vowel alternations have an inner-Greek origin. As far as the second group is concerned, these words form much of the relevant data for Schindler's second 'loose end'. In the established ablaut model, original long vowels have no place in a proterokinetic paradigm and the question must be addressed as to whether these forms are indicative of a different inflectional type. In any case, there are important differences between the full- vs. zero-grade alternations on the one hand and the long vs. short vowel forms on the other. In the former group, the full-grade forms are almost invariably older and are gradually replaced by the zero-grade forms. This also triggers a stylistic difference as the full-grade forms remain in use in poetry to some extent or belong to a higher register in general. The zero-grade forms are typical for prose texts but may also occur in poetry and often seem the normal, unmarked forms. No such chronological or stylistic difference can be established in the second group; rather, we sometimes get a palpable semantic difference, e.g. γῆρας 'age' but γέρας 'honour'. For these reasons alone, it seems apt to treat the two groups separately.

Full-grade vs. zero-grade alternations are found in Greek in the following pairs: βένθος : βάθος 'depth', πένθος : πάθος 'emotion, suffering', κρέτος : κράτος/κάρτος 'strength', θέρσος : θάρσος/θράσος 'courage'.

As far as the word for 'depth' is concerned, βένθος is the only form found in Homer. It is used to describe the sea (10 times) and the forest (*Od.* 17.316). In its usage in the description of the sea, it is not strictly speaking formulaic although the line ἡμένη ἐν βένθεσσιν ἁλὸς παρὰ πατρὶ γέροντι occurs twice (*Il.* 1.358 and 18.36) as do the line segments κατὰ βένθος ἁλὸς Νηρηΐδες ἦσαν (*Il.* 18.38 and 49),

βένθεσι λίμνης (Il. 13.21 and 32), πάσης βένθεα οἶδε (*Od.* 1.53 and 4.386) and ἁλὸς βένθοσδε ἔρυσσαν (*Od.* 4.780 and 8.51), each occupying a metrical slot typical for formulae,[65] namely T_2, B_2, Tr_1 and Tr_2 respectively. The manifestly younger usage for the description of a forest βαθείης βένθεσιν ὕλης (*Od.* 17.316) is a variation of the older βαθείης βένθεσι λίμνης (*Il.* 13.32) and note that in this formula, βένθος is directly associated with βαθύς. Similarly, the *bahuvrīhi* πολυβενθής 'having much depth', 'very deep' is found only in the formula λιμένος πολυβενθέος ἐντὸς (*Il.* 1.432+; 4 times) and once in the phrase ἁλὸς πολυβενθέος (*Od.* 4.406). On the whole, therefore, βένθος looks archaic and much like a residual word.

After Homer, βένθος is very rare. Its usage is confined to poetry and in at least some of the instances it is a Homeric reminiscence or imitation, cf. Ar. *Frogs* 666 ἁλὸς ἐν βένθεσι. It occurs several times in Empedocles, once in Pindar (*O.* 7.57), once in Euripides (*fr.* 304) but is also once employed metaphorically in θερμῷ βένθει σῆς κραδίης 'in the hot depth of your heart' by the Byzantine epigrammatist Paulus Silentarius (cf. *Anthologia Graeca* 5.274). The same author uses other Homeric forms and phrases (cf. forms like ἀνέρα or δέπας οἰνοχόον 5.266), typical for the time and genre and the occurrence here obviously proves nothing for the actual usage of the word. βένθος also serves as the basis for compounds. Apart from the Homeric πολυβενθής which is also used once by Apollonius Rhodius (λίμνη, 4.599; clear imitation of Homer), Aristophanes creates κυανοβενθής 'with dark-blue depths'. This would be an apt description of the sea and as such, it is a Homeric reminiscence; it is comically used to describe a drinking cup (λεπαστής) in *fr.* 165 (*hapax*). However, the passage in question is suspect though it seems good para-epic style.

βάθος, on the other hand, is not found in Homer as such but underlies the *hapax* ἀγχιβαθής (*Od.* 5.413). This looks very much like an ad hoc creation and is manifestly younger than βένθος, -βενθής. Yet it does show that the zero-grade form existed already in Homeric times—but only in the Odyssey.

[65] The terminology is taken from Ruipérez (1999) 138 f.: T, P, Tr mean trithemimeral, penthemimeral and trochaic caesura respectively, B stands for bucolic diairesis, the numbers 1 and 2 for the segments preceding and following the relevant caesura.

In a remarkable contrast with early epic poetry, *βάθος* is practically the only word used for both 'depth' and 'height' in post-Homeric Greek. Thus, already Aeschylus (*Pr.* 1029) speaks of *Ταρτάρου βάθη* 'the depths of Tartaros', Euripides (*Med.* 1297) says *ἆραι σῶμα ἐς αἰθέρος βάθος* 'lift the body up to the heights of the sky', and the plural *βάθη* in particular comes to develop the specialized meaning 'deep water', cf. Arist. *HA* 599^{b}9 *φωλοῦσι δὲ καὶ οἱ θύννοι τοῦ χειμῶνος ἐν τοῖς βάθεσι* 'The tuna-fish, too, hides in deep water during the winter.'

At first glance, the picture is similar in the case of *πένθος*/*πάθος*. *πένθος* is the only form occurring in Homer and Hesiod while *πάθος* is first attested in the tragedians. But this is as far as the similarities go. The Homeric (and Hesiodic) usage of *πένθος* is largely non-formulaic. It occurs only in the singular and means 'grief', 'sorrow' and is often qualified by adjectives like *ἄλαστος* 'unbearable' (or 'unforgettable'?),[66] *μέγα* etc. or used in parallel with *ἄχος*, *γόος*. It means in particular 'grief for the dead', 'mourning', cf. *παιδὸς γάρ οἱ ἄλαστον ἐνὶ φρεσὶ πένθος ἔκειτο* 'unbearable grief for his child was laid into his heart' (*Od.* 24.423).

After Homer, *πένθος* remains in use in both poetry and prose, Attic and Ionic; the prevailing meaning is that of 'mourning', 'grief', 'suffering' cf. Hdt. 2.46 *ὅστις ἐπεὰν ἀποθάνῃ πένθος μέγα παντὶ τῷ Μενδησίῳ νομῷ τίθεται* 'whose death causes great mourning for the whole of the Mendesian tribe', Hdt. 3.14 *τὰ μὲν οἰκήια ἦν μέζω κακὰ ἢ ὥστε ἀνακλαίειν, τὸ δὲ τοῦ ἑταίρου πένθος ἄξιον ἦν δακρύων* 'the sufferings of my own house would be too great for weeping aloud, but the suffering of my friend would be worthy of tears'.

πένθος also yields a significant number of compounds. *ταλα-*, *νη-*, *νεο-* and *πολυπενθής* are found in Homer, and all of these compounds are also used in post-Homeric poetry; *δυσ-* (Pi.), *βαρυ-* (Bacch.), *ἀξιο-* (E.), *ἀ-*, *ἀντι-*, *ἀτιμο-*, *ἀκρο-πενθής* (all in A.) are new creations and a few other such compounds are created by Hellenistic and Byzantine writers, usually in poetry. Thus, both *πένθος* and *-πένθής* remained in use and the meaning of *πένθος* is only partly specialized. The situation in this case, therefore, is quite different to that of *βένθος*/*-βενθής* outlined above.

[66] Cf. *LfrgrE* s.v.

πάθος, on the other hand, is first attested in Aeschylus, occurring in the singular as well as in the plural. With regard to its semantics, it overlaps in part with πένθος, cf. e.g. Hdt. 1.91 προθυμεομένου δὲ Λοξίεω ὅκως ἂν κατὰ τοὺς παῖδας τοὺς Κροίσου γένοιτο τὸ Σαρδίων πάθος '(Apollo) Loxias wished that the suffering of Sardis might first come upon the children of Croesus'. But in contrast to πένθος, πάθος can mean simply 'incident' or 'experience, impression' without any negative connotation. This usage is particularly common in Classical philosophy, e.g. Pl. *Phd.* 96a τὰ γ' ἐμὰ πάθη 'my experiences' which is contrasted with τὰ ἔργα 'deeds'. On the whole, therefore, the usage of πάθος is more widespread than that of πένθος.

Compounds in -παθής are also attested and occur more frequently than those in -πενθής. The earliest example is αἰνοπαθής *Od.* 18.201, and is thus earlier than the first attestation of πάθος, and many such compounds are found in Aeschylus, the first writer known to use πάθος.

κρέτος '(bodily) strength' is found only in Aeolic (Alc. 25); otherwise κράτος and κάρτος occur. Both forms are attested in Homer, later on κάρτος is the Ionic, κράτος the Attic form.[67] κρέτος looks like a preserved archaism since it is hard to see how it could have been created secondarily. This is confirmed by the usage of compounds of κρέτος. -κρέτης is found exclusively in personal names, and the distribution of the forms is remarkable. The type of personal name with an s-stem noun as its second member is known, of course, from earliest times (Myc. *-ke-re-we*, Hom. -κλέης etc.). But whereas the type itself is certainly inherited, such forms are surprisingly rare in both Mycenaean and Homer. In Mycenaean they seem to account for less than 5 per cent of names,[68] in Homer there are 33 s-stem names in masc. -ης, fem. -εια out of *c.*750 personal names,[69] yielding about the same ratio as that found in Mycenaean. The most frequently attested s-stem element in Classical Greek personal names is -κλέης which is also found in Mycenaean and Homer. The second most frequent element is -κράτης/-κάρτης (the latter form much rarer).

[67] For a semantic analysis see de Lamberterie (1990) 323 ff.
[68] Morpurgo Davies, personal communication.
[69] See von Kamptz (1982).

However, not a single personal name in *-κρέτης*, *-κράτης*, or *-κάρτης* is found in either Mycenaean or Homer.[70] These two forms of Greek are in agreement concerning the complete absence of such names. Furthermore, it is interesting to note that names in *-κρέτης* are restricted to Arcadian, Cypriot, and Lesbian,[71] the latter being the only dialect where the noun *κρέτος* is in use. Examples are Arc. *Δαικρετης*,[72] Cypr. *ti-mo-ke-re-te-se* (*ICS* 361, fifth/fourth century BC), Lesbian *Δαμικρετης*.[73] Names in *-κράτης* are attested alongside those in *-κρέτης* but the latter can be shown to be genuinely dialectal. In the case of Cypriot, names in *-ke-re-te-se* are older than those in *-ka-ra-te-se* which occur under Koine influence[74] and the same holds true for Lesbian. In Arcadian, an interesting observation can be made: IG V2, 36 gives a list of personal names, some of which contain the noun in question as their second member. Those of Arcadian full citizens, *πολῖται*, end in *-κρέτης*, the names of the *μέτοικοι* in *-κράτης*, clearly suggesting that the former is the inherited, genuine dialectal form, which may, by then, have belonged to a higher register.

A consideration of this distribution would naturally lead to the conclusion that *-κρέτης* belongs to the 'Achaean layer' of the Greek dialects. But this is not in any way supported by the evidence from Early Greek and a different explanation may be called for. *κρέτος* clearly is an archaism, and its existence in a certain subgroup of dialects, whether directly attested or in personal names, is neither surprising nor indicative of any closer relationship between the dialects in question. It seems quite possible that personal names in *-κρέτης* were created independently in the different dialects. This

[70] A form *pi-ro-ka-te*, apparently a man's name, is read in PY Jn 832 but it is very unlikely to contain the word for 'strength'.

[71] In Lesbian a variant *-κέρτης* is attested from the 2nd cent. BC onwards. *-κρέτης* is attested since the fifth century. Hodot (1974) 124 f. explains these as *formes croisées* between *-κρέτης* and *-κέρτος* (corresponding to Attic *-κρίτος*) and rejects the otherwise obvious suggestion that *-κέρτης* arose under the influence of the doublets *-κάρτης*/*-κράτης* on the grounds that names in *-κάρτης* are not attested in Lesbian at all. The alternative suggestion that *-κέρτης* arose directly under the influence of *καρτερός*, the normal form in the Koine, seems equally unlikely.

[72] See Dubois (1988) i. 111 f.

[73] Cf. Hodot (1974) 116.

[74] Cf. *ICS* numbers 211 and 212 (pp. 217 and 218 respectively).

suggestion is supported by the fact that personal names formed from this root only appear to become frequent in post-Homeric Greek. *κρέτος*/*κράτος* does not seem to belong to the established lexical inventory out of which personal names are formed.[75] As the root in itself looks inherited (it has been compared to Skt. *krátu-* 'strength', Goth. *hardus* 'hard'), it may have been the case that the semantics in early Greek were unsuitable for personal names though this must necessarily remain conjecture. Furthermore, what is suggested here is bound to be wrong if personal names in *-ke-re-te* are eventually found in Mycenaean.

Finally, the word *θέρσος* 'courage' is also Aeolic (Alc. 206.2, cf. also Choerob. *in Theod.* 1.166 and EM 447.24). However, it also occurs in several Homeric personal names, *Ἀλιθέρσης*,[76] *Πολυθερσείδης* (but note *πολυθαρσής* as appellative 'having much courage'), further in *Θερσί-λοχος* and *Θερσίτης*, the latter also epigraphically attested,[77] and in one appellative compound, *θερσιεπής* 'with words of boldness' (B.). Apart from these residual forms, the normal forms are *θάρσος* (also Attic *θάρρος*) and *θράσος*; these too require some comment. In Homer, *θράσος* occurs only once, in *Il.* 14. 416; otherwise *θάρσος* is used 12 times, the usage being non-formulaic.

In Attic prose, a noteworthy distinction exists between *θάρσος* and *θράσος*. The former continues to mean 'courage' (and is not attested in comedy) while *θράσος* comes to mean exclusively 'over-boldness', 'rashness', thus developing a distinctly negative connotation, cf. e.g. Aeschin. 1.189 *ἀναίδεια καὶ θράσος* 'shamelessness and boldness'. This distinction is kept throughout in Attic prose and is further confirmed by the 1st/2nd cent. grammarian Ammonius Grammaticus in *Diff.* 71: *θράσος μὲν γάρ ἐστιν ἄλογος ὁρμή, θάρσος δὲ ἔλλογος ὁρμή* 'θράσος is an irrational impulse, *θάρσος* one based on reason'.

[75] In the same context it is worth noting that *βίη*, which often forms a topos with *κράτος*, is only found once in a Homeric name, *Βιήνωρ*, significantly the name of a Trojan.

[76] von Kamptz (1982) 88: 'auf dem Meere Mut habend'; Mühlestein (1987) 97 suggests 'erfolglos kühn', based on the gloss *ἄλιν· ἠλίθεον, μάταιον, κενόν, ἐλαφρόν* which seems distinctly less plausible.

[77] Cf. *HPN* 204; *Θερσι-* is found in a great number of inscriptions from many dialects, among them Arcadian (*Θερσιας* IG V2 36), Aeolic, and Doric (cf. *LGPN* i. 219). The overall situation is thus markedly different from that of *-κρέτης*.

From the evidence studied above it becomes clear that of all words with full grade, only *πένθος* really remains in use while *κρέτος*, *θέρσος* and *βένθος* seem to have disappeared from common Attic-Ionic usage at a very early stage, being replaced by the zero grade forms. The first consequence of this secondary emergence of the zero grade forms is that these cannot be considered reflexes of an old paradigmatic ablaut variation in the root. The motivation for this replacement is not hard to find. *κρέτος*, *θέρσος*, and *βένθος* are all abstract nouns and correspond to the u-stem adjectives *κρατύς*, *θρασύς* and *βαθύς* that have generalized (in the positive) the zero grade. These adjectives can be conceived as the more 'basic' form and it is easy to accept Risch's[78] suggestion that the full grade was eliminated in favour of the zero grade under the pressure of the adjectives. In fact, what we see happening here is only the final stage of this regularization for in a number of cases this change was already complete at the time of our earliest attestations (cf. among others *παχύς* : *πάχος*, *ταχύς* : *τάχος*). Moreover, the trend is amongst universally towards the vocalism of the adjective.[79] This view is corroborated by the semantic distinction between *θάρσος* and *θράσος* observed above. Both were created under the pressure of *θρασύς* but *θράσος* is obviously closer to *θρασύς*[80] than *θάρσος* is. It is important to note that *θράσος* has the same negative connotation that the basic adjective *θρασύς* had developed much earlier. Already in Homer *θρασύς* is attested in the meaning 'over-bold', 'rash' (cf. *Od.* 10.436, where Eurulokhos tries to hold back the companions, warning them against rash Odysseus through whose *ἀτασθαλίαι* many have perished), though *θρασύς* can, of course, be positive as well. The negative connotation becomes more frequent in Attic, and as early as in tragedy the meaning 'arrogant', 'audacious' prevails (cf. A. *Pr.* 180, *Eu.* 863, etc.). Thus, *θράσος* follows *θρασύς* not only in form but in meaning as well.

It is also evident from the above that such pressure did not exist in the case of *πένθος* as an underlying adjective **πaθύς* does not exist

[78] Risch (1974) 78 f.

[79] *εὐρύς* : *εὖρος* is not a counterexample as the initial *ε-* is < **h₁*, cf. Peters (1980) 53 f.

[80] Conversely, *θάρσυς* is also attested but not before the fourth century, and, significantly, first in personal names (cf. e.g. *LGPN* i. 309 f., iiia. 199)

and it is not accidental, therefore, that this is the only full-grade form of these words to survive. In turn, this raises the question of how πάθος came about in the first place. The old suggestion[81] that πάθος owes its existence to an ablauting paradigm *πένθος, gen. *π῰θέσος is hardly tenable in view of the late emergence of πάθος, on the one hand, and of the Indo-European situation as set out by Schindler on the other. Rather, it would seem as though πάθος was created *in addition* to the full-grade form and replaced this only very slowly. According to a more recent suggestion,[82] πάθος is derived directly from the aorist ἔπαθον. This too is difficult to accept as *-εσ- is productive only within very limited parameters in historical times. Surely the key to the problem lies in the compounds. It will be shown later that s-stem adjectives can happily be derived from verbal roots in Greek and indeed αἰνοπαθής occurs from the Odyssey onwards and thus, crucially, precedes the first attestation of πάθος. On the abundantly attested model γένος : -γενής, πένθος : -πενθής etc. a noun πάθος could easily be created as a back-formation.

Lengthened Grade vs. Full-Grade Formations and So-Called 'Narten Systems'

We have seen that the full grade : zero grade find an easy and in the last instance trivial inner-Greek explanation. The second group of s-stem nouns showing vowel alternations in Greek is much more problematic. In four cases, Greek has s-stem nouns from what appears to be the same root showing an alternation between lengthened grade and full grade:

ἦθος (*Il.*+) : ἔθος (S.+); γῆρας (*Il.*+) : γέρας (*Il.*+); μήδεα (*Od.*+) : μέδεα/μέζεα (Hes.+); ῥῆγος (*Il.*+) : ῥέγος (Anacr. 138).

The first noteworthy difference between this and the last group is that here, there is no significant chronological difference between γῆρας and γέρας and between μήδεα and μέδεα. ῥέγος is a *hapax* and may at first sight be of less importance. Yet, as the long vowel in ῥῆγος has to be explained, the problem as such remains.

[81] Brugmann (1879) 19, Meyer (1896) 36.

[82] Cf. Höfer (1984) 43.

Vowel alternations in the roots of these nouns are attested elsewhere in Greek, cf. γηράσκω, γέρων, μέδομαι, μήδομαι etc. but an inner-Greek explanation of these alternations is not obvious. Given that a comparable alternation also appears to exist between languages in ἄγος 'guilt, curse', Skt. *ā́gaḥ* 'sin', scholars have tended to take the alternation as inherited from PIE times. But at the same time, an explanation within the parent language eluded them for a long time.

When Schindler dealt with these forms in his 1975 article he suggested, albeit with some hesitation, that the s-stem nouns in question reflected a second inflectional type, namely the akrostatic one, i.e. with fixed stress on the root right from the beginning. Intimately connected with 'akrostatic' inflection is a phenomenon known as 'Narten ablaut'. As is well known, Narten in her landmark 1968 article described an akrostatic inflectional pattern of some athematic verbs in Sanskrit. These show lengthened grade in the present singular active but full grade (secondarily also zero grade) in all other forms, e.g. 3rd sg. *tā́ṣṭi* 'forms, creates', 3rd pl. *tákṣati* where the static accent goes well with the zero grade of the ending *-ati* < **-n̥ti* vs. the more common mobile *-ánti* < **-énti*. Narten herself had argued that these present formations were not necessarily a rare morphonological pattern peculiar to Indo-Iranian but that they might have been part of an inherited feature of PIE verbal morphology.

Strictly speaking, two issues are at stake here, the position of the stress and the vowel alternations. The former creates no difficulty at all and the evidence clearly speaks for itself. Much more troublesome is the 'Narten ablaut'. Narten's work quickly spawned a wealth of new literature and many scholars now routinely reconstruct an ablaut pattern **-ḗ-* : **-é-* that stands alongside the established and much more common **-é-* : zero alternation. The main difficulty clearly is, however, that it seems impossible to define the morphological contexts in which this type of ablaut occurred; in other words, why some athematic verbs are of the Narten type whereas the majority are not, or why some s-stems would show this type of ablaut, others not.

Faced with this problem, Schindler developed the hypothesis that ablaut behaviour was first and foremost a question of the root

involved and *not* one of morphological categories.[83] If so, the same ablaut pattern would be likely to occur in nouns as well as in verbs and Schindler postulated the existence of an akrostatic type of neuter s-stem alongside the more prominent proterokinetic one. The root **sĕd-* 'sit', for example, (verbal **-ē-* is seen in Lith. *sėdu*) would yield an s-stem noun **sēd-(e)s-*, **séd-(e)s-* as in OIr. *síd*, ON *sætr* (both < **-ē-*) : Skt. *sádas-*, Gk. *ἕδος* (**-e-*).

Obviously, Schindler's suggestion has far-reaching consequences. The first question concerns the status of these s-stem formations. Do they differ from other stems in ways other than their ablaut pattern alone? Here the answer is positive. In no well-established case does a 'Schindler s-stem' take part in Caland alternations of any sort, a fact which could indicate that they belonged to a different morphological class altogether. The 'Caland' s-stem nouns are all, it would seem, of the regular proterokinetic type.

However, the whole approach gives rise to serious problems of a methodological and factual nature. To postulate 'Narten systems' means to assume that:

(a) Narten-type ablaut (contrast of lengthened grade vs. full grade in some roots) is not peculiar to Indo-Iranian but is definitely inherited from the parent language;
(b) such an ablaut is not restricted to certain morphological categories but is lexically determined.

In effect this is tantamount to saying that we need to revert to a pre-laryngeal stage when it was assumed that some roots had certain types of ablaut and others had different types and that the various types could not be reconciled with one another. Yet in order to reach this conclusion—which has important consequences for our understanding of Indo-European morphology—it must at the very least be demonstrated that there is adequate evidence to allow us to reconstruct such roots for PIE. One's confidence in the reconstruction would also be strengthened if the roots in question showed some common characteristics—phonological or semantic/lexical—but, for the moment, this does not seem to be the case.

[83] Regrettably, Schindler never published his idea in full. Owing to his untimely death, Schindler (1994) is all that exists in print.

The first question, then, concerns the plausibility of the reconstruction of the roots with the lengthened grade. Here it is legitimate to doubt whether all reconstructed forms are in fact inherited from the parent language. For example, the root **sed-* 'sit' plays a pivotal role in Schindler's theory to judge from his handouts. However, for the most prominent exponent of lengthened grade of this root, Baltic, an inner-Baltic explanation is possible. The only verbal form of **sed-* with a long vowel is the paradigm found in Lithuanian. But this does not mean that Lithuanian is more archaic than Greek or Sanskrit. The long vowel can be explained as a contamination of the root **sed-* and **h_1e-h_1s-*[84] which is otherwise not uncommon (cf. Gk. *ἦμαι* for **ἧμαι* after *ἑδ-*). In Baltic this would be all the more plausible after the synthetic distinction of voice in all non-participial forms of the verb had been given up and after the assimilation /tt/ > /st/ had occurred. At that point in time we would have had two active paradigms Proto-Baltic **sesti* 'sit down' and **ēsti* 'sit'. The two could easily have been contaminated, yielding attested *sė́sti*.

Similarly, OIr. *síd* cannot be used as evidence. First, the etymological connection with **sed-* 'sit' is not at all certain as *síd* actually means 'fairy mound' or 'peace'. But even if the connection is correct, we must take into account the wider picture, and that means certain verbal forms as well. OIr. *saidid* 'sits, sits down' has a clearly very old preterit *síasair* which cannot be explained from **sed-s-* because of its middle inflection and its non-s-preterite endings. McCone[85] interpreted this quite plausibly as a suppletive form, a stressed (simple) 3rd sg. suffixless preterite from *ar-sissedar* 'remains' which does not otherwise occur as a simple verb. From this, a stem *síad-* could be abstracted and that this was indeed done is shown by the preterite *siadair*, i.e. *síadair*. This could then easily have influenced the noun.

[84] The long vowel can be explained even more easily as having spread from the infinitive *sė́sti* where it can have come about by Winter's Law, i.e. the close Baltic equivalent of Lachmann's rule in Latin whereby a voiced stop when becoming voiceless due to internal sandhi (i.e. before another voiceless consonant) will lengthen the preceding vowel (cf. Lat. *agō* : *āctus*). However, given that Winter's Law is not as regular as one would like it to be, it may be more prudent to prefer the alternative explanation. For the reconstruction of the root see *LIV* 232; in any case, this can hardly be a 'Narten' root in view of 3rd pl. Skt. *ā́sate* = Homeric *εἵαται* (read *ἧαται*).

[85] McCone (1987) 81 f.

In our context, the analysis of the four Greek s-stem nouns is of primary importance. In order to give support to Schindler's theory they must be shown to likely continue a PIE ablaut variation and not be due to Greek innovation and the entire evidence must first be examined.

ἦθος **vs.** *ἔθος*

Taking the pair *ἦθος*/*ἔθος* first, we seem to get off to a bad start, for the latter is not attested at all in Homer, but this may ultimately be due to chance. The word first occurs in S. *Ph.* 894 and always means 'custom', 'habit'. On the other hand, *ἦθος* occurs three times in Homer, always in the plural:

ῥίμφα ἑ γοῦνα φέρει μετά τ' ἤθεα καὶ νομὸν ἵππων. (*Il.* 6.511 = 15.268)

His legs [knees] carry him swiftly to the *ἤθεα* and pasture of the horses.

τὰς μὲν ἄρα ἔρξαν κατὰ ἤθεα κοιμηθῆναι. (*Od.* 14.411)

Thus they locked them [the pigs] up so that they would sleep at their *ἤθεα*.

In other words, *ἤθεα* in Homer does not mean 'manners', 'customs' but designates rather a concrete location, 'dwelling', 'abode'.

In Hesiod, this is still the prevailing meaning (*Op.* 137 [ambivalent], 167, 525); the only case where 'manners' may reasonably (but by no means must) be assumed is *Th.* 66f.[86] *πάντων τε νόμους καὶ ἤθεα κεδνὰ|ἀθανάτων κλείουσιν* 'they praise the customs and the noble manners of all the gods'—or: 'the dwellings and abodes'? Hesiod is also the first writer known to use the sg. *ἦθος*. It occurs in *Op.* 67 and 78 in the expression *ἐπίκλοπον ἦθος* 'thievish character', which is paralleled with *κύνεον νόον* and *ψεύδεά θ' αἰμυλίους λόγους* 'dog-like mind' and 'lies and treacherous words' respectively. Thus, it seems that we are dealing with both a shift from plural to singular as well as with a considerable change of meaning.

Under Schindler's model, *ἦθος* is the lengthened grade form of *ἔθος* and both once formed a single paradigm. But this would mean ignoring completely the difference in meaning. Indeed because of

[86] Note that this passage, for other reasons, is usually taken to be a later interpolation, cf. Laroche (1949) 171.

this difference in meaning it has been suggested that the two words have entirely separate etymologies. ἔθος is often compared with Skt. *svadhā́* which means something like 'own state or condition or nature'[87] but the stem formations are different in the two languages. ἦθος is even more difficult. It is usually thought to belong somehow to the perfect εἴωθα (Lesb. ἔωθα) 'I am accustomed to' < *(σ)ε-(σ)ϝωθα. The details are very uncertain, particularly since no cognate outside Greek has yet been identified. Whatever the case, an alternation -η- : -ω- can sensibly be traced back to *-*eh*$_1$- : *-*oh*$_1$- and would lead us to a root *(*s*)*u̯eh*$_1$*d*^{h}-. If the connection of ἔθος with *svadhā́* is correct and the two are ultimately built on the reflexive pronoun **s̥u̯e* then it may be separated from εἴωθα etc. altogether or at least makes it likely that the split occurred very early on, within the parent language. From a semantic point of view this would cause no difficulty.

These considerations alone may suffice to put in doubt the validity of Schindler's reconstruction. But the argument can be expanded. If it is still assumed with Schindler that ἦθος and ἔθος had the same origin then we would have to speak of a development in meaning. This development could be paralleled by the pair νόμος/νομός for which similar problems arise. νομός 'pasture' occurs from Homer onwards and would correspond, in our comparison, to ἤθεα while post-Homeric νόμος 'custom', 'habit' would parallel post-Homeric ἔθος 'habit', 'character'. Note further that νόμος/νομός and ἦθος often form a topos in early literature (cf. e.g. above *Il.* 6. 511 = 15. 268 and, if genuine, Hes. *Th.* 66f., also above). Yet νόμος and νομός are certainly not two different forms in one original paradigm and Laroche explicitly separates the two.[88] The two words in themselves do not solve the problem in question but they point in an important direction. Homer has a personal name Ἔννομος and εὔνομος (Pi.+) is warranted by εὐνομίη (*Od.*+) which means something like 'good arrangement, good legal order'.[89]

The first compound of ἦθος is συνήθης, found in Hes. *Th.* 230, meaning 'living together' and these compounds may well be the link

[87] See *EWAia.* s.v. [88] Laroche (1949) 177.
[89] See Andrewes (1938) for details.

between the different meanings of the nouns. An *ἔννομος* is somebody who keeps his sheep or cattle *ἐν νομῷ*, i.e. in the designated pasture, in other words, behaving in an orderly fashion, with good manners. Similarly, somebody who is *εὔνομος* has good pastures, is well organized. People who are *συνήθεες ἀλλήλῃσιν* (Hes. *Th.* 230) live together, are accustomed to each other, share the same habits. Finally, the word *ἠθεῖος* is used as a term of address in Homer. If it is connected with *ἦθος* at all, then a semantic development 'having (good) dwellings, rich' to 'dear'—if indeed this is the meaning—is trivial.

If this is right, *ἦθος* and *ἔθος* may indeed have the same origin but not in a Schindler fashion. For if we need to resort to compounds of *νομός* 'pasture' and *ἦθος* 'dwelling place, pasture' then it must also be taken into account that composition has an effect on morphology. Thus, the accent of *νόμος* can be explained as a result of the back-formation from *bahuvrīhi* compounds and prepositional governing compounds: *ἔλλογος*, *εὔλογος* : *λόγος* like *ἔννομος*, *εὔνομος* : *X*, *X* = *νόμος*. Similarly, for *ἦθος* we ought to remember that in composition, words beginning with a vowel tend to undergo lengthening (Wackernagel's *Dehnungsgesetz*), cf. Hom. *ἀείρω* : *συνήορος* 'linked with'. It may, therefore, be suggested that the original form was *ἦθος* 'dwelling'; that this formed both a derivative *ἠθεῖος* and compounds of the *συνήθης* type. Later on, the compounds were semantically reinterpreted as suggested above and on the model *ἀείρω* : *συνήορος*, *ἔθος* could easily have been back-formed. Such back-formations occur frequently, cf. section 2.4. The case here is further strengthened by the fact that no compounds in *-εθής* exist at all. There is thus no need to resort to an alternative PIE ablaut pattern to explain the Greek data.

ῥῆγος ***vs.*** *ῥέγος*

Considering next the alternation *ῥῆγος*/*ῥέγος* 'rug', the first thing to note is the rather striking distribution of these two words: *ῥῆγος* is almost the only form attested from Homer onwards, whereas *ῥέγος* occurs only once in Anacr. 138. The latter is usually said to be derived from a verb *ῥέζω* 'dye', related to Skt. *rájyate* 'becomes red'. However, this traditional equation has to be abandoned because of the absence

of the prothetic vowel in Greek. Moreover, a closer look shows that the alleged verb ῥέ́ζω is attested only in lexicographical writing (although an agent noun ῥογεύς occurs once in a Laconian inscription) under a form ῥῆξαι· βάψαι (Eust. 782.20), and one may suspect that ῥέ́ζω 'dye' is, in fact, nothing other than a specialized meaning of ῥέ́ζω 'do', 'make' and ῥέ́γος, if genuine, could have come about by popular etymology. This leaves ῥῆγος isolated. The initial ῥ- does not make position in Homer (the only decisive attestation is *Od.* 19. 318). In view of these difficulties and in order to save the equation, Tremblay[90] pointed to the gloss χρυσοραγές· χρυσοβαφές which, according to him, continues an old hysterokinetic compound, derived from a holokinetic s-stem (cf. ῥέ́γος); he explicitly argues that the simple ρ points to a PIE root beginning with straight **r*-. In fact this is exceedingly unlikely: not only is it very hard indeed to find other PIE roots beginning with **r*-, it has also long been shown that ῥέ́ζω lost its capacity to geminate the ῥ- quite early and pretty comprehensively.[91] Stephens has demonstrated this for the paradigm of the verb, and I would suggest that it must also be true for this compound. If one were still inclined to follow this line of reasoning, then the existence of all three ablaut grades is also highly suspicious. On the whole, the equation inspires one with little confidence indeed. On the one hand, due to its extremely archaic ablaut pattern, it would have to be a very old word. On the other hand, it is not reflected in any other language. There is a considerable impasse here. The more likely conclusion must be that -ραγές[92] is from ῥέ́ζω and shows the expected zero grade. χρυσοραγές is indeed an old word, but formed within Greek and coined at a time when the zero grade of the root was still in widespread use but when the root had already lost its capacity to geminate.[93] ῥῆγος and its origin are unclear but had better be separated from χρυσοραγές. Other words in the same semantic field are apparently loanwords like λίνον, τάπης, etc. and ῥῆγος may well belong here, too. Indeed, a Semitic origin is

[90] Tremblay (1996*b*) 59.

[91] Stephens (1990) 60 f.

[92] For the zero grade of this root cf. also Myc. pres. *wo-ze* 'works' < **u̯r̥ĝ-i̯é-*, aor. *wo-ke* < **u̯r̥ĝ-é-* with the expected o-reflex of the resonant.

[93] Note, too that Tremblay's translation 'mit goldenen Gewändern' is misleading; a more adequate translation would be 'goldgewirkt'.

not excluded, and in particular it is worth pointing to Arabic *raqaʿa* 'patch a garment', *ruqʿa*, pl. *riqāʿ*, *ruqaʿ* 'piece of cloth'. At any rate, there is certainly no adequate evidence to project the existence of such a word back into PIE.

μήδεα *vs.* μέδεα

Perhaps the most interesting case is constituted by μήδεα/μέδεα 'genitals' and μήδεα 'plans'. Taking μήδεα/μέδεα as the starting point, the following observations can be made: μήδεα is the oldest form, attested since *Od.*; μέδεα is a *hapax* in Archil. 138 though a form μέζεα occurs in Hes. *Op.* 512 and Lyc. 762, the sg. μέζος in Hsch. It is obvious that a word of this meaning is open to all sorts of expressive or tabuistic changes and it hardly seems profitable to speculate about them. As far as the etymological connection with μήδεα 'plans' is concerned, the semantic difficulties are not insurmountable, cf. *DELG* and *GEW* s.v. with parallels.

If they belong together, both μήδεα and μέδεα can be connected to the respective verbs μήδομαι 'intend' and μέδομαι 'be mindful, plan'. This does not solve the problem, of course, but merely transfers it to the verb. μέδομαι has cognates, for example, in Lat. *meditari* and Goth. *mitan* 'to measure'. The isolated μήδομαι, however, calls for an explanation. Several scholars[94] have taken the verbal alternation **mēd-/med-* to reflect a 'Narten' ablaut pattern. This is not without complications, since the verb has only middle forms where the lengthened grade is not to be expected. A lexically isolated active participle μέδων 'ruler' exists, of course, but there are no forms with a long vowel. Thus, unless we in addition admit analogical influence from a not attested active source with such a long vowel, it seems that this is a dead end.

A different explanation can be found if we look at the entire paradigm: alongside the present, we find from the earliest stages onwards an s-aorist (ἐ)μησάμην (*Il.*+). If this is taken as a starting point, we could claim that (ἐ)μησάμην is in fact not derived from **mĕd-* at all, but belongs to the root **meh*$_1$-[95] 'to measure', cf. the

[94] Meier-Brügger (1992*b*) 242, Isebaert (1992) 201.

[95] For the reconstruction of this root (**meh*$_1$- rather than **meh*$_2$-) cf. *LIV* 424 f.

Sanskrit aorist 1st sg. middle *ámāsi* (AV)[96] and 'si-imperative' *māsi* (RV; note that the often quoted root present *mā́ti* is a learned invention found only in Dhātupāṭha XXIV, 54). Secondarily, for formal reasons and considering the close semantic relationship with *μέδομαι*, a present *μήδομαι* could have been created and *μήδεα* then may have been derived from it. The fact that *μέδομαι* only has a present and an imperfect supports us in our view that it was originally distinct from *μήδομαι* the aoristic value of which is confirmed by the Sanskrit forms.

This explanation might work within Greek; however, Arm. *mit* 'mind, intelligence' also seems to reflect **mēdos* but Armenian can prove nothing for the original stem class. The long vowel is also found in OIr. preterite *ra mídar* 'I judged it' (Würzburg 9b5, cf. *DIL* s.v. *midithir*). But since this is a 1st sg. middle form, the long vowel cannot be original. It is tempting to suggest that, as this long vowel only occurs in the preterite, the old s-aorist from **meh$_1$*- was here, too, contaminated with **mes(s)*- which arose from earlier **med*- + dental (e.g. preterite 3rd sg. middle, verbal adjective). Yet, as Thurneysen notes, the Old Irish *ī*-preterite is typical for verbs beginning with *f*- and clearly the future *midithir* has been modelled on that of the verbs beginning with *f*-, and the same process has taken place in the preterite.[97] Finally, long-vowel forms are also found in Germanic, e.g. ON *mát*, late MHG *maȝ* 'measuring, measure'. But these nominal formations are not likely to be old: *maȝ* is not comparable to ON *mát* since it arose very late (fourteenth century) as a contamination of late OHG *māȝa* 'measure' (fem.) and OHG *meȝ* 'measurement' (neut.).[98] Of course, the former is based on an *einzelsprachlichen* stem PGerm. **mēt*- which appears regularly and most notably in the plural preterite of strong verbs of the fifth ablaut class, cf. Goth. *us-mētum*. We are obviously dealing with an inner-Germanic derivational process.

In sum, different but relatively cogent explanations for the secondary nature of the long vowel in the various languages emerge, and

[96] Narten (1964) 191 n. 547 observes that the root *mā*- is used predominantly in the middle; this situation is mirrored in Gk.

[97] See *GOI* 435; Thurneysen notes that 'the latter [i.e. *mídar*] corresponds to forms with a long vowel (*mēd*-) in other languages … is wholly improbable'.

[98] This also explains why in Modern German the word occurs both as feminine and as neuter.

as there is little agreement among them and as we often find this long vowel in categories where, according to the Schindler theory it does not belong, there is no justification for reconstructing an ablauting root **mēd-*/**med-* for the parent language.

γῆρας ***vs.*** *γέρας*

Finally, both *γῆρας* 'age' and *γέρας* 'honour' are attested from *Il.* onwards. The latter is problematic in form and meaning. Semantically, it is quite separate from the verb *γηράσκω*, *ἐγήρᾱ* 'grow old, become aged'. This may indicate that *γέρας* is a relatively old formation, which might also be supported by the fact that the verb has no full-grade (or zero grade) forms in Greek, except for the non-paradigmatic original participle *γέρων*. *γῆρας* 'age', on the other hand, might be slightly younger. In any case, it seems certain that *γῆρας* is derived from, or influenced by, the aorist *ἐγήρᾱ* the nature of which is disputed;[99] the full grade is also found in Skt. *jarás-* on which see section 3.4. If *ἐγήρᾱ* represents an ancient s-aorist then the lengthened grade may be original there and may subsequently have been generalized first in the verbal paradigm only to be later introduced in the noun as well.

Further Implications

In the above section we have seen that in all relevant cases in Greek non-Narten explanations for the long vowel can be found. This is clearly the *advocatus diaboli* position and, partly, such explanations require the pulling of all strings of PIE reconstruction; one might with reason be sceptical of the results as well as the general approach. Yet the detailed consideration of each case was clearly needed and it does throw considerable doubt on the value of the evidence. Of course, one might argue that although every single case can be doubted, in its entirety the evidence is significant. But the evidence is far too scant for this conclusion to be legimate, and this is further compounded by the fact that the only cross-linguistic equation, the

[99] Peters (1987*a*) tries to explain it as a root aorist while the standard (and to my mind more plausible) view regards it as a relatively old s-aorist, cf. Barton (1982) and most recently *LIV* 165 f.

aforementioned *ἄγος* 'guilt, curse', Skt. *ágaḥ* 'sin' is even more uncertain than before and is quite possibly to be rejected in view of Pamphylian h*αυι*(*α*) if this is, as seems likely, the pl. of *h*αγος*.[100]

On the basis of the evidence analysed, there are thus good reasons to reject Schindler's theory in its entirety. Yet, even if all the objections are correct, the counter-analysis proposed above does not *as such* disprove Schindler's theory to which we must now return, especially given that in some languages, long-vowel forms of the roots dealt with surface, cf. e.g. the word *soot*, Lith. *súodys*, more commonly pl. *súodžiai*, *súodės*, OIr. *suide*, *suithe* 'fuligo', all pointing to **sōd-*, and ON *sætr* providing additional evidence for **sēd-*.

It was Schindler's view that Narten behaviour was an inherent characteristic of the root. As such, this could be true in the light of recent work on such phenomena.[101] At the same time, he maintained[102] that this type of ablaut was best preserved in s-stem nouns.[103] There is an inherent contradiction here: the behaviour cannot at the same time be dependent on root characteristics *and* be due to certain morphological formations. The question as to what exactly is meant by 'Narten' is still unanswered.

If one admits with Schindler (and many others) that the akrostatic pattern of accentuation is linked to Narten ablaut, a further unwelcome consequence arises, for if **-ḗ-* really is original in these cases, we are effectively forced to admit with it and in it the existence of at least one extra vocalic segmental phoneme for PIE, effectively wiping out some important advantages of the laryngeal theory. It may be stated that this is an overly reductionist objection. Yet there are further problems with a 'maximum Narten model'. It is not at all clear how the ablaut comes about, given that the accent remains static. In other words: the **-ḗ-* : **-é-* is *not* parallel to the familiar **-é-* : zero alternation which is, in origin at least, clearly dependent on the position of the word accent. Secondly, and at least equally gravely, while the standard form of ablaut occurs everywhere, Narten ablaut is limited to roots. This means, that the phoneme **-ḗ-*, at least until compen-

[100] See *EWAia.* s.v. and in particular Brixhe (1976) 179.

[101] Cf. Halle (1997), Hock (1993).

[102] Personal communication.

[103] The entire evidence for Narten ablaut is collected and discussed by Widmer (1995).

satory lengthenings within PIE have created new long vowels (type **ph₂tḗr*), is limited to lexical morphemes; this is possible but hardly a satisfactory assumption. Not all scholars take the long vowel to be original, however, and Szemerényi[104] and Drinka[105] in particular have tried to argue for a secondary origin of 'lengthened grades'.[106]

The assumption of Narten type behaviour would be easier to accept and indeed would have any explanatory value only if factors could be found that govern the distribution of long and full grades. This has so far not been done but in this context it may be helpful to reconsider briefly both the evidence and Schindler's assumption. If we look for morphologized lengthened grades, outside the Skt. 'Narten' presents that have no parallel elsewhere, the s-aorist is the best candidate by far. If this is borne in mind, Schindler's claim that s-stem nouns have best preserved 'Narten' ablaut can be seen in a new light. Surely it is not accidental that the best evidence comes from two otherwise totally unrelated categories containing a suffix in **-s-*.

For the s-aorist, a secondary origin of the lengthened grade is, following Drinka, very likely. The same could be applied to our nouns. Before the introduction of the full grade of the suffix from the oblique cases, a form **men-s* would have created no problems. But what about **sed-s*? It seems entirely possible that an original paradigm nom./acc. **séd-s* : oblique **sd-és-* first generalized the root vowel of the nom./acc. before developing > **séss* whence **sḗs*. Of course, the pressure to remodel this sort of paradigm would have been considerable and after the introduction of the full grade of the suffix in the nom./acc. (and eventual columnization of the accent on the root) we would have had **sḗd-os* : **séd-es-*. This could be further remodelled by an analogical shortening of the vowel in the nom./acc. but it is not now so surprising to see some long-vowel forms still floating around. One may wonder, however, whether this scenario is compatible with 'Szemerényi's Law',[107] i.e. the law that plausibly

[104] Most recently Szemerényi (1996) 118.

[105] Drinka (1995) 23 ff.

[106] See also Strunk (1985) who argues for a late, analogical introduction of the long vowel so as to provide an ablaut scheme parallel to that of the usual full : zero grade type.

[107] In fact, this had been proposed several times in the 19th cent., see most recently Szemerényi (1999) 116, with references; and cf. Ch. 3 n. 83.

explains long-vowel, asigmatic nom. sg. forms (found in the stems in liquids and nasals) of the type **ph₂tēr* 'father', **h₂eĥkmōn* 'stone' (ἄκμων, Lith. *akmuõ* 'stone') as having arisen from original regular short-vowel sigmatic forms by means of assimilation of the final consonant, and subsequent simplification with compensatory lengthening of the preceding vowel: **ph₂tēr* < **ph₂terr* < **ph₂ter-s* and likewise **h₂eĥkmōn* < **h₂eĥkmonn* < **h₂eĥkmon-s*. In fact, there may not be a problem here at all. Clearly the best cross-linguistic evidence for Narten behaviour exists for the root **sed-* 'sit' and, to a lesser extent, **med-* 'think'. The assimilation of **séd-s* > **séss* > **sḗs* may in fact be unconnected with Szemerényi's Law and no date for its operation can be established on this basis. In this context, the original collective formation, still serving as the paradigmatic plural in Av. (type **ménōs*, Av. *manå̊*),[108] is also of interest. The **-ōs* almost certainly derives < **-os-h₂*, the laryngeal being the standard collective marker. Unless this is an analogical formation, the assimilation and compensatory lengthening must postdate the introduction, from whatever source, of the o-vowel of the suffix. This is not an example of Szemerényi's Law but a development so similar that one would be tempted to argue that the two occurred at the same time.

The theory just presented means that even 'Narten' s-stems could originally have followed the standard pattern of inflection, i.e. have been proterokinetic; this is not unwelcome given what we saw in the 'normal' type, and it is actually consistent with the evidence inasmuch as the designation of the formations in question as akrostatic was arrived at solely on the basis of root vowel quantity oscillations; the accent or the (principally incompatible) gradation of the suffix played no role in the argumentation (as far as this has been published). But another avenue is in principle also open to us: intermediate **séss* may have acquired the long vowel not by compensatory lengthening but because it was monosyllabic.[109] In the oblique cases, this would not have been the case. Under this scenario, these s-stems could indeed have been original akrostatic formations, with a secondary introduction of the full grade suffix from the proterokinetic s-stems in order to keep the lexical root transparent.

[108] See the section '*The standard pattern of inflection: ablaut variations in the root and suffix*' above.

[109] This phenomenon is best attested for **ī* and **ū*, see Mayrhofer (1986) 171 f.

What conclusion are we supposed to draw from this? Schindler's akrostatic model is solely based on the vocalic alternations in the root but these are better explained differently as we have seen. There is thus in effect no reason to follow Schindler, and indeed the theory may have to be abandoned. But even if he were correct, the important point here is that lengthened grades are secondary and can, after all, be subjected to a phonological or morphonological explanation. Moreover, the lengthened grade and the akrostatic accent have in fact little to do with one another in origin. Again, this can only be welcome. Narten behaviour, properly speaking, means accentual behaviour (akrostatic) and is to be seen as only secondarily connected to the ablaut so often associated with it and yet so problematic. It also means, if one accepts some of the evidence, that at best *some* long-vowel forms may indeed be of PIE age, but a great many others will still have to be explained on the basis of the individual language concerned.

2.4 REVERSING THE CYCLE: THE SECONDARY DERIVATION OF NEUTER S-STEM NOUNS

Introduction

It is commonplace to derive compounds in *-αής* like *δυσαής* 'ill-blowing, unfavourable' (wind) from *ἄος* 'breath, wind',[110] despite the fact that the inflection of these compounds is hard to reconcile with such a derivation. *Od.* 12.313 reads *ὦρσεν ἔπι ζαὴν ἄνεμον νεφεληγερέτα Ζεύς*, clearly not an s-stem form. Already in antiquity the reading was questioned, but the transmission is strongly in favour of this form. Aristarchus read *ζαῆν* while Herodian (2.154) even assumed an elided *ζαῆνα*, also found in some codices; similar problems are found in *δυσαήων Od.* 13.99. These forms are much better explained as root compounds, directly derived from the root of *ἄημι* 'I blow'[111] and have nothing to do with an s-stem noun. Equally significantly, there is a very considerable chronological gap in the attestations of the adjectives and their presumed nominal base.

[110] Cf. Chantraine (1933) 426 [111] See section 4.4.

The fact that adjectives in *-αής* are frequently attested in Homer whereas the noun *ἄος* only occurs as a gloss some 1,300 years later in Hesychius is clearly worrying. Of course, this does not render the derivation impossible but another, more economical explanation would doubtless be preferable.

Similarly, since the nineteenth century,[112] *φλέγος* has been compared to Skt. *bhargas-* 'radiance' and Lat. *fulgur*, earlier *fulgus* 'lightning', and the reconstruction of an s-stem noun from this root for the parent language has been widely accepted, despite the fact that, whereas *bhargas-* is frequent since RV, *φλέγος* again only occurs as a gloss in Hesychius. Moreover, the match is not exact as *φλέγος* points to **bʰlegos*, *bhargas* at best to **bʰelgos*. Finally, there is a noun from this root common to Greek and Sanskrit, namely the root noun Gk. *φλόξ*, Skt. *bhraj-*.

This list of chronological oddities could be extended. The examples for such late attested s-stem nouns clearly arouse suspicion since these nouns are by and large a residual class in Greek.[113] There is a clear need for an explanation here: how is it possible that a good many s-stem nouns are not attested until very late when the suffix had ceased to be productive in deriving nouns from lexical roots at some stage in Proto-Greek?

The Inversion of the Common Derivational Sequence

The deverbative derivation of adjectives in *-ης* is clearly gaining ground in Greek (see section 4.7), though the denominal one, i.e. neuter noun in *-ος* > adjective in *-ης* remains nevertheless very much alive. This could then result in a derivational ambiguity, i.e. a deverbative adjective in *-ης* could also be regarded as having been derived from a neuter noun in *-ος*. If so, then an actual derivational sequence adjective in *-ης* > noun in *-ος* is possible, and this is what must have happened in the cases of *ἄος* and *φλέγος*. For the rest, the evidence is conclusive only in very few cases but there are a number of arguments supporting the general hypothesis and the evidence can be analysed under a number of different headings.

[112] Cf. e.g. Parmentier (1889) 188.

[113] See Chantraine (1933) 414.

A first point concerns chronology. As we have seen, there are many cases where the neuter nouns are palpably late and give the impression of being secondary. The important point is that not only are the nouns late but they are always later than the corresponding (deverbative) adjective in -ης. In Hesychius in particular, we find a number of neuter nouns in -ος that look highly artificial and that are best explained as being built on earlier, and indeed mostly Homeric, compounds in -ης. If δυσμενής meant 'having a bad μένος', δυσαής could be understood as 'having bad ἄος', and the gloss ἄος· πνεῦμα ἢ ἄημα would then fit the Homeric adjectives in -αής perfectly well. Similarly, compounds in -φλεγής like ζαφλεγής 'burning throughout, fiery' (*Il.* 21.465+, said of men in their prime), derived from φλέγω, could easily be understood as 'full of fire' and thus have given rise to φλέγος· φλόξ, particularly in view of Homeric pairs like θεός, ζάθεος.[114] It is also worth pointing out that φλόξ in Homer occurs predominantly in metaphors: *Il.* 13.39 f. Τρῶες δὲ φλογὶ ἶσοι . . . μεμαῶτες ἕποντο 'The Trojans in their rage followed [Hector] like the flame'. In the same way, ἀαγής in *Od.* 11. 575 ῥόπαλον παγχάλκεον αἰὲν ἀαγές 'the club, all-brazen, forever unbreakable' is certainly derived from the verb, and particularly close to the aorist ἐαγήν. From this passage, Hesychius, or whichever author was Hesychius's source, inferred a noun ἄγος· κλάσμα, θραῦσμα 'fragment', also found in *EM*.

The chronological gap need not always be so strikingly large. We saw above that an interpretation of πάθος vs. πένθος as parallel to κράτος vs. κρέτος is unsatisfactory; similarly, a derivation of πάθος from the aorist παθεῖν is impossible since such a pattern of derivation is not established. Bearing in mind that πάθος first occurs in tragedy and looks as if it were created additionally to πένθος, the most natural interpretation is to regard πάθος as being derived from (deverbative) compounds in -παθής like αἰνοπαθής (*Od.* 18.201).

Compounds in -γηθής are frequent in poetry since πολυγηθής 'very glad' *Il.* 21.450 and they look as if they were derived from the verb as attested in γήθησα, γηθέω.[115] Of course, the normal word for

[114] This does not exclude the possibility that Gk. once had a noun φλέγος; it is quite conceivable that φλέγος was lost and recreated at a late stage from -φλεγής.

[115] Cf. also Tucker (1990) 63.

'joy' is γηθοσύνη, occurring first in *Il.* 13.29. However, an s-stem noun γῆθος appears in Hellenistic Greek. First attested in Epicurus *fr.* 43, it also occurs in Plutarch, Lucian, and other Hellenistic prose writers. Again, the natural conclusion is that γῆθος is younger than γηθοσύνη and secondarily derived from compounds in -γηθής.

Sometimes, the very nature of the texts in which such late nouns in -ος are found suggests this derivational sequence, and the same pattern will hold true for a considerable number of further examples:

(a) ἀλθαίνω, ἀλθεῖν 'heal' *Il.*+ > (εὐ-)αλθής 'easily healed' Hp.+ > ἄλθος· φάρμακον Hsch.;

(b) (πυρ-)αυγής '(fiery) bright' h. Hom. > αὖγος (= αὐγή) Apocr. Act. Thom., Malalas;[116]

(c) αὔχη 'boasting, pride' Pi., αὐχέω 'boast' *Batr.*, A.+ > (κενε-)αυχής 'vain-glorious' *Il.*+ > αὖχος 'boast, glory', found in ΣA.;

(d) βλάπτω, ἐβλάβην *Il.*+ > (ἀ-)βλαβής '(un)hurt' h. Hom., Sappho, A.+ > βλάβος 'damage' E.+;

(e) βρίθω 'I am laden, heavy' *Il.*+ > (ἐπι-)βριθής 'heavy (upon)' A. > βρῖθος 'weight' E.+;[117]

(f) δρύπτω 'tear' *Il.*+ > (ἀμφι-)δρυφής 'torn (on both sides)' *Il.*+ > δρύφη· ξέσματα Hsch.;

(g) (πολυ-)ηχής 'loud-sounding' *Il.*+ > ἦχος 'sound' *LXX*, *NT*;

(h) θέλγω 'charm' *Il.*+ > (παν-)θελγής 'all-charming' Nonn. > θέλγος 'charm' Psell.;

(i) λανθάνω, ἔλαθον 'escape notice' *Il.*+ > ἀληθής, Dor. ἀλαθής 'clear, true, i.e. unforgotten' *Il.*+, but also, in *Il.* 12.433 'not forgetting, careful' > λᾶθος 'forgetfulness' Theocr. = λήθη, λάθα;

(j) μείρομαι, εἵμαρμαι 'receive as one's share' > εὐμαρής 'convenient' Sappho, Alc.; this could be reinterpreted as 'easy to handle' hence the remarkable μάρος 'hand' Pi.;[118]

[116] αὖγος also occurs in Hesychius but the passage is corrupt and as it means 'τὸ πρῶτον φῶς' it may well not be genuine but rather a dialectal form of the word for 'dawn', cf. Aeolic αὔως, with γ standing for the digamma, indicating a glide.

[117] The root forms a Caland system (cf. βριθύς), and βρῖθος may be independent of the existence of -βριθής.

[118] See Forssman (1966) 135 ff.

(k) *μισέω*, Hom. only *μίσησε* 'hate' > (*παντο-*)*μισής* 'hated by all' A.+ > *μῖσος* 'hatred' A.+; the word occurs perhaps once in Herodotus, otherwise it is only found in Attic;

(l) *ῥέω* 'flow' *Il.*+ > *εὐρρεής* 'well-flowing' Hom., Hes. > *ῥέος* 'stream' A.;

(m) *σίνομαι* 'harm, hurt' *Od.*+ > *ἀσινής* 'unhurt' *Od.*+ > *σῖνος* 'injury, plague' A.+;

(n) *σκέπας* 'shelter' *Od.*+ > (*ἀνεμο-*)*σκεπής* 'sheltering (from the wind)' *Il.*; > *σκέπος* 'shelter' *EM*;

(o) *στέφω* 'put round' *Il.*+ > (*ἐπι-*)*στεφής* 'decorated, garlanded' *Il.*+ > *στέφος* 'crown, garland' A.+;

(p) *στρέφω* 'turn, twist' *Il.*+ > (*εὐ-*)*στρεφής* 'well-twisted' *Il.*+ > *στρέφος· στρέμμα* Hsch.;

(q) *στυγέω*, *ἔστυγον* 'hate' *Il.*+ > (*βροτο-*)*στυγής* 'hated by men' A.+ > *στύγος* 'hatred', A., A.R., *AP*;

(r) *τέρπω* 'delight, gladden' *Il.*+ > (*ἀ-*)*τερπής* *Il.*+ 'unpleasant, joyless' > *τέρπος* 'joy' *Suppl. Epigr.* 3.774.8;

(s) *τρυγάω* 'harvest, gather' *Od.*+ > *ἀτρυγής* 'unharvested' Anth. P. > *τρύγος* 'harvest' Antioch. Astr. in *Cat.Cod.Astr.* 7.126+;

(t) *ὑφαίνω*, *ὑφάω* 'weave' *Od.*+ (or *ὑφή* 'web' A.+) > *εὐυφής* 'well-woven' S.+ > *ὕφος* 'web' Pherec.;

(u) *φλέγω* 'burn' *Il.*+ > (*ζα-*)*φλεγής* 'burning fiercely' *Il.*+ > *φλέγος· τὸ φλέγμα* (Hsch.);

(v) *χάσκω*, *ἔχανον* 'yawn, gape' *Il.*+ > (*ἀ-*)*χανής* 'not yawning' Parm.+ > *χάνος* 'mouth' Com. Adesp. 1193.

Other neuter nouns in *-ος* may be simple rhyming formations, echoing attested nouns and supported by the existence of corresponding compounds in *-ης*. From *ἐκάην* 'was burnt' we find compounds in *-καής* like *περι-καής* 'burnt at the sides' (Hp. *Coac.* 154) or *δια-καής* 'burnt through' (Thphr. *Vent.* 21+) which, although relatively late, seem to be totally inconspicuous formations. Cornutus (*ND* 17) has a noun *κάος* which may well be secondarily derived from *-καής*. However, Cornutus uses *κάος* as the etymology of *χάος* and it may be that the former was coined after the latter. Nevertheless, it seems certain that compounds in *-καής* at least helped this creation. On the same note, *μάθος* is found in Alc. 371.1 and Ar. *fr.* 814 (dubious). It was perhaps created out of compounds in *-μαθής*

(*εὐμαθής* A.+ etc.) and as a rhyming formation after *πάθος*, cf. *παθήματα*: *μαθήματα* A. *Ag.* 177. The case here is weaker, of course, since the first attestation of *μάθος* precedes that of *πάθος* and *-μαθής* by *c.*100 years.

Apart from mere chronology, the frequency and nature of the attestation must also be considered. It is striking that very many of these nouns are attested not only later than the compound adjectives but are also very rare. Thus, a word *σφάλος* 'fault' occurs only in Trag. Oxy. 676.16 (< *-σφαλής*, *Il.*+). Other neuter nouns in *-ος* are limited to a certain author; *λίβος* 'tear' only occurs in Aeschylus and is a back-formation from a compound like *φονολιβής* 'dripping with blood', also in A. Another good example is *πλέκος* 'wicker-work' or 'basket' which is shown to be recent by the fact that it is only found in Aristophanes and chronologically secondary to deverbative compounds like *εὐπλεκής* 'well-woven' (*Il.*+). *κάος* and *αὖγος* have already been mentioned, and they are only found in the authors cited above; the same holds true, of course, for the glosses found in Hesychius. All these words give the distinct impression of being *ad hoc* formations.

Likewise, *δρύφη· ξέσματα* Hsch., *θέλγος* 'charm' (only in Psell.), *λᾶθος* 'forgetfulness' *hapax* Theocr. 23.24, *μάρος* 'hand' *hapax* Pi. *fr.* 310, *μεῖδος· γέλως* Hsch., *σῖνος* 'hurt, harm' (A.+; the word seems to be Ionic as it is frequent in Hdt. and tragedy but practically absent from Attic prose), *σκέπος* 'shelter', *hapax EM* 597.19, *στέφος* 'crown, garland', only found in tragedy (A.+) and in late Hellenistic prose, *στρέφος· στρέμμα* Hsch., *στύγος* 'hatred' only in A., A.R., and *AP*, *τέρπος* 'delight' *hapax* in *Suppl. Epigr.* 3.774.8 (Itanus, first century BC/ first century AD), *χάνος* 'mouth' *hapax* Com. Adesp. 1193 owe their existence to pre-existing compounds.

Morphology may also be an indicator that a noun in *-ος* is a secondary creation. The zero grade of *πάθος* clearly shows it to be secondary when compared with *πένθος* and this is confirmed by the chronology of attestation as we have seen. Instructive, too, is the case of *δράκος* 'eye'. It is only attested late and looks very much like an *ad hoc* formation, occurring only in Nicander. If the formation were old, we would expect *δέρκος* (of which there is no trace). *δράκος* is almost certainly a back-formation from the compound *εὐδρακής* 'well-observing', 'sharp-sighted'. This deverbative compound is

attested much earlier (Sophocles) and could be taken by Nicander as 'having a good eye', showing the same ambiguity between a *bahuvrīhi* and verbal governing compound as seen in διογενής (see Chapter 4). It is furthermore remarkable that the 'correct' (from the point of view of historical morphology) full grade as in τρέφος 'nursling, creature' occurs only—but then always!—when the s-stem compounds have full grade (as εὐτρεφής from τρέφω) as well. Needless to say, compounds in -τρεφής are extremely frequent since Homer whereas τρέφος occurs only in one Sophocles fragment (154) and as a conjecture in one Euripides fragment (472a.1) and thus is chronologically later and of very limited attestation; its creation may have been helped by the practically synonymous βρέφος.

In other cases, the s-stem noun is not only attested later but is also morphologically secondary. Hesychius's φλέγος from a reinterpreted (ζα-)φλεγής : φλέγω has already been mentioned. φλέγος is clearly secondary to the root noun φλόξ for which there is also evidence from Sanskrit. Along the same lines, ῥέος 'stream' may well be Aeschylus's creation after εὐρρεής from ῥέω and is exclusive to him (and to the twelfth-century AD writer Joannes Tzetzes). The older, Homeric and universal Greek word for stream is, of course, ῥοή. In a few cases, this line of reasoning can even be proven beyond reasonable doubt: 'night' in Greek is universally νύξ. Yet, in Sextus Empiricus we find a neuter noun νύχος which can only be a back-formation from the compound εἰνάνυχες 'nine nights long' which itself is almost certainly an analogical formation based on εἰνάετες 'nine years long', on which see section 4.10. Likewise, αὖχος 'glory' Σ A. is secondary compared with the abstract noun αὐχή Pi.+, στέφος 'crown, garland' is younger (A.+) than στέφανος (*Il.*+) which is formed with a not very productive suffix but which is much more common than στέφος. τρύγος Antioch. Astr. in *Cat.Cod.Astr.* 7.126, *Et. Gud.*, Gloss. is not only much later than τρύγη *h. Hom.*+ but is also inexplicable on the basis of τρυγάω and χάνος Com. Adesp. 1193 is a later formation than χάσμα Parm.+.

A final, but less reliable, criterion for determining a noun in -ος as secondary is semantics. It is striking that nouns in -ος that fulfil one or more of the criteria set out above often share the distinctly passive semantics with their compositional counterparts. Thus ἀβλαβής 'undamaged' gives rise to βλάβος which can on a number of occasions

be contrasted with *βλάβη* '(active) damage'. Compare the following examples: E. *Ion* 520: *ἦ σ' ἔμηνε θεοῦ τις, ὦ ξένε, βλάβη* 'O stranger, has some damaging act of a god enraged you?', where *βλάβη* indicates the evil which a divine power inflicts on the human. In late Classical Greek, *βλάβη* also comes to mean 'damage' in a legal sense, covering both aspects but it still remains semantically distinguished from *βλάβος*. D. 21.43 reads *οἱ περὶ τῆς βλάβης οὗτοι νόμοι πάντες . . . , ἂν μὲν ἑκὼν βλάψῃ, διπλοῦν, ἂν δ' ἄκων, ἁπλοῦν τὸ βλάβος κελεύουσιν ἐκτίνειν*. 'All these laws about "damage" [i.e. the offence as committed by the perpetrator and as suffered by the victim] order to pay back double the damage [done] if it was done on purpose and just the damage if done unwittingly'. It is only in Hellenistic Greek that *βλάβη* comes to mean 'damage done'; Plu. *Sol.* 24 *βλάβη τετραπόδων* can be understood as 'damaging act of cattle' as well as 'damage done by cattle'. This means that the fine semantic distinction between the two words becomes obscure and *βλάβος* subsequently dies out. The same holds true for *στέφος* 'crown, garland' A.+, *στρέφος· στρέμμα* i.e. 'that which is turned/twisted', Hsch.

However, this distinction between an active formation in *-η/-ο-* vs. a passive one in *-ος* can be paralleled in a small number of other formations and the case is thus not entirely straightforward. More important are cases where the secondary s-stem noun is distinctly active since this is not typical for s-stem nouns. Thus, *δράκος* 'eye', *ἄλθος* 'remedy', *λᾶθος* 'forgetting', *μάθος* 'act of learning' are all remarkable from a semantic point of view.

Conclusion: a Derivational Cycle

The evidence analysed in the preceding section very strongly suggests a secondary derivation of neuter s-stem nouns from pre-existing compound adjectives in *-ης*. This evidence is not, and cannot be, absolutely conclusive. Strictly speaking, we are dealing with *argumenta e silentio* and the absence of early evidence for these neuter nouns is not evidence of their non-existence. But both the mass and the uniformity of the evidence justify the claim that a considerable number of neuter nouns in *-ος* are back-formed from adjectives in *-ης*. Individual cases might conceivably have been misinterpreted. Thus, if the gloss *βάγος· κλάσμα ἀρτοῦ* 'piece of bread' found in

Hesychius is genuine and if *βάγος* represents *ϝάγος* and is thus to be connected with *ἄγος* 'fragment' (and not with the famous Phrygian *βεκος* 'bread', cf. the *locus classicus* Hdt. 2.2) then both terms, belonging to different dialects, may well be old.

But if the suggestions presented here are correct in principle, it follows that beside the inherited derivational model noun in *-ος* > adjective in *-ης* the reverse process was also established in Greek. This means that s-stem nouns and adjectives are in a derivational cycle which can be seen as partly responsible for the fact that both categories are flourishing throughout the Classical period, albeit to a different extent; together they form a very close derivational subsystem.

On the basis of these observations and those made earlier we can now define two groups of new neuter nouns in *-ος*. In an early phase of Greek, the full grade neuter nouns that existed alongside 'Caland' (mostly u-stem) adjectives are remodelled after these adjectives. This is the type *κρέτος*/*κράτος*. This process is already pre-Homeric and was completed in early Attic. It may be that some other zero grade s-stem nouns in a Caland context belong here. Thus, *τάρβος* (*Il.* 24. 152 and 181) may have been influenced by *ἀταρβής* or by the very frequent *τάρβησα*; the root only appears in the zero grade in Greek (also *ταρβαλέος h. Merc.* 165+). Alternatively, a form **τέρβος* may never have existed and *τάρβος* could be a back-formation; the latter seems the preferable explanation in view of the rarity of *τάρβος*. After the deverbative derivation of s-stem adjectives was fully established and had become a productive category of word formation, new nouns were created as back-formations from such adjectives; only in very few cases were these created in parallel to existing nouns (*πένθος* vs. *πάθος*).

In sum, the view that s-stem nouns were not productive in Greek needs to be modified. It seems likely that there were no independent formations of this sort (other than borrowings) but such nouns do occur as back-formations from compound adjectives in *-ης* and as rhyming formations to existing s-stem nouns.

2.5 INTERCHANGE BETWEEN O/Ā-STEMS AND S-STEMS

The above mechanism is the main way of creating new s-stem nouns in Greek. However, a transition from o- or ā-stems to s-stems is

otherwise not unknown. The most fascinating problem is created by three Greek words meaning 'wool, fleece'. The inherited word for 'wool', λῆνος, has been the subject of much entertaining discussion (though unfortunately not concerning its stem formation).[119] The word is an ā-stem in practically all languages where it is attested (Lat. *lāna*, Lith. *vìlna*, Goth. *wulla*, Skt. *úrṇā* etc.) and it would be very hard to posit that the Greek s-stem is inherited. In Greek, the word first appears in A. and remains rare. It has been argued that it was influenced by a second word, ἔριος 'wool, fleece' which is plausible in principle, but this word is very rare. It only surfaces twice in the *Od.* but we seem to have a derivative in Myc. *we-we-e-a* belonging here, pointing to an s-stem just like the Attic adjective of material ἐρεοῦς.[120] Otherwise, and in particular in compounds, there is evidence only for a thematic stem: εὔ-ειρος 'with pretty wool' (Hp.+), εἴριον (*Il.*+) 'wool' etc. It seems, then, that this word was an s-stem in origin and as such responsible for the change of the inherited ā-stem to λῆνος before it itself became an o-stem, arguably under the influence of a third word, πόκος 'fleece' (*Il.*+) which then superseded it completely. The lack of evidence renders this chain of mutual influence uncheckable but it is questionable whether a word as rare as ἔριος influenced the inherited word for wool. But let us not forget that λῆνος is only attested in the Classical period though it must continue an ancient formation. The common Attic-Ionic word for wool is ἔριον, of course; this is used, in all registers also in the pl. ἔρια without any perceptible difference in meaning. Perhaps it is more likely, then, that Aeschylus reinterpreted an obsolete *λήνη, this being the direct continuant (possibly with retraction of the accent) of the inherited ā-stem as pl. from which a new sg. λῆνος was then back-formed.

In later Greek, existing o- or ā-stem nouns are occasionally re-interpreted as s-stem nouns:

(a) ὁ γάρος 'sauce' A.+ vs. τὸ γάρον Str. 3.4.6 and τὸ γάρος *POxy.* 937.27 (3rd cent. AD);
(b) ὁ ἔλεος 'pity' *Il.* + but τὸ ἔλεος Plb. 1.88.2 and frequently in *LXX*;

[119] See above all Lindeman and Berg (1995) with further references.
[120] See Lejeune (1972*b*) 98 and 100.

(c) dat. pl. *ἔργεσι* in Epigr. Gr. 343 vs. normal *ἔργον*;
(d) *ὁ ζῆλος* 'jealousy' Hes.+ but *τὸ ζῆλος* frequently in *LXX*, *NT* (*Ep.Phil.* 3.6+);
(e) *ἦχος* 'sound' masc. Arist.+ but neut. in *LXX*, *NT*;
(f) *ὁ κλάδος* 'branch' A.+, but dat. pl. *κλάδεσι* Ar. *Av.* 239, gen. pl. *κλαδέων* doubtful in Philox. 1.3, dat. pl. *κλαδέεσσι* (sic!) in Nic. *fr.* 74.19, nom. sg. *τὸ κλάδος* in Byzantine Greek (Method.);
(g) *ὁ κύμβος* 'cup' (Nic. *Th.* 526) but dat. sg. *κύμβει* (*varia lectio* dat. pl. *κύμβεσι*) in Nic. *Al.* 129;
(h) *ὄχος* 'carriage' is neuter in Homer (occurring only in the plural, even for a single chariot); slightly later, in the hymns, the word is an o-stem (*ἐπὶ χρυσέοισιν ὄχοισιν h. Cer.* 19); the unambiguous masc. sg. *ὄχος* first occurs in Pi. *O.* 6.24 (in a form *ὄκχος*), A. *Ag.* 1070;
(i) *πάγος* 'rock, frost' (Hom.+) but neuter in Hp. *Hebd.* 6, dat. pl. *πάγεσι* Arist. *Probl.* 907[a]9, dat. sg. *πάγει* D.S. 3.34.7 (*varia lectio πάγοι*);
(j) dat. sg. *ῥίπει* 'mat' *varia lectio* in Hdt. 2.96 (codices A, B for *ῥιπί* al.), *ὁ ῥῖπος* in Aen. Tac. 29.6, this being the normal form in late Classical and Hellenistic Greek;
(k) Hom. *τὰ ῥύπα*, sg. *ῥύπον* A.+ vs. *τὸ ῥύπος* 'filth' Hipp. *Mul.* 1.64;
(l) *ὁ σκότος* 'darkness, gloom' *Il.*+ vs. *τὸ σκότος* Pi. *fr.* 98b, 234.5, Hdt. 2.121+, Th. 8.42.1, Pl. *R.* 516e+, X. *An.* 2.5.9+ and consistently in *LXX* and *NT*; in tragedy, *τὸ σκότος* is sometimes attested as *varia lectio* (e.g. E. *Hec.* 831, S. *OC* 40); *σκοτεινός* 'dark' may < **σκοτεσ-νος* A. *Ch.* 661+, but see n. 124;
(m) *ὁ πλοῦτος* 'wealth' *Il.*+ vs. *τὸ πλοῦτος* in *NT* (*2Ep.Cor.* 8.2 and frequently as *varia lectio* elsewhere);
(n) *ὁ σκύφος* 'cup' (*Od.*+) is the normal form in older Greek but *τὸ σκύφος* is found as early as Epich. 83, also Ion. *fr.*. 26 and frequently in E.;
(o) *ὁ στίβος* 'path' h. Hom.+ but *τὸ στίβος* in Origenes;
(p) *τὸ τάριχος* (Ar. *Eq.* 1247+), pl. *ταρίχη* Gal. 6.747, Hermipp. 63.5 in the meaning 'dried fish' vs. *ὁ τάριχος* 'dead body' Hdt. 9.120, 'dry character' Ar. *fr.* 200+, also *τὸ τάριχον*

Anaxandr. 50+; according to *AB* 309.14 the masculine is Ionic, the neuter Attic; in fact, only in Herodotus is the word always masculine. Outside Herodotus, the word is masculine when it is metaphorically applied to a person in comedy.

Some of these can easily be explained. The majority of thematic nouns are reinterpreted as s-stem nouns only in Roman and Byzantine times when the entire declensional system is in flux and, crucially, the articulation of final *-ς* and *-ν* is weakened.[121] Others are considerably more ancient. Still, *τὸ ὄχος* must be, despite its occurrence in Homer, a secondary formation. The o-grade of the root cannot be old, and already Parmentier[122] explained it as a conflation of *ὁ ὄχος* and *τὸ ἔχος*, attested in the old-looking *ἔχεσφιν· ἅρμασιν* Hsch. The o-stem **u̯og^{h}o-* is also found in OCS *vozŭ* 'chariot'[123] and Mycenaean has a formation *wo-ka wok^{h}ā* 'chariot, vehicle' (PY Sa 487+). Other words like *τάριχος*, *κύμβος* stand a good chance of being loanwords. Yet other words can be explained, with varying degrees of likelihood, as due to analogical influence. Thus, Fraenkel[124] thought that *σκότος* became neuter under the influence of the near-synonyms *ἔρεβος*, *κνέφας* and the antonym *φάος*. As might be expected, 'light and darkness' form a frequent collocation, consider e.g. Pi. *fr.* 98b:

θεῷ δὲ δυνατὸν μελαίνας
ἐκ νυκτὸς ἀμίαντον ὄρσαι φάος
κελαινεφέι δὲ σκότει
καλύψαι σέλας καθαρὸν
ἀμέρας

It is possible for a god to raise faultless light out of black night, and to hide the pure daylight in cloud-wrapped darkness.

[121] See Gignac (1976) 131 f., (1981) 43 f., 66 ff.; Horrocks (1997) 113.

[122] Parmentier (1889) 169.

[123] The existence of *ἔχεσφιν*, combined with Skt. *váhas* would permit the reconstruction of a Narten type noun. However, this is immediately rendered implausible by the fact that the underlying verb is not of the Narten type. See also Euler (1979) 225.

[124] Fraenkel (1910) 196. An exhaustive discussion of the problem is found in Egli (1954) 64 ff. who also argues that *σκοτεινός* in no way proves the existence of *σκότος* as a neuter noun.

In other cases, this line of argument is less convincing. Egli[125] explained *τὸ σκύφος* as influenced by *κύτος* or as due to rhyme with *ὖφος* Pher.+ and *τρύφος* Hdt.+. These are mere possibilities and, given the chronology of attestations, not very likely.

Interestingly, it would appear that the neuter gender in one group of such nouns can be put down to the influence of deverbative adjectives in *-ης*. *ἐλέησα* > *νηλεής* 'pitiless' > *τὸ ἔλεος*;[126] *ἔστιβον* > *ἀστιβής* 'untrodden' > *τὸ στίβος* 'path'; *ἐπάγην* > *-παγής* > *τὸ πάγος*. Without exception, the compound adjectives are attested considerably earlier than the neuter nouns: *νηλεής*, *-παγής* are Homeric, *ἀστιβής* is frequent since Aeschylus. Thus, it may well be that a number of thematic nouns were reinterpreted as s-stem nouns because of the existence of s-stem compounds. If this is correct, then this is another indicator for the influence that the very productive class of compound adjectives in *-ης* has exercised on the formation of nouns.

2.6 THE SEMANTICS OF DEADJECTIVAL S-STEM NOUNS

Introduction

In the preceding sections the argument was put forward that a number of neuter s-stem nouns are likely to be of secondary origin, and most of them are decompositional formations. In this section we shall look at the semantics of s-stem nouns from so-called primarily adjectival roots, i.e. such roots whose primary derivatives are adjectives (e.g. *βαρύς* 'heavy', with the abstract noun *βάρος*) and that do not form verbs or only verbs that are highly marked with a stative suffix *vel sim.* It will become clear that some of these formations are likely to be secondary formations as well. Some research has already

[125] Egli (1954) 75 ff.

[126] The existence of *ἐλεεινός* does not prove that the word was originally neuter; such adjectives are not always derived from neuter s-stem nouns. Rather, the suffix has developed a certain productivity of its own, cf. *σκοτεινός* above, but also *ἐρατεινός* *Il.* < *ἐρατός*, *κελαδεινός* *Il.*+ < *κέλαδος*. It is possible, of course, that the neuter s-stem nouns are re-creations on the basis of such adjectives.

been done on the subject[127] but it is worth looking at the problem both in more detail and in a more general context. It is important to keep in mind that nouns derived from adjectives or 'primarily adjectival roots' are, first of all, abstract nouns by their very nature as is shown by the great majority of Greek formations. Thus, *τάχος* (: *ταχύς*) means 'speed', *κακία* (: *κακός*) 'badness' etc. This rule is not without exceptions. Some of the formations in *-ος* are clearly concrete in meaning inasmuch as they refer to objects in the real world, e.g. *γλεῦκος* does not normally mean 'sweetness' but 'sweet wine', and this is attested as early as Myc. *de-re-u-ko*.[128] This is very much the exception, however, and it seems tempting to regard these as secondary semantic developments. On the whole, one would thus expect the semantics of the suffix to be better defined in these 'deadjectival' nouns in *-ος* than in the 'deverbative' formations. However, from the earliest attestations onward, formations in *-τητ-* compete with *-εσ-/-ος*; both *ταχύτης* and *τάχος* are attested from Homer onwards. In non-Caland adjectives, *-τητ-* and *-ία* are the two main contenders and it seems difficult to establish any chronological or semantic difference between these formations; *κακότης* and *κακία* both indicate a bad quality as well as an evil character. By way of contrast, there is a clear semantic distinction between formations in *-εσ-/-ος* and those in *-τητ-* and an illumination of the differences can help prove that some *-ος* nouns are definitely secondary with respect to the *-τητ-* formations. In Homer, only one pair of formations in *-εσ-/-ος* vs. *-τητ-* is attested, *τάχος* vs. *ταχυτής*.[129] Chantraine notes '*Ταχυτής* et *τάχος* semblent pourtant se distinguer: *ταχυτής* désigne la vitesse en tant que qualité abstraite, à l'état pur: *Il.* 23.740 *Πηλείδης δ'αἶψ'*

[127] de Lamberterie (1989), Meißner (1998*a*).

[128] The meaning 'sweetness' is unambiguously found only in Arist. *Pr.* 931[a]18.

[129] This and other nouns in *-της* are sometimes oxytone, sometimes paroxytone, depending on the individual word and even individual authors: *ταχυτής* is Homeric, Attic has both *ταχυτής* and *ταχύτης*. These oscillations could easily be explained as levellings of the paradigm as a result of Vendryès's Law which operated in the oblique cases, i. e. *ταχυτής, ταχύτητος* < *ταχυτῆτος*. In fact, this is problematic as the law only operates in Attic but Homer has *νεότης, κακότης* etc., see Risch (1974) 150, unless one is prepared to assume that the Attic accentuation got into the text secondarily.

ἄλλα τιθεῖ ταχυτῆτος ἄεθλα "le fils de Pélée aussitôt proposait d'autres prix de vitesse". Mais en Ψ 406 οἷσιν Ἀθήνη | νῦν ὤρεξε τάχος "à qui Athéné maintenant a donné la vitesse". '[130] However, it would appear that in *Od.* 17.315, the only other occurrence of ταχυτής in Homer, the word is used in a sense closer to that of τάχος in *Il.* 23.406 than to that of ταχυτής in *Il.* 23.740: αἶψά κε θηήσαιο ἰδὼν ταχυτῆτα καὶ ἀλκήν. 'You would at once be astonished when you have seen his quickness and strength.'

The difference between τάχος and ταχυτής thus has to be defined in slightly different terms. What seems essentially the correct explanation and definition was given in a very short article by de Lamberterie in 1989. It is worth considering more closely his line of reasoning as well as the evidence with which he did not deal in detail.

First, he pointed out that nouns in -εσ-/-ος are formed from antonymic pairs like ταχύς 'quick' : βραδύς 'slow'. Sometimes, the adjectives yield both types of abstract nouns, as in the case of τάχος and ταχυτής, sometimes only one formation exists, e.g. alongside πολύς we only have πλῆθος, a form *πολύτης does not exist. Conversely, from βραδύς, βραδύτης is the normal form, βράδος being extremely rare. But the distribution is not accidental: adjectives like 'quick', 'broad', 'wide', 'heavy', 'high', 'large', 'numerous' and their opposites are implicitly graded antonyms. The positive term also functions as the unmarked term. While 'slowness' only indicates the fact of being slow, 'speed' is an ambiguous term. It indicates the quality of being fast, cf. expressions like κατὰ τάχος 'with speed' but it is also the unmarked term: it is perfectly possible to speak of 'slow speed', and speed (*vitesse*, τάχος) is different in meaning from quickness (*célérité*, ταχύτης), or, in Aristotle's words (*Metaph.* 1052^{b}31): ἔστι γάρ τι τάχος καὶ τοῦ βραδέος 'even the slow has some speed'. Of course, at the positive end τάχος and ταχύτης can come to refer to the same thing but ταχύτης can never mean 'speed' as the principally ambiguous unmarked term.

Thus far de Lamberterie's undoubtedly correct argumentation. Looking at the distribution of the suffixes, it follows that there is no place in the system for formations like βράδος, as 'slowness' is a

[130] Chantraine (1933) 418.

physical quality, a clearly marked term. This has important consequences, for it is clearly not satisfactory to describe *τάχος* as the abstract noun of *ταχύς*, given that its semantic content is different. The adjective always describes that actual quality of being fast and is thus unambiguous. This situation is clearly language-specific. In English, the adjectives too can often come close to being the unmarked term. 'How wide is the room' does not imply that the room is wide. Still, there is a noticeable difference between *wide* and *width* and English is different to, say, French and Greek. *De quelle largeur est cette chambre* would be the closest rendering, an adjectival construction being impossible. Likewise in Greek, 'X is so-and-so long' is regularly expressed as '*Χἐστι τόσον μῆκος*' etc.[131] In English, the old abstract nouns from adjectives formed with the suffix Proto-Germanic **-ipō* > Eng. *-th* (with umlaut of the preceding vowel if possible), e.g. *depth* (Goth. *diupiþa*), length, strength etc. were formed only from 'positive' terms and are semantically ambivalent. The 'negative' abstract nouns, usually formed with the suffix *-ness* (like *shallowness*, *shortness*, *weakness*), seem more clearly marked and are unambiguous.

Yet it is evident that *βράδος* exists and in order to provide a rationale it is first necessary to examine the actual attestations of formations in *-εσ-/-ος* vs. those in *-της*. At the same time we shall contrast pairs like *τάχος* vs. *ταχύτης* with pairs like *βράδος* vs. *βραδύτης*. The analysis is based on the evidence from Greek texts from Homer until the turn of the eras; in addition, the New Testament and the scholia of Classical authors, are also taken into account, as are the two lexicographical sources Hesychius and Suda.

βράδος vs. *βραδύτης* and *τάχος* vs. *ταχύτης*

As expected, *βραδύτης* is the normal word to express 'slowness', *βράδος* being extremely rare: the statistics within the limits set out above are 127 : 5 (maximum, but possibly only 3) in favour of *βραδύτης*. Before the turn of the eras, *βράδος* is attested at best twice. (Pseudo?)-Xen. *De re equestri* 11.12.2 reads *ἦν δὲ ἐξεγείρας*

[131] Cf. e.g. *Od.* 9. 324 *τόσσον ἔην μῆκος, τόσσον πάχος εἰσοράασθαι* 'it was so huge in length and in breadth to look upon'.

τὸν ἵππον ἡγῇ μήτε τῷ ἄγαν τάχει μήτε τῷ ἄγαν βράδει . . ., 'But if you rouse your horse and lead neither too fast nor too slowly. . .'.

However, the transmission of the text is not unambiguous. Some (good) codices have *βραδεῖ*, neut. dat. sg. of the adjective *βραδύς*, and Marchant emended the text to *τῷ ταχεῖ . . . τῷ βραδεῖ* although in the case of the former the tradition only has *τάχει*. Both expressions would be somewhat unusual. The noun *τάχος* does not normally have the article (unless used to express the concept of speed); on the other hand, an expression like *τῷ ταχεῖ* has, to my knowledge, no parallels. The case must remain undecided but this passage from Xenophon does not provide any proof with regard to the existence of *βράδος*.

In Epicurus, *Epistula ad Herodotum* 46.10 we read *βράδους γὰρ καὶ τάχους ἀντικοπὴ καὶ οὐκ ἀντικοπὴ ὁμοίωμα λαμβάνει*, 'For collision and not-collision take the semblance of slowness and quickness'. Here, about half the codices have *βραδυτῆτος*; this is clearly the *lectio facilior* but it may nevertheless be preferred.

The fifth-century AD philosopher Proclus makes it clear that *βράδος* is indeed an artificial formation (commentary on Plato's Timaeus 3.76.18):

τούτων τοίνυν οὕτως ἐχόντων τὸ μὲν ὅπως ἔχουσι τάχους καὶ βραδυτῆτος οἱ πλάνητες, οὐ ζητεῖ ὁ Πλάτων (δεῖται γὰρ πλείονος ἐπισκέψεως), ὅτι δὲ ἡ ἀποκατάστασις ἄλλη ἄλλων καὶ τῶν μὲν βραδυτέρα, τῶν δὲ θάττων, τοῦτο προστίθησι, τοῦ βράδους καὶ τῆς ταχυτῆτος ἢ παρὰ τὴν ἀνωμαλίαν τῶν κινήσεων ἐπιτελουμένων, ἤ, ὅπερ ἀληθέστερον, τῶν <μὲν> ἀστέρων πάντων ὁμοταχῶς φερομένων, τοῦ δὲ κύκλου πρὸς τὸν κύκλον ἔχοντος μείζω λόγον ἢ τοῦ χρόνου πρὸς τὸν χρόνον.

These [circular movements] being so, Plato does not seek [to establish] how the planets take part in speed and slowness – for this would need a greater examination – but only suggests that the time of revolution is different from one to the other, slower for some, quicker for others, the slowness and the quickness either being effected owing to the workings of irregular movements, or, closer to the truth, because all the stars revolve with the same speed, but an orbit has a stronger relationship to another orbit than the time to another time.

The whole passage is not easy to understand but even if the passage as a whole is not entirely clear, *βράδος* and *ταχύτης* are obviously

used as reversal of *βραδύτης* and *τάχος* used earlier on, either for simple variation of expression, or indeed to indicate the unusual character of the movement of these planets.

Apart from these instances, *βράδος* is attested in *Σ* Arist. *Av.* 1459.3 *Σ* Th. 2.18.3 and in one version of the *Historia Alexandri Magni* 2.6.1, none of which can be dated with any degree of certainty. Finally, Hesychius glosses *παρέλκυσις· βράδος, βραδύτης*.

The normal word for slowness is *βραδύτης*. It is attested once in Homer (*Il.* 19.411):

> *οὐδὲ γὰρ ἡμετέρῃ βραδυτῆτί τε νωχελίῃ τε*
> *Τρῶες ἐπ' ὤμοιιν Πατρόκλου τεύχε' ἔλοντο.*

It is not because of our slowness and sluggishness that the Trojans managed to take the armour from Patroklos' shoulders.

βραδύτης thus indicates the fact of being slow and has distinctly negative connotations. Cf. also e.g. Th. 5.75.3:

> *καὶ τὴν ὑπὸ τῶν Ἑλλήνων τότε ἐπιφερομένην αἰτίαν ἔς τε μαλακίαν διὰ τὴν ἐν τῇ νήσῳ ξυμφορὰν καὶ ἐς τὴν ἄλλην ἀβουλίαν τε καὶ βραδυτῆτα ἐνὶ ἔργῳ τούτῳ ἀπελύσαντο.*

(And) by this one deed they refuted the accusation brought forward by the Greeks of softness because of the disaster on the island and of other irresoluteness and slowness.

βραδύτης is a fairly frequent term in Classical philosophy; one quarter of all attestations of the word (32 out of 127) are found in Plato and Aristotle alone where, of course, it is often contrasted with 'quickness'. It is interesting to note that in these cases, the opposition is normally expressed by the pair *τάχος* – *βραδύτης*. Cf. Pl. *Cratylus* 412c3:

> *ἐπειδὴ γὰρ πορεύεται τὰ ὄντα, ἔνι μὲν ἄρ' αὐτοῖς τάχος, ἔνι δὲ βραδυτής.*

For since the things move, they inherently have quickness and slowness.

In this kind of binary opposition it is always the negative term *βραδύτης* that is marked while the positive term is normally unmarked. Hence a pair *ταχύτης*: *βράδος* is extremely unusual and is attested only once in Greek literature (see the passage from Proclus above). Here too a passage by Plato confirms that *ταχύς* yields an

abstract noun *τάχος* while *βραδύς* yields *βραδύτης* (*Protagoras* 332b8):

καὶ εἴ τι μετὰ τάχους [*πράττεται*], *ταχέως* [*πράττεται*], *καὶ εἴ τι μετὰ βραδυτῆτος, βραδέως*;

And [is it not true that] if something [is done] with swiftness, [it is done] swiftly and if something [is done] with slowness, [it is done] slowly?

In this respect, the use of *-τητ-* is somewhat similar to the contrastive value of the *-τερο-* suffix.[132] When this is used as a contrastive suffix, originally only one of the contrasted elements is morphologically marked, cf. the well-known pairs *δεξιός* : *ἀριστερός* (*Il.* 7.238+) or *ἄρσην* vs. *θηλύτερος* (Parm.+). The 'right' and the 'male' are morphologically unmarked, while the 'left' and the 'female' are morphologically clearly marked with the help of the suffix *-τερο-*. In fact, both members can be marked, given that *δεξιτερός* and *ἀριστερός* both exist (but this does not seem to occur in situations where both are used, i.e. in a direct contrast), cf. also Lat. *dexter*, *sinister*. For purposes of emphasis, it can also be the right that is solely marked, cf. *σκαιός* : *δεξιτερός* *Il.* 1.501f. But *ἄρσην* does not even have a form with *-τερο-*, nor can *ἀριστερός* in the meaning 'left' occur without it. Double marking also occurs with *-τητ-*, cf. Aesop, *Geese and Swans* 60.5:

καὶ οἱ μὲν κύκνοι διὰ τὴν τοῦ σώματος ταχυτῆτα εὐθὺς πετασθέντες ἔφυγον, αἱ δὲ χῆνες τῇ ἑαυτῶν φυσικῇ βραδυτῆτι ἐπεχόμεναι ὑπὸ τῶν θηρευτῶν κατεσχέθησαν.

And the swans, because of the quickness of the body, spread wide (their wings) and fled but the geese were held back by their natural slowness and were caught by the hunters.

This usage is much rarer, though, than the double marking of *-τερο-* but it cannot be shown to be chronologically secondary.

The distribution of *τάχος* vs. *ταχύτης* is quite the opposite of that found in *βραδύτης* : *βράδος*. *τάχος* is much more frequent than *ταχύτης* (432 : 136 attestations). *τάχος* is the only form found in tragedy and practically also in historiography (although Herodotus

[132] See Benveniste (1948) 115 ff. for details.

has three instances of *ταχύτης*) whereas *ταχύτης*, although found twice in Homer (see above), is frequent only in philosophical and grammatical/lexicographical literature. These two genres alone account for 102 of the 136 attestations. Furthermore, *τάχος* is also the only form used in fixed expressions like *κατὰ τάχος*, *σὺν τάχει*.

ταχύτης thus can only be used to indicate actual or performed quickness, cf. the example from Aesop above, whereas *τάχος* can mean both 'quickness' and 'speed'. The distinction between the two terms becomes especially clear from Arist. *Physica* 228^{b}27:

ταχυτῆτι γὰρ καὶ βραδυτῆτι ἐνίοτε διώρισται : ἧς μὲν γὰρ τὸ αὐτὸ τάχος, ὁμαλής, ἧς δὲ μή, ἀνώμαλος.

It may at times be distinguished in its quickness or slowness, since a motion which is uniform in speed may be called uniform, and one which is not, varying.

βάρος **vs.** *βαρύτης*

A comparable distribution and use, but with further complications, is found for *βάρος* vs. *βαρύτης*. As expected, the former is much more frequent than the latter (644 : 139 times). *βάρος* occurs from Homer onwards and is widely found in epic, lyric, and tragic poetry but occurs only once in Herodotus, not at all in Thucydides nor oratory and seems only to take off in Classical philosophy, where, however, it is exceedingly frequent: *βάρος* is found ten times in Plato and several hundred times in Aristotle who accounts for half of all attestations of this word.

βαρύτης, on the other hand, is not attested in any form of poetry. Its first occurrence is in Thucydides but it becomes frequent only from Plato onwards. It seems that in late Hellenistic and Roman times *βαρύτης* gained substantial ground from *βάρος* (e.g. eleven attestations of *βαρύτης* vs. one of *βάρος* in Posidonius).[133] In sum, it seems that *βαρύτης* is significantly younger than *βάρος* which in early Greek is the only word in use for 'weight' and 'heaviness' and seems the natural nominal correspondent of the adjective *βαρύς*,[134] cf. E. *Hipp.* 621 *ἢ χρυσὸν ἢ σίδηρον ἢ χαλκοῦ βάρος*, 'be it gold or

[133] See Mignot (1972) 132 for details about the further history of the word.

[134] Indeed the very shape of *βάρος* is dependent on *βαρύς* since we would expect **δέρος*.

silver or heaviness of bronze [= heavy bronze]'. In accordance with de Lamberterie's argument, *βάρος* also signifies the concept of 'weight' regardless of whether the object in question is heavy or not. Thus, there is nothing odd to find Aristotle speaking of *βάρος μικρόν* (*De generatione animalium* 744^{b}8) or of *βάρος ἔλαττον* (*De caelo* 273^{a}32). *βαρύτης*, on the other hand, cannot refer to the concept of weight. Its usage partly overlaps with that of *βάρος*, but only in the meaning of (physical) heaviness. It often has a negative connotation, coming close to meaning 'cumbersomeness', cf. D.S. 33.27.1

ὅτι ὁ Αἰμίλιος ὁ ὕπατος διὰ τὴν βαρύτητα καὶ δυσκινησίαν τοῦ σώματος τῇ διὰ τὸν ὄγκον ὑπεροχῇ καὶ τῷ πλήθει τῶν περικεχυμένων σαρκῶν ἄχρηστος ἦν ἐν ταῖς κατὰ πόλεμον ἐνεργείαις

That Aemilius the consul, because of his heaviness and difficulty of movement [...], was useless in warfare.

In these instances, *βαρύτης* seems to be in a certain amount of variation with *βάρος* from a semantic point of view, cf. Aristotle *HA* 630^{b}30 *νεῖν δ' οὐ πάνυ δύναται διὰ τοῦ σώματος βάρος* 'but it cannot swim at all because of the weight of its body'.

The adjective *βαρύς* forms an antonymic pair with *κοῦφος* 'light'. As a noun, *κουφότης* is always the marked member as would be expected, and both *βάρος* (e.g. Arist. *De part. anim.* 646^{a}18) and *βαρύτης* (e.g. Arist. *Metaph.* 1022^{b}17) occur as its antonyms.

However, if *βαρύς* refers to voice and means 'grave' or 'low' and is thus opposed to *ὀξύς* 'acute', 'high', only *βαρύτης* and *ὀξύτης* occur as the corresponding nouns (e.g. Plato, *Theaet.* 163c1, Arist. *Poet.* 1456^{b}33). This fits particularly well with de Lamberterie's theory since *βαρύς* is part of a clear-cut two-way opposition (three-way if *τὸ μέσον* or *ὁμότονον* is counted as a tone); the *concept* of weight never plays a role here.

ὀξύτης itself is never interchangeable with *ὄξος* as the latter exclusively means 'sour wine' or 'vinegar', perhaps via a meaning 'acid'. This is entirely in line with comparable deadjectival noun formations expressing taste sensations, *γλεῦκος*, Myc. *de-re-u-ko* KN Uc 160 'sweet wine', and *ἦδος* (*γᾶδος* Hsch.) '(sweet?) vinegar', all referring to some sort of wine or wine product. *ὀξύτης* has a range of meanings, 'sharpness' as in Arist. *HA* 492^{a}4 *ὀξύτητα ὄψεως* 'sharpness of

the sight' as well as 'quickness', cf. Arist. *HA* 591[b]29 *τοῦ δελφῖνος ὀξύτης* 'the quickness of the dolphin'. It would be very interesting to ascertain whether *ὀξύτης*, given that *ὄξος* is unavailable here because of its semantic specialization, can serve as the unmarked term and refer to the concept of sharpness. Regrettably, there is no instance where this appears to be the meaning.

βένθος/*βάθος* vs. *βαθύτης*

The differences between *βένθος* and *βάθος* were outlined above and need not be repeated here. The latter is clearly the dominant term and *βαθύτης* does not exist before the first century BC, and on the rare occasions when it is used, it normally refers to mental profundity, depth of character, cf. the frequent expression *βαθύτης νοῦ* 'depth of thought/mind' (e.g. Origenes *In Caten* 72.3) or *βαθύτης τῶν λόγων* 'profundity of words' (Proclus *In Platonis Parmenidem* 682.7). *βαθύτης* in the spatial meaning 'depth' seems to occur only once in the pseudo-Hippocratic treatise *Prorrheticon* 2.19.6 *τῶν ἑλκέων σηπεδόνας βαθυτῆτας* 'the degree of decay and depth of the wounds'.

βράχος and *βραχύτης*

To begin with, in Classical times we only find a plural *βράχεα* and *βραχύτης*. The latter is the only term used to express 'shortness', e.g. Th. 1.138.3

καὶ τὸ ξύμπαν εἰπεῖν φύσεως μὲν δυνάμει, μελέτης δὲ βραχύτητι κράτιστος δὴ οὗτος αὐτοσχεδιάζειν τὰ δέοντα ἐγένετο.

And to sum it up, through the strength of his nature and the briefness of preparation [required] he proved himself the strongest of all men to devise a plan for what had to be done.

Only *βραχύτης* is used in the opposition length : shortness, cf. e.g. Arist. *De generatione animalium* 782[a]2 *εἰσι δὲ διαφοραὶ κατὰ μῆκος καὶ βραχύτητα* 'there are differences in length and shortness'. 'Length' is usually expressed as *μῆκος* which is far more frequent (267 examples) and attested much earlier (*Il.*+) than *μακρότης* (14 times, not before Aristotle, never in poetry).

τὰ βράχεα is, as would be expected, significantly rarer. Occurring only in the plural, it always has the specialized meaning 'shoal, shallows, sandbank'. For these reasons, it has been assumed (cf. LSJ s.v. βράχεα, GEW s.v. βραχύς) that βράχεα was not, in origin, an s-stem noun but the neuter plural of the adjective, i.e. βραχέα with an accent shift to indicate nominalization. This view can be contrasted with that of Höfer who confidently lists βράχεα among the 'sicher belegte' s-stem nouns.[135] Yet an analysis of the attestations of this word makes it clear that the views found in LSJ and GEW must be correct.[136] One of the earliest attestations of the alleged s-stem noun βράχεα is Th. 2.91.4

αἱ δὲ καὶ ἐς βράχεα ἀπειρίᾳ χωρίων ὤκειλαν

but the other (ships) ran into a sandbank due to unfamiliarity with the place.

If the meaning of βράχεα is beyond doubt, the interpretation of this word as an s-stem noun is untenable. Leaving βράχεα aside, Thucydides uses s-stem nouns in the plural 123 times and in all instances the plural is, as expected, contracted to -η; there are not even any variant readings in any of these cases nor is there a variant reading βράχη attested here. Plurals in -εα are only found in u-stems. We must thus conclude that Thucydides' βράχεα is, at best, a nominalized or, due to errors of transmission, a wrongly accentuated form of the neuter plural adjective.

The expected form βράχη does exist, but not before the first century BC. It is first found in D.S. 13.17.4 τῶν δὲ Ἀθηναίων [νῆες] . . . πρὸς τὰ βράχη προσηνέχθησαν 'the ships of the Athenians were brought into the shallows'. It would be possible but uneconomical and, given the dates of the attestations, unnecessary to assume two different words, a neuter form of the adjective and an s-stem noun. A linking point can be found. The opposite of shallows, deep water or depths, is regularly expressed as βένθεα (poetic) or βάθη, i.e. the noun rather than the adjective is employed. Particularly frequent is the formula 'in the depths of the sea', cf. ἐν βένθεσσιν ἁλός *Il.* 1.358+. The opposite of this would be something like

[135] See Höfer (1984) 24 and 50.

[136] See also Meißner (1998*a*).

ἐν βράχεσι λίμνης and this is exactly what is found in Hdt. 4.179.7 ἐν τοῖσι βράχεσι λίμνης τῆς Τριτωνίδος, cf. also Polybius 1.51.11 ἐν τοῖς βράχεσι. Formally identical, apart from the accent, it is easy to see how the original adjective βραχέσι could be nominalized, the accent shifted and the word later reinterpreted as being from a noun βράχη in view of the noun βένθεσι/βάθεσι and it is certainly not coincidental that this form occurs in historiography, much like the earlier attestations of τὰ βράχεα found in Thucydides and Herodotus.[137]

Even later, and also in historiography, the corresponding sg. τὸ βράχος was created. This is only found in the fifth-century AD historian Procopius, cf. *De aedificiis* 4.8.15

ἐν τούτῳ μέντοι ἡ θάλασσα τῷ χώρῳ ἐς βράχος κατατείνει παμμέγεθες

in this place, of course, the sea extends into a very large sandbank.

It is evident, therefore, that βράχος is the product of a Greek analogical creation and it would be wrong to see in it the product of an ancient, established ancient pattern of word formation or anything directly connected with 'Caland's Law'.

στεῖνος/στένος **vs.** στενότης

The three words to be discussed here are further instructive examples for analogical formations and influence. The existence of Att. στένος = Ion. στεῖνος (*Il.*+) may seem surprising as στεῖνος appears, at first glance, to be built directly on the stem of the adjective *στενυ- (Στενύκληρος is the name of a plain in Messenia according to Hdt. 9.64, an adjective στενυγρός 'narrow' is attested in Ionic) and to be different, therefore, from other formations like κράτος, βάρος and meaning exclusively 'narrow, close' or 'distress'. The physical quality of 'narrowness' is, and can only be, expressed by στενότης. This in

[137] An opposition where one member is in origin a noun, the other an adjective is not uncommon. In 5th-cent. Attic, τὸ ψεῦδος 'lie' regularly contrasts with τὸ ἀληθές 'truth'. The noun ἀλήθεια is attested from Homer onwards but is much rarer, and only begins to make inroads into τὸ ἀληθές in Hellenistic times. In the present context, we could also assume a phrase ἐν βραχέσιν ὕδασι *vel. sim.* As a starting point but the lack of convincing attestations for this renders it unlikely. For ἐν βάθεσι cf. also Arist. *HA* 599^{b}9.

itself may suffice to justify the existence of *στεῖνος*. But we may push the analysis somewhat further. The distribution of the noun *στεῖνος*, Att. *στένος* and the adjective *στενός*/*στεινός* is interesting and telling: *στεῖνος* occurs only in Homer, apart from one attestation in A. *Eu.* 521 and in authors imitating Homer (Callimachus and, in the third century AD, Origenes), as well as in Hesychius and Herodian. The adjective *στενός*/*στεινός*, on the other hand, is not attested in Homer at all. In Homer, the noun is held to occur three times in the dative, always with the preposition *ἐν*, only once in the nominative and once in the accusative. This may well be significant and may help explain *στεῖνος*. At a time when the adjective was still **στενύς*, 'in a narrow place' could have been expressed by **ἐν στενέϝι*. This would be exactly parallel to the usage of the remodelled adjective *στε(ι)νός* for *ἐν στε(ι)νῷ* is a common way of expressing 'in a narrow space' (cf. A. *Pers.* 413, Hdt. 8.60). When the adjective was remodelled to *στε(ι)νός* from the nom. pl. neut. **στενϝα* < **stenu-h*$_2$, * *στενέι* in the then isolated phrase **ἐν στενέι* could have been understood as a noun on which a new paradigm was built. The root vocalism *-ει-* instead of *-ε-* (the latter found in Aeschylus) could be due to metrical lengthening or, perhaps more plausibly, be put down to the influence of the adjective; this would be nothing other than the familiar pattern *κρατύς* > *κράτος* for older *κρέτος* etc. as seen above. This interpretation of the data would explain the very existence of *στεῖνος* as well as rid us of the awkward assumption that *στεῖνος* was actually built upon the stem of the adjective, a development which would be quite unparalleled.

τάρφος

A noun *τάρφος* 'thicket' is listed in the dictionaries. Höfer takes the word to be of certain attestation and even the usually careful Parmentier takes it for granted.[138] To an extent, this is not controversial since *τάρφος* is attested once in Herodian, ten times in Eustathius's commentary on the Iliad and twice in the Iliad scholia (*Σ Il.* 5.555 and 15.606). But it is remarkable that the nom. *τάρφος* or indeed any singular form is only attested in grammarian literature. Otherwise,

[138] Höfer (1984) 39, Parmentier (1889) 140.

the word occurs twice in Homer and once in Apollonius Rhodius. Homer only uses the dative plural: *Il.* 5.555 reads (*λέοντε ἐτραφέτην ὑπὸ μητρὶ*) *βαθείης τάρφεσιν ὕλης* '(the two lions were brought up by their mother) in the thicket of the deep forest' and similarly *Il.* 15. 606 *βαθέης τάρφεσιν ὕλης*. Apollonius Rhodius 4.1238 uses the nom. *μνιόεντα βυθοῖο τάρφεα* 'the mossy thicket of the depth'. The Homeric form *τάρφεσιν* is also found in late Hellenistic and Byzantine writers.

Thus, once more the earliest attestations are in the dative plural; in fact, the assumption of an s-stem noun is unwarranted. All instances in the literature can be explained from the adjective *ταρφύς* ('in the dense parts of the deep forest'). This is also more satisfactory from a semantic point of view as it is not obvious why 'thicket', if it were genuine, should be plural. Herodian's *τάρφος* is the result of a reinterpretation of the Homeric text; the case is parallel to that of *βράχος*.

Further Pairs

Other pairs can be analysed in a similar fashion and the picture that emerges is very similar. For the 'positive' term, the neuter s-stem noun occurs much more frequently than the formation in *-της*, except where the s-stem noun has undergone a semantic shift (like *γλεῦκος* 'sweet wine') or where the noun in *-της* is used to express a specific idea which does not overlap with the usage of the s-stem noun (like *βαρύτης* of the voice). In the 'negative' term, on the other hand, the noun in *-της* is normal, a formation in *-ος*, if possible at all, is rare and usually of much later attestation. Thus we find: *γλεῦκος* 'sweet wine' 40 times, Myc., Epich.+ vs. *γλυκύτης* 'sweetness' 139 examples, Hdt.+, and a similar situation is found for both *ἦδος* 'vinegar; pleasure, delight' vs. *ἡδύτης* 'sweetness' and *ὄξος* 'sour wine, vinegar' vs. *ὀξύτης*, cf. above. But *εὖρος* 'width' is far more frequent (221 times, *Od.*+) than *εὐρύτης* (9 times, Hp.+), likewise *πάχος* (213 times, *Od.*+) vs. *παχύτης* (77 times, Th.+ but mainly in Aristotle), *πλάτος* (227 times, Simon.+) vs. *πλατύτης* (8 times, Hp.+) etc.

Conversely, *βράδος* and *βράχος* are exceedingly rare and owe their existence to special reasons, *βραδύτης* and *βραχύτης* being the normal forms. **τὸ ἔλαφος* does not exist at all (only *ἐλαφρότης* is attested

from Plato onward) and there is no trace of *λεῖγος (only λιγυρότης 'sonority') nor of a noun *πρᾶος 'softness' (only πραότης) vs. πραΰς etc.

Conclusion: the Secondary Derivation of Deadjectival Nouns in -ος

To sum up, in a number of cases, the abstract noun of a 'Caland' adjective is formed by a process of additional suffixation (stem + -τητ-) rather than by replacing the adjectival suffix (-υ-, -ρο-) with -ος. This means, in a Caland context, that the derivational sequence or implication adjective in -υς : neuter noun in -ος is a concept which is far too mechanistic. It is obvious that the semantic properties of the individual root determine the shape of the abstract noun formation. Even if forms like βράδος, βράχος exist, they are unnatural and of no great age. This is also confirmed by another fact. While compounds in -ταχής etc. can be freely formed, there are no compounds in *-βραδής, -βραχής etc., demonstrating at the same time that the base nouns did not exist and that even from an inner-Greek point of view such compounds were understood to be derived from nouns (and thus *bahuvrīhis*) and not as adjectival determinative compounds (a class that remains, after all, extremely small). Rather than being inherited or formed according to inherited derivational rules, βράδος, βράχος etc. are the result of inner-Greek analogical processes.

In the preceding sections, a secondary derivation of deverbative (or decompositional) neuter nouns was proposed. Forms like βράδος, βράχος prove that, albeit by different processes and on a much smaller scale, new deadjectival nouns in -ος were also formed. To these forms can be added a few words which are exceedingly rare and mostly poetic and which are directly formed from adjectives by barytonesis: κλεῖτος Alcm., Hsch., Suid. 'fame', a contamination of κλειτός and κλέος, κλίτος (twice in Lyc.) 'slope, hillside' (: κλιτός), μάκρος 'length' Ar., contamination of μακρός and μῆκος, πᾶρος (Alc., *hapax*; uncertain) 'loss of strength' (: πηρός), πάχετος 'thickness' Nic. +, contamination of πάχετος/παχετός and πάχος or, perhaps, from *πάχεθος (cf. μέγεθος) with the same deaspiration as found in the type σώθητι.

2.7 DEVERBATIVE NEUTER S-STEM NOUNS: SEMANTICS AND COMPETING SUFFIXES

Introduction

We have just seen that deadjectival nouns in -*ος* are in competition with formations in -*τηϛ* and that there are clear-cut semantic differences. On the other hand, we have already seen that the range of meaning connected with 'deverbative' s-stem nouns is very wide. We shall now briefly look at the situation and try to answer the question whether the semantics of these nouns can be more narrowly defined, taking the 'deadjectival' formations as our model. More specifically, we shall ask whether a common denominator for the semantics of deverbative s-stem nouns can be found (internal analysis) and we shall contrast such formations with competing formations (external analysis).

Internal Analysis

If one consults the literature in order to determine the semantics of deverbative nouns in -*ος* the result is contradictory and disappointing. Parmentier in 1889 makes no such attempt at all, whereas Chantraine[139] acknowledges a great variety of formations but maintains that the abstract formations express the idea of an 'état passif'. By way of contrast, only a little later, in 1942, Porzig classified the nouns in -*ος* among the *nomina actionis*, on a par with formations in -*η* and -*μα*. An intermediate position is taken by Quellet 1969 who counts the Latin formations in -*or* among the *noms d'action* but with stative semantics. All such general statements suffer from the fact that the number of exceptions is greater than the number of nouns which conform to the theory.

Hardly more profitable is the attempt made by Höfer who expressedly wishes to divide the neuter s-stem nouns into abstract verbal nouns and concrete nouns.[140] However, he can give only a syntactic definition of abstractness. For him, a noun is abstract if it paraphrases a (subordinate) clause. Consider the following examples:

[139] Chantraine (1933) 418. [140] Höfer (1984) 9.

(a) John explained the difficult equation.
(b) John's explanation of the difficult equation was of great help to us.

'Explanation' is an abstract noun because it paraphrases a clause in a syntagm like:

(c) That John explained the difficult equation was of great help to us.

Consequently, Höfer takes a noun like *ψεῦδος* to be abstract, cf. the following example (Hdt. 3.72):

οἱμένγεψεύδονται . . . τοῖσι ψεύδεσι πείσαντες κερδήσεσθαι, οἱ δ'ἀληθίζονται ἵνα τι τῇ ἀληθείῃ ἐπισπάσωνται κέρδος.

some people lie to gain an advantage by trying to persuade somebody with lies, other people tell the truth so that they gain an advantage through the truth.

Such a syntactic definition assumes that the deep structure of the two constructions is identical. But this is highly uncertain; *ψεῦδος* in the last example need not necessarily be taken as equal to the act of lying *τὸ ψεύδειν* but could also be taken as *τὸ ἐψευσμένον*. A word like *γένος* has to be regarded both as an abstract noun (when it means 'origin'), and as a concrete one (when it means 'family, kin'). Even if this were justifiable on syntactic grounds, it would not help to elucidate the semantic nature of neuter s-stem nouns.

More recently, Stüber has analysed the semantics of those s-stems that seem reconstructable for the parent language and has come to the conclusion that, while they are in origin simple verbal abstract nouns, the actual meaning of the s-stem noun depends on the semantics of the root and the syntactic behaviour of the corresponding verb.[141] If the verbal root is transitive, the s-stem formation will indicate a *nomen rei actae*, e.g. *κλέος* 'fame = what is heard'. If it is intransitive and the subject is always inanimate and marked, the noun will be a (resultative) agent noun (apparently **peh*$_2$*ĝos* 'surface' from **peh*$_2$*ĝ-* 'fest werden' comes under this category). If the subject behaves in a different way, the s-stem noun will, depending on

[141] See Stüber (2002) 177 ff., 243 f.

further factors, be a *nomen actionis* (e.g. ἔρως 'love'), *nomen loci* (e.g. **leĝʰos* 'bed') or *nomen resultativum* (e.g. **su̯eidos* 'sweat'. i.e. 'thing sweated'). The entirety of the evidence cannot be dealt with here and is also, strictly speaking, outside our scope; nevertheless, it is important to note, as Stüber rightly points out,[142] that (abstract) action nouns have a tendency to develop, at least in certain contexts, the semantics of (concrete) result nouns; English 'building' denotes the process, but also the edifice, and a word like 'clothing' is used almost entirely as a concrete noun.

Oscillations do thus occur, and even if all the details as put forward by Stüber are correct, it is clear that further semantic changes have clouded the picture – ἦδος 'joy' but also 'must, vinegar' is a simple case in point. The range of deverbative formations is considerable, cf. δάος 'torch', τέκος 'child', βέλος 'arrow', γάνος 'refreshing drink', γένος 'origin, kin', κλέος 'fame, rumour', ἄλγος 'pain'.

It is also clear that very many Greek neuter s-stem nouns are resultative and have a distinctly passive connotation[143] inasmuch as they represent the result of the action expressed by the root involved, such as τέκος 'child', τεῖχος 'wall'. A passive but non-resultative meaning is very rare; βέλος 'missile' is probably the best example, δάος 'torch' is ambivalent in this respect. Equally rare are distinctly active formations such as δάκος 'biting beast' (but also 'bite'); however, this active meaning is found with limited frequency in secondary s-stem nouns like δράκος 'eye', see section 2.4 above. A few formations show both an active and a passive-resultative meaning: ἔρκος in an active sense means 'barrier, delimiting wall', cf. ἔρκει χαλκείῳ 'with a fence of bronze' *Il.* 15.567 or 'shield', cf. ἀσπὶς ἔρκος ἀκόντων 'the shield, the defence against javelins' *Il.* 15.646; in a passive sense it means 'the place enclosed, enclosure', cf. S. *Tr.* 607 ἔρκος ἱερὸν 'sacred enclosure'. The matter is further complicated by words that do not easily lend themselves to such an analysis like νέφος 'cloud' or ξίφος 'sword'.

The state of affairs is, quite simply, chaotic and it seems that, even though one might be able to establish some rules for the parent language as done by Stüber, no homogeneous structure as to the

[142] See Stüber (2002) 34, 219 ff.
[143] See Chantraine (1933) 418, Stüber (2002) 234.

semantics of the nouns in question in Greek appears and no *a priori* prediction can be made as to what the semantics of a deverbative s-stem noun will actually be.

External Analysis

The internal analysis of the semantics of neuter s-stem nouns is thus not entirely satisfactory. Some progress may be made, however, by contrasting the s-stems with other, semantically related formations. We saw in section 2.5 that the same root sometimes yields deverbative derivatives in -η or -ο- as well as in -εσ-/-ος (βλαβή vs. βλάβος). In this particular instance we argued that βλάβος was a secondary formation. Chantraine suggested that in such cases the derivative in -η or -ο- has a 'force agissante' whereas the derivative in -εσ-/-ος has a 'sens passif'.[144] He illustrated this with the following examples: εὐχή 'prayer, praying', cf. *Od.* 10.526 αὐτὰρ ἐπὴν εὐχῇσι λίσῃ κλυτὰ ἔθνεα νεκρῶν, 'when you have finished your invocations to the glorious companies of the dead'; εὐχή has an active force in contrast to εὖχος 'thing prayed for', cf. S. *Ph.* 1202 ὦ ξένοι, ἔν γέ μοι εὖχος ὀρέξατε, 'strangers, fulfil me this one wish' where the passive sense is apparent.

The main suffixes competing with -εσ-/-ος are -τητ-, -σύνη and -μα; of these, -τητ- is restricted to deadjectival formations, -σύνη is usually denominal or deadjectival.[145] Thus, -μα is by far the most important formans here.

A comprehensive attempt to define and contrast the respective meaning of the two suffixes -εσ-/-ος and -μα was made by Mawet in 1979 and 1981. In her 1979 thesis, Mawet seeks to define the semantics of the Greek formations in -μα, drawing on earlier work by Perrot who argued for the Latin formations in -*men* (type *carmen*) that '[u]n mot pourvu de ce suffixe désigne une chose conçue en tant que siège du procès marqué par le radical, une chose qui s'identifie en quelque sorte au procès lui-même, dont tout l'être consiste à être porteuse de ce procès. A la formation en -*men* correspond, en d'autres termes, une substantivation de la notion verbale caracterisée

[144] Chantraine (1933) 418. [145] Wyss (1954), Risch (1974) 150 f.

par une représentation moyenne ou subjective du procès'.[146] This 'middle or subjective character' of the nouns in *-men* manifests itself not only in transitive verbs but also in stative and intransitive formations like *flūmen*, *termen*.[147] Mawet sees clear parallels for this in Greek and concludes that this middle or subjective character is, in fact, typical of the Indo-European formations in *-*mn̥*.[148] Furthermore, she observes that the 'caractère résultatif' of such derivatives is visible in formations like δέσμα 'bond, fetter' or Myc. *a-mo-ta* 'wheels' corresponding to later Greek ἅρματα 'chariots' < *ἀρ-* 'to fit, to put together'.[149]

Taken by itself, this would suggest that there is very little difference between the relevant formations in *-ος* and *-μα*. However, Mawet pushes the analysis much further and seeks to establish a difference on syntactic grounds. Drawing on earlier observations on Latin formations in *-or*,[150] she assumes that, whereas the formations in *-*mn̥* have middle/subjective semantics, those in *-*es-*/*-os* belong to impersonal (i.e. agentless) or stative verbs, a subtle difference. If Mawet were right, this might lend powerful support to Watkins's 1973 claim that the stative suffix *-*ē-* (in his notation) belongs to the 'Caland system' in which nouns in *-*es-*/*-os* are an important entity.

Indeed it would appear that such a difference can sometimes be established, perhaps most clearly in the lexical field of 'pain' where πῆμα on the one hand contrasts with ἄλγος (most prominently), ἄχος, πένθος and κῆδος.

πῆμα is not a physical or psychological phenomenon found outside the individual but is in itself the carrier of the verbal notion found in the root. It indicates 'cause ou sujet de douleur, fléau',[151] and the typical construction for πῆμα is, therefore, predicative or attributive as in *Il.* 6.282 μέγα γάρ μιν Ὄλύμπιος ἔτρεφε πῆμα 'Zeus

[146] Perrot (1961) 248.

[147] According to Perrot (1961) 237 these present 'la même relation sémantique fondamentale avec la notion impliquée dans le radical dont ils sont directement tirés.'

[148] Mawet (1979) 80 ff. This hypothesis seems to have been advanced first by Benveniste (1935) 128 ff. and is also found in *Gr.Gr.* I 524.

[149] See Mawet (1979) 81; the 'resultative' semantics of these nouns were observed much earlier by Debrunner (1917) 157.

[150] Quellet (1969) 131.

[151] Mawet (1981) 145.

brought him [Paris] up, as a (cause of) great pain (to the Trojans, Priam and his children)'.

This can be contrasted with the usage of ἄλγος which indicates a suffering inflicted on somebody from outside. It typically occurs as a complement to verbs like *τλάω, ἔχω and to verbs of the type δίδωμι, τίθημι, φέρω as, famously, in *Il.* 1.2 Ἀχαιοῖς ἄλγε' ἔθηκε, 'that inflicted innumerable sufferings on the Achaeans'.

According to Mawet's theory, there is thus a systematic morphological, semantic, and syntactic distinction between derivatives in *-mn̥ and such in *-es-/-os. Subtle as these observations are, the theory as a whole meets with considerable difficulties. The analysis is based solely on the evidence from Homer. There is no trace of such systematic behaviour in any other Indo-European language nor is it present in later Greek.[152] Furthermore, it is based on a small part of the lexicon and indeed on a small part of the formations in -μα.

The question may be asked whether the principal distinction does not lie in the suffix but, rather, in the root concerned. In this context it is profitable to look at roots that yield both a derivative in -μα and in -ος. If Mawet were right, there should be a clear distinction in the usage of the two lexical items in Homer. Three such pairs are attested in the epics: δέος and δεῖμα 'fear', ἕσθος and εἶμα 'garment' and ἄκος and ἀκέσματα or ἀκήματα 'remedy'.[153]

Of the pair δέος/δεῖμα, the latter form is only attested twice; δέος is the normal word. It usually appears in the subject position and indicates fear inflicted on the individual from outside, e.g. *Il.* 17.625 δέος ἔμπεσε θυμῷ 'fear befell him in his heart'. Apart from this, the usage of δέος is rather formulaic in χλωρὸν δέος ἤρει/εἶλε 'greenish fear gripped (me/them)' *Il.* 7.479+. But δέος also occurs as the complement of a transitive verb, cf. *Od.* 6.140 Ἀθήνη | θάρσος ἐνὶ φρεσὶ θῆκε καὶ ἐκ δέος εἵλετο γυίων, 'Athene put courage in her heart and took the fear from her limbs'. In this usage, it is indistinguishable from δεῖμα as in *Il.* 5.682 βῆ . . . | δεῖμα φέρων Δαναοῖσι

[152] Mawet (1981) 160 admits this herself.

[153] τέρας 'sign, marvel' and τέρμα 'turning point, end' are semantically too far apart to be taken into consideration here.

'he went, bringing fear to the Greeks' where δεῖμα manifestly is fear inflicted from the outside. And *Il.* 10.376 ὁ δ' ἄρ' ἔστη τάρβησέν τε/βαμβαίνων . . . | χλωρὸς ὑπαὶ δείους, 'There he stood and was frightened, chattering with the teeth, pale for fear' is comparable to *h. Dem.* 293 δείματι παλλόμεναι, 'shaken by fear'.

Similarly, there is no difference in the constructions with εἷμα and ἕσθος 'garment'. The latter occurs only once in Homer in *Il.* 24.94 in the subject position: ὣς ἄρα φωνήσασα κάλυμμ' ἕλε δῖα θεάων κυάνεον, τοῦ δ' οὔ τι μελάντερον ἔπλετο ἕσθος 'Thus spoke the divine goddess and took the dark cloak, never had a darker garment than this covered her.'

The same position is found for εἷμα, the usual word for 'garment' alongside ἑσθής,[154] cf. *Od.* 5.221 εἵματα γάρ ἑ βάρυνε, 'The garments weighed him down'.

The third pair is somewhat more uncertain. ἀκέσματα is no more than a less well transmitted variant reading for ἀκήματα in *Il.* 15.394: ἐπὶ δ' ἕλκεϊ λυγρῷ | φάρμακ' ἀκέσματ' ἔπασσε μελαινάων ὀδυνάων, 'and upon the painful wound he applied healing remedies for the black pain'. ἄκος occurs twice, in *Il.* 9.250 οὐδέ τι μῆχος | ῥεχθέντος κακοῦ ἔστ' ἄκος εὑρεῖν, 'and there is no way to find a remedy for an evil that has already happened' and in *Od.* 22.481 οἶσε θέειον, γρηῢ, κακῶν ἄκος, οἶσε δέ μοι πῦρ, 'fetch me, old woman, the divine remedy against the evil, fetch me the fire'. There seems to be little difference between ἄκος and ἀκέσματα.[155] As far as the reading is concerned, ἀκέσματα is the expected form, cf. ἄκεστος, see Risch (1974), 50; it seems to be built directly on the stem of ἄκος which is *per se* incompatible with Mawet's hypothesis. If ἀκήματα is the correct reading, it could be explained as an Aeolic formation based on a verb in -ημαι which, in turn, may have been formed directly from the noun ἄκος.[156]

It would appear, then, that none of the pairs in -μα and -ος lends good support to Mawet's theory. In addition to this, nouns in -ος appear in predicative position as well, even in formulaic expressions

[154] ἑσθής seems younger than both εἷμα and ἕσθος; it occurs first in *Od.* and looks as if it were derived from ἕσθος but the derivational process is obscure.

[155] See also von Brock (1961) 75 ff. [156] See Hamm (1957) 141.

like *Αἴας . . . ἔρκος Ἀχαίων*, 'Ajax, the shield of the Achaeans' (*Il.* 3.229+). To assume that such a predicative usage is metaphorical whereas the same usage of *πῆμα* is said to be genuine[157] just because *ἔρκος* also occurs in different syntactic positions is an uncheckable assumption. On a similar note, the same author[158] declares the predominant constructions of *θαῦμα* (subject and direct object) as 'moins significatives' which seems rather questionable. Attractive as the theory is in principle, it seems rather insufficiently supported by the evidence and the difference between the two formations cannot satisfactorily be defined in this way.

This does not take away from the fact that there is significant overlap between the nouns in *-μα* and those in *-ος*. It seems hard to establish the 'original' semantics of formations in **-mn̥*. Yet, if the connection with the middle (and passive) is correct— and the oldest formations such as Myc. *pe-ma*, *pe-mo*, corresponding to *σπέρμα* 'seed, i.e. entity sown', *a-mo* 'wheel', *ἅρμα* 'chariot' seem to favour such an interpretation—then the semantic similarity with 'resultative' nouns in **-es-/-os* is easy to conceive. From an inner-Greek point of view, the situation can be described in purely chronological terms. *-ος* is largely unproductive, *-μα*, on the other hand, is very productive. This is shown not only by the large number of words belonging to this class (more than 3,000) most of which are first attested in the Classical and Hellenistic period, but also by the fact that whereas a suffix **-μνεσ-* does not exist, *-εσμα* (cf. *ἄκεσμα* above) occurs with considerable frequency. It is also commonly claimed[159] that a number of nouns in *-ος* were replaced by nouns in *-μα* (*πρᾶγος* Pi.+, only in poetry vs. *πρᾶγμα* Pi.+, in poetry and prose). About 70 pairs of this sort are attested; normally, there seems to be no significant semantic difference, e.g. *ἄγος* and *ἄγμα* both mean 'fragment' but occasionally such a distinction does appear (e.g. *ζεῦγος* 'yoke of oxen' *vs.* *ζεῦγμα* 'bond'. A close analysis of the evidence also reveals that many s-stem nouns are attested distinctly later and are much rarer than their counterparts in *-μα*.[160] Thus, *ἄος* 'wind' is found only as a gloss in Heychius while *ἄημα* is attested from Aeschylus

[157] Mawet (1981) 145 and 157.
[158] Mawet (1981) 148.
[159] Chantraine (1933) 419.
[160] See also section 3.4

onward, and the same is true for ἄγος, βλέπος, δέρος, δράκος, δρᾶνος, ἔργος, θέλγος, καῦσος, κλέπος, κῦφος, πέσος, πλέκος, σπέραδος, στρέφος, τρέφος, φλέγος, and χάνος. It appears that the matter is not as straightforward as portrayed by Chantraine. But we have already seen that nouns like ἄος are probably of secondary origin, and this is true for all the words listed. Importantly, they only ever occur as glossators' words or as rare poetic creations. To say, then, that the formations in -μα have replaced those in -ος is overstating the case. Occasionally, an s-stem noun was created later than the noun in -μα, though only in well-defined contexts and for specific reasons. In other cases, the formations in -μα are secondary, very rare or even *hapax* and do not replace the original s-stem nouns, at least not before the middle ages. This is true for ἄρκεσμα, βλάμμα, ἕλκωμα, εὖγμα, θέλγμα, ἴχνευμα, μέρισμα, ὀνείδισμα, ὄφελμα, ῥακώματα, στύγημα, τεύχημα, ψεῦσμα. The cases where nouns in -μα have gained substantial ground at the cost of s-stem nouns or have replaced them completely are actually quite rare; ἄλγημα, γάνωμα, ἕλκωμα, εἶμα, κήδευμα, κύημα, μάθημα, πάθημα, πρᾶγμα, θρύμμα and χρῆμα are the clearest examples for this process.

In some cases, a semantic distinction between a noun in -μα and an s-stem noun can be found. In particular the nouns in -ημα occur much more frequently in the plural than their s-stem counterparts.[161] Especially in philosophical literature, they seem to be more individualizing. Thus, τὰ περὶ τὸ σῶμα παθήματα (Pl. *Phlb.* 33d) are the *different types* of affection, similarly Pl. *R.* 511d, Arist. *Pol.* 1254[b]24.

The usage of -μα is also stylistically motivated. It has been noted that nouns in -μα occur more frequently in tragedy than in any other type of Greek literature.[162] This, in Long's view, is due partly to metrical reasons, partly to a sort of emphatic weight which seems to be associated with the -μα formations.

[161] The derivation of nouns in -ημα is often puzzling; for semantic reasons, a derivation from the plural of s-stem nouns seems plausible enough, but from a morphological point of view, this is too bold an assumption to make, and in this respect the formations in -ημα cannot be separated from those in -ησις etc.

[162] See Long (1968) 35 ff.

Conclusion

Relatively few conclusions can be drawn from this. Both Chantraine[163] and Porzig[164] admit that the semantics of the nouns in -μα, much like those of the deverbative nouns in -ος are difficult to define. Their assumption that the resultative function of the suffix -μα is a relatively late development is undermined by Mycenaean forms like *a-mo*, *pe-mo* as seen above. It is evident that the two types of nouns overlap semantically to a certain extent. However, this can be established not by characterizing the semantics of the respective formations but only by looking at individual pairs. Formations in -μα were highly productive in Ancient Greek and this productivity has lasted to the present day. Neuter s-stem nouns still exist in Modern Greek[165] although they are very much a residual class and in no case does an s-stem noun seem to have replaced one in -μα.

2.8 NOTES ON NEUTER NOUNS IN -ας

At the beginning of this chapter mention was made of a second, much smaller group of neuter s-stem nouns in -ας. This group contains no more than thirty nouns, seventeen of which are attested from Homer onwards. Indeed, it is evident that the great majority of them are highly poetic. Where they are found in Attic prose they have undergone some formal transformation inasmuch as they take a sort of 'Attic' declension, cf. the gen. forms κρέως, κέρως, γήρως (<* -αος). The t-stem inflection is also found but, with the exception of κέρας 'horn' and, to a lesser extent, τέρας 'wonder; monster' (where t-forms before the fifth century are spurious, and do not occur in tragedy), this is a late Classical or early Hellenistic phenomenon. Apart from κέρας and τέρας, this concerns mostly κρέας 'flesh', γῆρας 'old age' and κνέφας 'darkness'. Interestingly, the forms in -τ- seem to start life in the (dual and) plural, while the genitive in -ως (and sometimes in -ους as if belonging to the majority type in -ος) is relatively resistent. This latter anomaly, the replacement in the

[163] Chantraine (1933) 181 f. [164] Porzig (1924).
[165] See Jannaris (1897) 133 f. for a brief account of the present state of affairs.

oblique cases of -α- with -ε- of the dominant type, is found already in an earlier period.[166] Thus, from οὖδας we only have οὔδεος, οὔδει from Homer onwards. This trend gains momentum after Homer, and some nouns in -ας, before eventually becoming dental stems, adopt this pattern, cf. Hom. κέρας, τέρας, κνέφας vs. Hdt. κέρεος, τέρεος, Att. κνέφους.[167] Hence, the impression is that of an unstable group of words that are absorbed by various other classes. At the time of the Ptolemaic and post-Ptolemaic papyri the nouns are avoided wherever possible and alternative forms are used. Thus, we find only σκέπη, never σκέπας. Only the four most frequent nouns in -ας, γέρας, γῆρας, κέρας, and κρέας are attested in the papyri. Here, remarkably, they usually retain the 'Attic' declension. Only κέρας is frequently inflected as a stem in -τ- which is also in line with the fact that this is the first word to show the dental stem inflection in post-Homeric Greek. It occurs in a Pindar fragment (166.4) ἐξ ἀργυρέων κεράτων πίνοντες 'drinking from silver horns' and is firmly established in sixth-century Presocratic philosophical literature. It is also found in tragedy, first in S. *Tr.* 517 (lyr.). Frequent, too, is remodelling on the model of s-stem nouns in -ος, e.g. nom. sg. κρέος *POslo* 44.6 (AD 324–5), gen. sg. γήρους *POslo* 124.13 (late first century); the latter form is already found in codices of Aristotle, Agatharchides, Josephus, Photius, etc., in *LXX*, *NT* and later in Byzantine authors. We witness here the continuation of the trend begun with Hom. οὔδεος.

A transfer to the second declension on the other hand is very rare and apparently very late. Examples are not found before the sixth century AD. To my knowledge, the only quotable cases are gen. sg. κρέου *PApoll.* 63.6 (AD 703–15) and dat. sg. γήρῳ *PCairMasp.* 154 V.20 (AD 527–65). Anomalous are forms like the dat. sg. γῆρι *PSI* 685.8 (AD 324–7), while the acc. pl. γέρα *POxy.* 1408.16 (*c.* AD 210–14) may be a reminiscence of the ancient plural (see immediately below). Apart from κρέας, modern Greek seems to have lost all neuter nouns in -ας.

More controversial is the interpretation of plural forms like κρέα, γέρα with a short final vowel. The view that these forms

[166] See for details *Gr. hom.* i. 209 ff., *Gr. Gr.* i. 242 f., 514 f., Risch (1974) 87.
[167] See *Gr. Gr.* i. 515 and Heubeck (1978) 70 ff. for details.

were very ancient endingless forms from non-s-stems[168] is still occasionally found. However, it has been observed[169] that such forms originally occurred only before vowels and are much more likely to have arisen by hyphaeresis *κρέαα > κρέα which would have been generalized. This is plausible in particular in the case of *κρέαα where there was a sequence of three vowels after the loss of digamma and intervocalic /h/ and is supported by the fact that κρέα (with short final vowel) is the regular Attic form whereas all other nouns in -ας, before being transferred to the dental inflection, have -ᾱ by regular contraction.

If this is a very small class of words within Greek, the comparative evidence is even more meagre. The only word equation between Greek and any other Indo-European language is κρέας which corresponds, apart from the accent, exactly to Skt. *kravíḥ*. Even this has been contested[170] but in the absence of a convincing alternative analysis, in the light of the very good semantic match and the fact that the formation is so clearly anomalous, it is probably best to maintain the equation. If so, the vocalism of the suffix is highly remarkable. As we have already seen (section 2.3), Schindler argued that this suggests an early syllabification of *h_2 (at least in unstressed final syllables), namely before the introduction of the o-vocalism in the nominative/accusative singular of the s-stems. If we adopt the reasoning expressed by Reynolds et al. in 1998, this may even be a misnomer as the laryngeals would always have had a vocalic tier and therefore be syllabic.

This *h_2 can also be identified with reasonable certainty in a few other nouns: for γέρας and γῆρας cf. the much-discussed aor. ἐγήρᾱ.[171] δέμας 'body' can belong to the root for 'build' only if Myc. fut. part. *de-me-o-te* is an analogical formation[172] – which is possible but not certain – and the root is thus reconstructed as

[168] This was first put forward by Schmidt (1889) 321 ff., 338 ff., 360 ff. and his view was adopted by Schwyzer in *Gr. Gr.* i. 516.

[169] Sommer (1957) 145 f.

[170] Benveniste (1935) 31 f., more recently Stüber (2002) .

[171] Most importantly Barton (1982), Jasanoff (1988), Peters (1987*a*) 276. See also n. 99.

[172] Thus *LIV* 115 n. 7; for a different view see Morpurgo Davies (1988) 77 (with references).

demh*$_2$-. κέρας 'horn', however, despite the undeniable existence of forms from this root containing a 'suffix' *-*h*$_2$*s*-, cf. κάρᾱ 'head' <ḱr̥h*$_2$*sn̥*(*t*) (with generalized zero grade), probably does not belong here (see below).

It is generally claimed that this noun class consists only of archaic words and is not productive.[173] On the whole this seems correct but a few additional points should be noted. At an early stage in Greek, the class was still strong enough to absorb a number of loanwords such as δέπας, Myc. *di-pa* 'cup' or βρέτας '(wooden) image of a god'.[174] The majority of nouns in -ας have no known or generally accepted etymology, e.g. δέπας 'cup', κενέθας 'sponge', κνέφας 'darkness', κῶας 'fleece', οὖδας 'ground', σέλας 'light', σφέλας 'footrest', τέρας 'wonder, monster', ψέφας 'darkness'. This is quite remarkable since one might have expected these formations to have been absorbed by the regular type in -ος or by the class of feminine nouns in -άς. Another interesting detail emerges from Mycenaean. The word for 'fleece', Hom. κῶας, appears as *ko-wo* in PY Un 718. A Mycenaean sound change *wa* > *wo* has been postulated[175] but this is entirely *ad hoc* and unparalleled. It does not seem easy to argue that the Mycenaean form is younger than the Homeric one and thus it may well be that Homeric κῶας is secondary. For occasionally, we find nouns in -ας where no laryngeal is present at all, thus δέρας E.+ alongside δέρος 'skin' S.+, οὖας Simon. alongside οὖς *Il.*+ 'ear'. On the other hand, nouns in -ας often belong to the religious sphere (like σέβας, 'awe, reverence, holiness'; τέρας, 'wonder'; βρέτας, 'image of a god'). It seems possible, therefore, that -ας was understood as 'archaic' and that κῶας which has strong religious connotations in that it is used for covering εἴδωλα and is the word for the 'Golden Fleece' was secondarily created from contracted κῶς (attested in Nicochares though this may be due to a recontraction) just as οὖας from οὖς (after δέμας?). Along the same lines a form like δέρας may be secondary for δέρος, and κῶας, too, could be analogical after δέμας. λίπας, -αος 'fat' read in Aretaeus and Herodian is more likely

[173] See e.g. Chantraine (1933) 422.
[174] See Benveniste (1932) 128.
[175] Risch (1974) 87.

to be influenced by λίπα, λιπαρός than to be an ancient formation. Finally, πέρας, πέρατος Alc.+ (the normal form in Attic), πεῖρας Pi. vs. Hom. πεῖραρ 'end, limit' < *per-u̯r̥, cf. Skt. *párvan-* 'knot' is an archaizing back-formation in post-Homeric Greek, starting from the then ambiguous oblique cases in -τ-.[176]

κέρας 'horn', however, deserves special comment. The word is usually analysed as from *k̂er-h₂s- and compared in its formation to the word for 'head' in Greek, κάρᾱ 'head' <*k̂r̥h₂s-n̥(t) and similar formations in other languages, esp. Skt. *śíras* neut. 'head', oblique stem *śīrṣán-*.[177] This comparison meets with a substantial difficulty. The words for 'horn' all contain an *-*n-* (cf. Lat. *cornū*, Runic Norse *horna*, Skt. *śr̥ṅga-*) or a *-*u-* (cf. Hitt. *karāu̯ar*, Av. *sruua-*), and we would expect the Greek word to do as well. It used to be argued that κεραός 'horned' (*Il.*+) is <*κεραϝός but Myc. inst. pl. *ke-ra-ja-pi* 'made from horn' shows that this is not the case.[178] If the derivation κέρας <*k̂er-h₂s- were correct we would also be faced with the very unwelcome conclusion that the word for 'head' is a derivative of the word for 'horn', rather than vice versa. We might wish to reanalyse κέρας, therefore, and in doing so remember that of all the neuter nouns in -ας, κέρας is the first one to show a widely established t-stem inflection after Homer (see above). Pragmatically, the word is much more likely to appear in the du. and pl. than in the sg., and indeed in Homer, the pl. is three times more frequent than the sg. Of particular interest is the nom./acc. pl. *κέραα which appears in Homer always as κέρα as it only occurs in prevocalic position. In my view, it is more likely that this is an inner-Greek plural formation from a sg. *κέρα < *k̂ér-n̥. Greek would thus show a relic of the old athematic n-stem. As the word looked highly anomalous from a morphological point of view, from this pl. *κέραα a new sg. κέρας could easily be formed on the model of τέραα : τέρας after the loss of intervocalic /h/, and contrariwise a new pl. κέρατα like ἄρματα etc. was built at an early stage. This would bring the Greek word in line with its cognates and at the same time accommodate the

[176] For a slightly different explanation see Buck (1917) 24: change -ραρ > -ρας for euphonic reasons.

[177] See Nussbaum (1986) 19 ff.

[178] A sequence * -u̯i̯- is always maintained at least after a short vowel, cf. *di-u-jo*, *me-u-jo*.

difference in the inflection. A reconstructed **ĥker-n̥* needs further comment, though. This word would belong to the very small but seemingly old group of neuter nouns in **-n̥*, for which the closest relatives are seen in the word for 'unguent' and, perhaps, the word for 'name', though the latter may be a formation in **-mn̥*. Lat. *unguen* 'unguent', OHG *ancho* 'butter', OIr. *imb* 'butter' point to an ablauting **óngʷn̥*, **n̥gʷéns*. The question then is how to interpret the initial **o*. The root is usually reconstructed as **h₃engʷ-* on the strength of Lat. *unguō* which, as a thematic present, should show the e-grade. More recently, however, Stüber pleads for **h₂engʷ-* and reconstructs the paradigm as **h₂óngʷ-n̥*, **h₂n̥gʷ-éns*.[179] The reason for the reconstruction of **h₂-* rather than **h₃-* is the sought connection with Greek words of the type δῑθύραμβος, θρίαμβος, ἴαμβος, all indicating types of poetry. Janda has explained *-αμβος* as belonging to the root for 'anoint' which would have to be reconstructed as **h₂engʷ-* in view of the Greek a-vocalism.[180] Usually, of course, these words are, with good reason, regarded as non-Greek, but Janda compares δῑθύραμβος with RV *dvar-* 'door' + *añj-* 'to anoint doors' as in RV 8.63.1 *dvā́rā ānajé* 'he (Manu) anointed the doors'. Attractive though this may seem, it is formally problematic. No convincing explanation of the *ῑ* has been put forward;[181] what rules out the comparison, however, is the fact that no noun **δίθυρον* 'double door' *vel sim.* exists in Greek. There is an adjective δίθυρος 'with two doors' but this is not attested before Hellenistic times. For philological reasons and on the basis of what we know about the early construction of doors, it would be misguided to reconstruct such a compound even for PGreek, let alone the parent language.

There is thus no reason not to stick to the traditional reconstruction of the root for 'anoint' as **h₃engʷ-*, and both the word for 'unguent' and the word for 'horn' will, in the strong cases, have shown e-grade of the root: **h₃éngʷ-n̥*, **h₃n̥gʷ-éns* and **ĥkér-n̥*, **ĥkr-éns* or with lindemanization **ĥk̥r-éns*.

[179] Stüber (1997) 84 f. [180] Janda (2000) 283.

[181] Janda (2000) 283 argues for an original compositional form **dṷi-dʰṷr̥-* where the second *-ṷ-* was lost with compensatory lengthening of the *-i-*. The word would then have to have been remodelled from **dī-dʰṷr̥-* to **dī-dʰur-*. But the form was outside the paradigm and semantically specialized and very unlikely to have undergone the sort of remodelling needed.

To sum up, then, two of the neuter nouns in -ας seem to reflect inherited formations but to have very different origins. Yet, at an early, prehistoric stage of Greek, a number of loanwords, none of which semantically close to κρέας, entered the language. In historical Greek, a few existing words are, probably for reasons of effect, remodelled to nouns in -ας but this mainly remained a poetical or idiolectal device. The general trend is to remove this group by integrating it into other stem classes or by creating synonymous formations with unrelated suffixes.

3

The Animate S-stem Nouns

3.1 THE ANIMATE S-STEM NOUNS IN GREEK: AN OVERVIEW

Greek possesses a very small number of non-neuter s-stem nouns, so small in fact that Chantraine[1] could say that 'les thèmes en s masculins ou féminins ne constituent pas un système'. Among these words, feminine nouns are even rarer than masculine ones. Yet, the type, though weak, seems inherited from the parent language as witnessed by the (possibly imperfect) equation *ἠώς*, Skt. *uṣás-* 'dawn', with a-thematization Lat. *aurōra* < **ausōs-a*. In Latin this inflectional paradigm was reasonably successful (cf. the numerous nouns in *-ōs* and *-or* like *honōs/honor* 'honour', *flōs* 'flower'), but both Greek and Sanskrit show mere relics of this group.

The number of words originally belonging to this group is hard to assess since many of them seem to have been transformed and integrated into other stem classes, partly already before their earliest attestation. However, it is clear that even so we are dealing with little more than a handful of nouns. The following can with reasonable certainty be regarded as belonging to this group:

(a) *αἰδώς* (*Il.* +) fem. 'shyness, reverence';
(b) *ἔρως* (*Il.*+) masc. 'love';
(c) *ἠώς* (*Il.*+, Att. *ἕως*, Lesb. *αὔως*, Dor. *ἀϝώς* etc.) fem. 'dawn';
(d) *γέλως* (*Il.*+) masc. 'laughter';
(e) *ἱδρώς* (*Il.*+) masc. (also fem.?) 'sweat';
(f) *ἐρώς* (Thgn. 452+) masc. 'mould';

[1] Chantraine (1933) 423.

(g) χρώς (*Il.*+) masc. 'skin'.

Very doubtful are the following:

(h) ἥρως (*Il.*+) masc. 'hero';
(i) γάλως (Hdn. 2.236), Hom. dat. sg. and nom. pl. γαλόῳ, gen. pl. γαλόων (*Il.* only) fem. 'husband's sister' or 'brother's wife', 'sister-in-law'.

From a semantic point of view, there is little that connects all of them. However, αἰδώς, ἔρως and γέλως denote emotions or expressions of emotions, while χρώς, ἰδρώς and perhaps even εὐρώς belong to the lexical sphere 'surface'.

3.2 THE ATTESTED FORMS

ἠώς and αἰδώς

These are the clearest and most uncontroversial animate s-stem nouns of Greek. The former is obviously inherited (see the equations above) and presents without doubt the best cross-linguistic example for an animate s-stem. αἰδώς is limited to Greek but clearly an s-stem, cf. in particular the derived adjective αἰδοῖος < *αἰδοσ-ϳος 'having a claim to reverence' but also 'bashful'. Other derivatives such as ἀναιδής 'shameless', αἰδέομαι point to a stem for *αἰδεσ- which may be original but can also be explained in a different way (see section 4.5).

ἥρως and γάλως

The interpretation of ἥρως as an s-stem rather than as an original diphthongal stem in *-ομ- would be preferable if it were certain that Myc. *ti-ri-se-ro-e* (PY Tn 316+) is to be interpreted as *Tris(h)ero(h)ei*. Much has been written about this[2] but it would seem that no conclusive interpretation has so far been put forward. The usual explanation of this word as meaning 'thrice-hero' is maybe right but has no parallels and is unproven. The only and often quoted parallel Τριτοπάτωρ is completely different. This is true at least for the morphology: Τριτοπάτωρ contains the ordinal, as one would

[2] See Hemberg (1954), Gérard-Rousseau (1968) 222 ff., *Docs.*[2] 289, 464, 586, *DMic.* s.v.

expect in a word meaning 'ancestor, great-grandfather'. It seems better to leave this word aside for our considerations.

γάλως poses problems of a different nature but equally difficult. In Homer, the word is clearly thematic; the nom. pl. is γαλόῳ and we can confidently assume that the nominative singular was *γαλόως. On the other hand, the Attic forms are only attested in the grammarians (cf. Herodian 2.236). Before attempting to reconstruct the Greek paradigm, comparable forms in other Indo-European languages should first be examined.

Lat. *glōs*, *glōris* '*viri soror*' would *prima facie* suggest an interpretation of the Greek and Latin forms as original s-stems; this is complicated, however, by Late Church Slavonic *zŭlŭva* 'sister-in-law', showing a formation in *-u̯-. On the other hand, a pre-form *g̥l-ou̯-os as reconstructed by Solmsen (cf. *LEW* s.v.) is hardly tenable from a phonotactic point of view.[3] In addition, there is an uncertain gloss γέλαρος· ἀδελφοῦ γυνή. φρυγιστί (Hsch.);[4] in order to save the *-u̯- this was emended to γέλαϝος by Hermann. A different stem formation is found in Skt. *giri-* which may also be found in Arm. *tal* (i-stem), but the latter may be compared only if *t-* is for expected *c-* analogically after *taygr* 'husband's brother'.

It would seem, therefore, that at best a number of different formations exist in the individual languages. The Greek paradigm as obtained by internal reconstruction is ambiguous. It would, in theory, be possible to start from a paradigm nom. sg. *g̥lōs, gen. sg. *gl-os-os > γάλως, *γλόος. By levelling the root vowel γάλως, *γάλοος is obtained.[5] The thematic Homeric forms could then have arisen by *Gelenkheteroklisie*, i.e. the process by which words are assigned to a different (and normally more productive) paradigm on the basis of an ambiguous form (e.g. δάκρυ 'tear', pl. δάκρυα > new sg. δάκρυον) and have sprung from the gen. pl. γαλόων which is, after all, the most frequently attested form in Homer. Attic would

[3] A 'Lindeman variant' (i.e. the syllabic representation of a liquid/nasal before a vowel) such as the one proposed by Solmsen is possible only in words that would otherwise be monosyllabic, cf. Schindler (1977).

[4] The putative by-form seen in λέγεται καὶ γάλλαρος is an invention of the editor Lentz, see Dunst (1963).

[5] This means that Latin would have levelled the paradigm in exactly the opposite way.

then have preserved the old nom. sg. but reinterpreted it as an o-stem, a typical Attic development (see below under ἠώς). If all this is correct, then the thematic forms in Homer and in Attic are of different origin. Lindeman-variants *$gl̥̄s$ and *$glās$ would then have to be assumed as the most likely pre-forms. However, as we shall see below, a nom. sg. with zero grade of the root is at odds with what little we can reconstruct about the original accentual and ablaut pattern of the animate s-stems. *$gl̥̄s$ would then have to be secondary for **$gelās$ with (a) analogical introduction of the zero grade from the oblique cases and (b) subsequent 'lindemanization' *$glās$ > *$gl̥̄s$.[6] Problematic at the best of times, it seems implausible to posit such a development for a relatively late, i.e. inner-Greek, stage.

Attempts to interpret γάλως as an s-stem are thus faced with serious problems. It is possible, however, that γάλως does contain a *-$u̯$- and that it goes back to *$gl̥̄u̯s$ with the long diphthong being protected for paradigmatic reasons from the workings of Osthoff's Law. This would rather elegantly permit us to explain the Homeric forms as the result of quantitative metathesis (e.g. gen. *γάλωϝος > *γάλωος > *γαλόως), with subsequent thematization (see section 3.3 below); Latin *glās* could go back to the same formation.[7] However, even this is not without problems. If the reconstruction is correct, it still remains completely enigmatic why the word became a thematic stem, given that the other kinship terms in -ως (μήτρως etc.) retain their original inflection.

To sum up, neither of these explanations seems entirely satisfactory. It appears unwise to draw any conclusions from them and they will remain outside our considerations.

Masculine S-stem Nouns

As is obvious from the list given above, the group contains masculine and feminine nouns alike. However, it is highly remarkable that masculine and feminine nouns do not develop in the same way within the history of Greek. It has often been noted that the mascu-

[6] It is true, of course, that no corresponding full-grade form is attested anywhere. The Phrygian form can hardly be taken as evidence as an e-grade would be rather unexpected in a formation in *-*ro*-.

[7] For *$gl̥̄u̯s$ see also Schmeja (1963).

line nouns become t-stems whereas the feminine ones always remain s-stems though it is unclear as to why this is so.[8]

ἔρως

Homer only uses the nominative singular of this word (*Il.* 3.442, *Il.* 14.294) and no derivatives are found. Hence, it is unknown whether the noun already had a dental inflection. From the Homeric hymns onwards, the dental inflection prevails throughout (apart from a late analogical accusative ἔρων) and s-stem forms seem not to be attested. However, forms like ἔραννος and ἐραστός appear to point to a neuter s-stem *ἔρας and it may well be that the relation between *ἔρας and ἔρως is the same as that between γέρας and Skt. *jarás-* (probably feminine) which will be discussed in greater detail below.

While the inflectional type of ἔρως in Homer is unknown, it can safely be concluded that the transformation into a dental stem was complete after the epic period. On the other hand, it may be that Homer knew a complete paradigm of a masc. o-stem ἔρος. This also survived into Classical times but is clearly a poetic form. While it is commonly regarded as an aeolicism, Szemerényi[9] pointed out that the famous phrase ἐξ ἔρον ἕντο (7 times *Il.*, 15 times *Od.*) might conceal an original ἔρο(α) and that ἔρον could thus be the result of eliminating the hiatus. This phrase accounts for all Homeric instances of the accusative save two (*Il.* 13.638, 24.227) which are also pre-vocalic, allowing for the same explanation. This leaves us with one instance of ἔρος (*Il.* 14.315) where the frequent variant reading ἔρως does not fit the metre, and an instance of the dat. sg. ἔρῳ (*Od.* 18.212: τῶν δ'αὐτοῦ λύτο γούνατ', ἔρῳ δ' ἄρα θυμὸν ἔθελχθεν) which may be read ἔροι and for which a *varia lectio* ἔρως . . . ἔθελγεν also exists.

After Homer, the thematic form is very widespread in poetry of various genres; in view of *Il.* 14.315 it is also guaranteed for Homer, and in fact it can (and maybe should) be read in all instances in the text. The denominal adjective ἐρόεις (Hes., *h. Hom.*) is also likely to be based on this form. This does not mean, however, that we need to

[8] See e.g. Chantraine (1933) 423 and more recently Clackson (1994) 128.
[9] Szemerényi (1967*b*) 23 n. 61.

reject the original existence of an s-stem ἔρως. Such a formation is still likely to have existed, in view of the t-stem that we find in post-Homeric Greek and, in particular, in view of forms like ἐραστός.

γέλως

Homer has a greater variety of forms of γέλως. First, the nominative singular which occurs once in *Il.*, three times in *Od.*; a dat. sg. γέλῳ which can be read γέλοι (*Od.* 18.100: the vulgate has γέλῳ ἔκθανον); and an acc. sg. γέλω (*Od.* 18.350, 20.8, 346). For the latter, an old *varia lectio* γέλων exists which, in turn, can also be read γέλον.[10] Forms with -τ- exist only as improbable variant readings in Homer but are common from tragedy onwards. In Attic, an acc. sg. γέλων, comparable to ἔρων, is also used but is confined to tragic poetry and comedy. The overall picture that emerges is thus puzzling. On the one hand, the assumption of an animate s-stem seems to be suggested by the denominal adjective γελοῖος.[11] On the other hand, ἀγέλαστος[12] (in Homer said of ἔργα; only in *Od.* 8.307) 'without laughter, sinister' equally points to an s-stem though of a very different kind, namely (at least at first glance) to a neuter form *γέλας. However, all Homeric case forms can be interpreted as belonging to a masculine o-stem paradigm as well (compare also ἔρος). The alleged Aeolic γέλος (cf. LSJ, GEW s.v. γέλως), however, is rather uncertain. It only seems to occur in the grammarians[13] and

[10] Some codices have γέλον for *Od.* 20.346; see Ludwich *ad locum* for details.

[11] Once again, the attestation is complicated and the interpretation difficult. In Homer, the word occurs only once in *Il.* 2.215 where it is quadrisyllabic and scans ∪ — ∪ ∪; γελοίιον seems to be read in all codices. Schulze (1892) 22 sought to emend this to γελώιον. The codices show verbal forms like γελώοντες, γελώων, although only in *Od.* and here only in books 18 and 20. These are sometimes read as standing for γελοίοντες, etc. This seems somewhat unlikely and Schulze may be right; this would have further implications on which see further below. In any case, γελοῖος is securely attested from Archilochos onwards.

[12] Variant reading γελαστός.

[13] The evidence is Tzetzes' commentary on Hesiod *Erga* 1.412 and two works περὶ διαλέκτων, one by Gregory of Corinth and one by an unknown author, referred to as *Grammaticus Meermannianus*. Both Gregory and *Meermannianus* are dependent on earlier literature, especially on Johannes Philoponus' περὶ διαλέκτων, and it is not surprising that both Gregory and *Meermannianus* have the same wording λέγεται δὲ παρ' αὐτοῖς ὁ ἔρως ἔρος, ὁ γέλως γέλος.

may be a learned invention, based on an analogical proportion *ἔρως* : *ἔρος* like *γέλως* : *X*, *X* = *γέλος*.

Yet the problems do not stop here. Clackson[14] suggests that Arm. *całr* 'laughter' is an old u-stem and assumes for the sake of uniformity that *γέλως* goes back to **ĝelh*$_2$*-ōu̯-s*. He takes *γελάω* to be thematized from an original athematic verb **γέλᾱμι*; this had already been put forward in 1936 by Specht and was adopted by Schwyzer.[15] *ἀγέλαστος* would then contain an unetymological 'parasitic' *-σ-* like *ἄγνωστος* etc. According to Clackson, the adjective *γελάνης* 'cheerful' (2 examples in Pindar) is more likely to contain a ready-made suffix *-άνης* rather than to be transferred from **γελᾱνός* (< **γελασ-νός*) on the analogy of other adjectives in *-άνης*.[16]

While Clackson's analysis of the Armenian data seems faultless, it may be worth reconsidering the Greek data. If *γέλως* were < **ĝel*(h_2)*ōu̯-s* we would have to read the pyrrhic acc. *γέλω* as *γέλοϝ'* in u 346. However, the Greek nouns in *-ως* < **-ōu̯s* do not show ablaut in the suffix and thus it would be hard to argue for an acc. **γέλοϝα*.

Secondly, the present *γελάω* (only occurring as *γελόω*/*-ώω* in Homer) is much rarer than the forms containing *-σ-*, *ἀγέλαστος* and the aorist *ἐγέλασσα*. Furthermore, the forms of the present seem to be later than the forms containing *-σ-* (first in *Od.* whereas the aorist is frequent already in *Il.*) and it may be more plausible to take the aorist *ἐγέλασσα* as the starting point[17] and to explain the rare present forms in *-όω*/*-ώω* as indeed standing for *-άω* but as back-formations from the more frequent aorist. We may add that the creation of a verb in *-άω* from a neuter noun in *-ας* is a well-attested process in Homer, cf. *σκεπόω* (for *-άω*) 'shelter' < *σκέπας* 'shade, shelter';[18] but an original athematic **γέλαμι* with subsequent transfer to the *-άω* class cannot ultimately be ruled out.

[14] Clackson (1994) 126 ff. [15] *Gr. Gr.* i. 680.
[16] For this latter explanation see Manessy-Guitton (1972) 93.
[17] Thus Tucker (1990) 208 f. [18] See Tucker (1990) 251.

Thirdly, although an adjective *γελανός is not directly attested, it may still be inferred from the denominal verb γελανόω 'make cheerful/calm' (*hapax*, B. 5.80).

In Clackson's favour it can be argued that the denominal adjective γελοῖος in Homer may have to be read as γελώϊος, a formation that would be typical for stems in -ōu̯-, cf. Hom. πατρώϊος (never πατρῷος). But this then forces one to assume that γελοῖος itself is an analogical formation which is unfortunate and an uncheckable assumption. There also remains the fact that Arm. *całr* is a u-stem (gen., dat., loc. *całow*) which may point to an inherited formation.[19] However, it is also possible that the Arm. u-stem is the result of an analogical process: nom. *ĝelh$_2$-ōs > *celu, gen. *ĝl̥h$_2$-s-es (or similar) >*cała(h)-, with spread of the -u- from the nom.

On the basis of this evidence alone, then, the interpretation of γέλως as an animate s-stem noun in Greek seems to be the most likely scenario; the existence of a neuter noun *γέλας is much more uncertain and will be re-evaluated at the end of this chapter. Yet it is remarkable that we assume a very ancient formation but from a root that is found only in two very closely related languages. But Clackson's analysis should under no circumstances be discounted, especially as the connection between animate nouns in -ως vs. neuter nouns in -ας is not as clear-cut as it may seem at first (see section 3.4).

ἰδρώς

From ἰδρώς, Homer knows a dat. sg. ἰδρῷ which can be read ἰδροῖ in both instances (*Il.* 17.385, 745) and an acc. sg. ἰδρῶ (*Il.* 4.27, 10.572, 574, 11.621, 21.561, 22.2) which may always be read as ἰδρόα and must be so read in *Il.* 10.574. A thematic formation *ἴδρος is otherwise not attested. After Homer, only forms with -τ- occur. The first such form is ἰδρῶτα (Hes. *Erga* 289). The feminine gender assumed for Sappho 31.13 (thus, e.g., LSJ, GEW, DELG s.v.) is almost certainly the result of a misreading (see immediately below). We have to assume that the original s-stem (very probably also in Lat. *sūdor*; or is ἰδρώς a contamination of an -r- or -ro-stem and an s-stem?)[20]

[19] See Schmitt (1981) 98. [20] See Stüber (2002) 157.

became a *τ*-stem after Homer. A neuter s-stem is found in *ἶδος* 'sweat, heat' (Hes.+).

In the above list, the gender of *ἰδρώς* 'sweat' was given as masculine, which is in accordance with the prevailing usage of this word in Greek (though in Homer the gender is indeterminable) and related languages (Lat. *sūdor*[21] etc.). Yet LSJ and the etymological dictionaries give an alternative feminine gender for *ἵδρως* in Sappho. In fact, this is based entirely on an early commentator's note;[22] the word occurs only once in Sappho, in 31.13. Codex P gives *†ἐκαδε μ' ἵδρως Ψῦχρος κακχέεται†* which has been conjectured as *κὰδ δέ μ' ἵδρως κακχέεται* (Ahrens), *κὰδ δέ μ' ἵδρως Ψῦχρος* (Page) and *†ἐκαδε†* *μ' ἵδρως κακχέεται* (Hamm). At best, the gender is indeterminable, and if the codex can be trusted, it would confirm that the word is masculine. There is not the slightest indication that it was used as a feminine, and I would suggest that this interpretation came about by a segmentation *ἐκ ἀ δέ μ' ἵδρως* which appears to be a common restoration, but necessarily wrong not just because of the gender of *ἵδρως* but also because the use of the article is 'against Lesbian practice'.[23] The passage is self-evidently extremely corrupt but it would seem quite unwise to conclude from it that *ἵδρως* was used as a feminine in Sappho or indeed anywhere else.[24]

χρώς

In the case of *χρώς*, the evidence is similarly not without complications. Leaving aside the uncertain interpretation of Myc. *a-ko-ro-we*,[25] Szemerényi argued that the s-stem nature of *χρώς* becomes clear from the Homeric paradigm *χρώς*, *χρόα*, *χροός*, *χροΐ* and the

[21] On which see Rix (1985).

[22] *Epim. An. Ox.* 1.208.13sqq.: *ἱδρώς· τοῦτο παρ' Αἰολεῦσιν θηλυκῶς λέγεται· ἀναδέχεται κλίσιν ἀκόλουθον θηλυκῷ γένει.*

[23] See Page (1955) 25.

[24] See also Hamm (1957) 89.

[25] It is not certain that this word is a compound of *χρώς* at all. *ἀ-χρώς* 'colourless' and *ἁ-χρώς* 'of the same colour' have been suggested but equally 'with pointed ears' (*ἀκρο-* + *οὖς*, *ὠτός*) and even 'with clipped ears', see *DMic.* s.v.

compounds in -χροής and -χρής.[26] The case is far from watertight, though, especially as the compounds can be explained on a different basis (see section 4.5).

Already in Homer, forms showing the dental inflection begin to appear. A gen. sg. χρωτός is attested in *Il.* 10.575, an acc. sg. χρῶτ' in *Od.* 18.172 and 179 and further in Hes. *Erga* 556. These forms are exceptional in Homeric Greek (3 forms with -τ- as opposed to 95 without) and occur in passages generally said to be 'late'. In later Greek this picture is reversed. Forms without -τ- occur occasionally in Sappho (where they might be Homeric reminiscences) and in tragedy, where they are already much rarer, however, than forms with -τ-. Finally, the formulaic expression ἐν χρῳ̣̂/χροί 'on the skin' occurs sometimes in Attic/Ionic prose (e.g. Hdt. 4.175, Th. 2.84, X. *HG* 1.7.8), but otherwise forms with -τ- dominate throughout.[27] With regard to χρῳ̣̂, this form is exclusively Attic and is another example of the weak Attic tendency to reinterpret former animate s-stem nouns as belonging to the 'Attic' second declension. However, in the absence of corresponding genitive and accusative forms, it is obvious that in the case of χρώς, the Attic declension never achieved paradigmatic status.[28]

[26] See Szemerényi (1967*b*) 21ff. for an exhaustive discussion. He comes to the conclusion that the most likely pre-form was *χρόως, χρόο(σ)ος even though the phonological shape of the word is somewhat unusual. While there does not seem to be a decisive argument against this *per se*, the compounds of this word (see section 4.5) do not, in fact, force this reconstruction. Some earlier scholars argued for a diphthongal stem in stem in *-ou̯- (thus *Gr.Gr.* i 578; see also Sommer (1948) 21) but this seems unlikely in view of the declensional pattern (: πάτρως, πάτρωος). It should be added that the Attic 'doublet' χροιά, χρόα does not help solve the problem. Even if the two forms, in spite of the accentual difference, represent the same formation, it cannot be concluded that the Attic oscillation supports a derivation from *-ou̯i̯a as χροιά seems to be the preferred form in poetry while prose clearly favours χρόα. If this means that χροιά is the atticization of Ionic χροιή and that only χρόα is the genuine Attic form, then a derivation from *-osi̯a is much more likely.

[27] The sum total of the remaining evidence for non-dental forms is as follows: χρόος *h. Aphr.* 162, *h. Dem.* 278; Hes. *Th.* 191, *Erga* 536, and 6× E.; χροΐ *h. Aphr.* 64, 171/172, *h.* 26.17, 30.13, Hes. *Erga* 74, 76, Pi. *Nem.* VIII 28, 1× A., 1× S., 5× E.; χρόα *h. Dem.* 50, *h.* 31.7, Hes. *Th.* 5, *Erga* 198, 522, 575, 9× E. Thus, apart from the phrase ἐν χρῳ̣̂/χροί discussed above, it is limited to poetic language.

[28] Considering the distribution of the forms, it seems less likely that χρῳ̣̂ should have received its long vowel directly from the nominative, i.e. without any transformation (thus Szemerényi (1967*b*) 23 n. 60).

εὐρώς

For *εὐρώς*, no form without *-τ-* is attested. The word is not found in Homer but the derivative *εὐρώεις* 'mouldy' *Il.* 20.65+ points to an s-stem.[29] The noun itself is attested from Theognis onwards; as it has no known etymology, however, we will not draw any further conclusion from it.[30]

3.3 OBSERVATIONS ON THE NOUNS IN *-ως* AND THEIR HISTORY IN GREEK

In the preceding section the available evidence for animate s-stem nouns in early Greek has been presented, together with the relevant material from later authors. From this data, a number of remarkable observations can be made.

For a start, the identification as a masculine s-stem seems reasonably certain only for *ἰδρώς*; in all other cases there is considerable doubt. The development of the dental inflection is clear but may have nothing to do with the alleged s-stem nature of these formations; rather, we should say that masculine nouns in *-ως*, other than the nouns in **-ōu̯-*,[31] had a strong tendency to develop into stems in *-τ-*. Taking *χρώς* as an example, this looked, from a Greek point of view, like a root noun and was all the more prone, therefore, to such a change. It would seem that these forms arose as a result of the ambiguity of the nominative. I cannot share Szemerényi's view[32] that *ἰδρώς* was influenced by *ὕδωρ*, more precisely that the gen. **ἰδρόος* was influenced by *ὕδατος* which led to **ἰδρόατος* whence *ἰδρῶτος*; the two forms have too little in common for this to be likely. The fact that immediately after Homer practically only dental forms exist may suggest that the epic forms are archaisms and that the dental forms did already exist in Homeric times – which is certain for the word for 'skin' – but were consciously kept out of the epic language. But a somewhat staggered chronology is equally conceivable and perhaps more likely, and *χρώς* may well have been the first

[29] Actually attested is only the pl. nom./acc. *εὐρώεντα* (twice) < **-osu̯-* in *Od.*
[30] A connection with Skt. *var-* 'cover' is unlikely, cf. *EWAia.* ii. 512 f.
[31] Type *πάτρως*, but perhaps also nouns like *λάγως* 'hare', *θώς* 'jackal'.
[32] See Szemerényi (1967*a*) 79.

to change simply because it looked like a root noun. It is at any rate clear that the root noun inflection was unwelcome. A different, though ultimately not successful strategy was to treat these nouns (of both genders) as thematic. This is found in Attic, unsurprising in view of the existence of the type λεώς 'people'; remarkably, it is restricted to the genitive and dative. Thus, the gen. of ἕως is regularly ἑῷ, cf. e.g. Th. 4.31 πρὸ τῆς ἕω 'before dawn' and the dative ἑῷ. In the Hellenistic period this is regularized further by the introduction of the acc. ἕων.[33] On a much smaller scale, this phenomenon also occurs in Homer, cf. the dat. sg. forms ἰδρῷ and γέλῳ. This is entirely in line with what is certain for the Homeric forms of γάλως and thus ἰδρῷ and γέλῳ should be taken seriously. Remarkably, Homer even has a nom. pl. of this type (γαλώῳ), otherwise thematic forms are restricted to the gen. and dat. as in Attic.

This still leaves the question as to why the t-extension occurs in the masculine nouns but not the feminine ones. Of course one could take the position that as the number of nouns concerned is so small and ἠώς and αἰδώς are well established in the language this is simply due to chance. But such an argumentation is hardly satisfactory and it may be worth looking at the broader picture. The t-extension is also found in the perfect active participle and here, only in the masculine and neuter, to which it may have been transferred from the masculine.[34] This, together with the transition of the comparatives in *-(*i*)*jos*-to n-stems (the regular type -(ι)ων as contrasting with the apparently regular s-stem inflection in Mycenaean and the well-known relics in Early Attic), at least serves to show how prone to reanalysis the animate s-stem inflection was.

Yet, a comparison between the perfect active participle and the masculine s-stems is not unproblematic. In the first place, the

[33] If Herodian's note according to *EM* 220.9 κλίνεται δὲ τῆς γάλω is to be taken seriously this would be an exactly parallel case, independent of the question whether the word originally was an s-stem or not.

[34] But note that neuter φῶς 'light' is also a t-stem in Attic (again, quite possibly because it looked like a root noun), whereas Homer shows no trace of the dental inflection. Admittedly, the case is not exactly comparable as Homer only uses φάος and φόως, never φῶς. It seems that in Homer contraction to a monosyllabic word is generally avoided but is acceptable in words for parts of the body, cf. in particular οὖς which is contracted because of the existence of θρίξ, χείρ, κῆρ etc.

participle retains the original quantitative ablaut (*-ώς, -ότ-ος*) whereas the nouns in *-ως* show no trace of ablaut. Secondly, the two phenomena are clearly chronologically distinct. Whereas the transformation of the perfect participle into a t-stem is already complete in Homer, at that stage the transformation of the s-stem nouns seems to be only beginning. The similarity in the underlying tendency is remarkable but it should be seen as a recurrent rather than as a unified phenomenon.

Even if this view is accepted, it still remains unclear why the two feminine nouns are totally immune to the dental inflection. Clearly, *-τ-* was not understood as a marker of masculine nouns, cf. the Homeric feminine formations *δαίς, δάμαρ, ἑσθής, χάρις*.[35] It is important to note that, with the exception of *χρώς*, the feminine nouns are much more frequently attested than the masculine ones. In their usage, the feminine *ἠώς* and *αἰδώς* are much more 'personified' than their masculine counterparts.[36] In the case of *ἠώς* this is evident in passages like *Il.* 11.1f.

Ἠὼς δ' ἐκ λεχέων παρ' ἀγαυοῦ Τιθωνοῖο
ὄρνυθ', ἵν' ἀθανάτοισι φόως φέροι ἠδὲ βροτοῖσι.

Dawn rose from her bed, from next to splendid Tithonus,
In order to bring light to the immortals and men.

For *αἰδώς* a clear personification is hard to come by in Homer but the word can certainly appear in an agent type position, e.g. at *Il.* 15.657f. *ἴσχε | γὰρ αἰδὼς καὶ δέος* 'reverence and fear took hold of him'. A proper personification is more common in later poetry. Theognis 291f. personifies *αἰδώς* together with *ἀναιδείη* and *ὕβρις*, and Sophocles *El.* 249f. says that 'shame and reverence will vanish from all mankind' (*ἔρροι τ' ἂν αἰδὼς ἁπάντων τ' εὐσέβεια θνατῶν*).[37] One should perhaps add that this usage is not normally found in *γέλως* etc., and we may thus regard the non-dental inflection of the words *ἠώς* and *αἰδώς* as archaisms helped along by their usage as quasi-personal names.

[35] The same holds true for verbal governing compounds formed from verbal roots originally ending in a laryngeal (type *ἄ-γνως*). These compounds can, without any formal difference, be used as masculine or feminine, cf. e.g. *Il.* 16. 407 *πέτρῃ ἐπὶ προβλῆτι*.

[36] As far as *ἠώς* is concerned, this was undoubtedly the case already in the parent language, cf. now the extensive discussion in Janda (2000) 154 ff.

[37] An excellent overview of the personified use of *αἰδώς* is found in Long (1968) 138 ff.

Yet, it may well be that this is not the full story. Keeping in mind that the personification of ἠώς and αἰδώς is very common, it is worthwhile to look at another morphological category, namely the nouns in -ω. These are all feminine and oxytone, much like ἠώς and αἰδώς. Originally, these words are stems in *-oi̯- as is indicated by the occasional vocative forms in -οῖ (e.g. *Il.* 21.498 Λητοῖ). This reasonably common class shows remarkable similarities to feminine nouns in -ως in the crucial oblique cases. After the loss of intervocalic *-s-, on the one hand, and *-i̯- on the other, the paradigms of these words (only occurring in the singular!) looked alike, with the exception of the nominative and the rare vocative.[38] Furthermore, these words do indicate personifications, as evidenced by the derivational sequence ἀργός → Ἀργώ. This can, but need not, result in a personal name in the strict sense of the word.

Along these lines Ἠχώ (or ἠχώ), for example, is very much like ἠώς, and αἰδώς finds a counterpart in φειδώ (*Il.* 7.409+). In other words, it may be the case that this rather productive category has influenced the relic words ἠώς and αἰδώς to the effect that these retained their original inflection. It is then also not surprising that in later Greek, occasionally asigmatic nom. sg. forms of nouns in -ως and sigmatic nominatives of original nouns in -ω occur. In Hsch. the codices have Γελλώς for Γελλώ (personal name), and Philet. 9 has a nom. sg. αἰδώ.

If these considerations are correct, we have here another example of the influence of one derivational category upon another, and the mysterious morphological split between masculine and feminine nouns in -ως finds a simple explanation. From a Greek point of view we should speak not of one morphological class but two.

3.4 ANIMATE S-STEM NOUNS: THE INDO-EUROPEAN AND PROTO-GREEK BACKGROUND

Introduction

While many questions about the development of animate s-stem nouns within Greek can be explained, their Indo-European prehistory is

[38] Forms like acc. Καλυψώ etc. sometimes found in mss. should be read Καλυψῶ (<*-oα) in all cases.

complicated. In the first place, the original status of these nouns in Indo-European word formation is not entirely clear. Secondly, their original inflectional paradigm is controversial. Thus, for example, whereas Beekes[39] assumes a hysterokinetic inflection, Peters[40] reconstructs a holokinetic paradigm, while for Harðarson[41] such nouns are 'grundsätzlich amphidynamisch'. We have already seen that this may be at least in part a purely terminological question but the designation of these nouns as amphi- or holokinetic seems to be the one most promising for a consensus and is gaining ground.[42] Thirdly, the connection between these nouns and the neuter nouns in *-*os* needs to be addressed.

Any discussion of this background must begin with a strong *caveat*. One important and astonishing fact is that, while the inflectional type itself must be very ancient and is clearly on its way out in nearly all languages and from the earliest attestations onwards, apart from the word for 'dawn' as evidenced by *ἠώς*, Skt. *uṣás*, Lat. *aurōra* there is not a single absolutely certain word equation between any two Indo-European languages. As far as Greek is concerned, admittedly *ἰδρώς* appears to find a close relative in Latin *sūdor* but the formations are not identical. *αἰδώς* can be connected to the IE root **h₂eiṣd-* 'revere' (cf. Skt. *ī́ṭṭe* 'worships, reveres', Goth. *aistan* 'to shy (away from)') but the formation has no parallels. Furthermore, *ἔρως*, *εὐρώς* and *χρώς* have no established etymology. In Indo-Iranian, the evidence is also pitiful. Apart from the word for 'dawn', the stem *jarás-* 'age' would seem to stand the greatest chance of being inherited as it stands alongside the Greek neuter s-stem *γέρας* 'gift of honour', *γῆρας* 'age'. But the latter may well be secondary, as we shall see towards the end of this section. Perhaps the strongest additional piece of evidence, however, is constituted by the IE word for moon/month which will be discussed presently.[43]

[39] Beekes (1990) 220.

[40] Peters (1980) 31.

[41] Harðarson (1987) 82 and 93.

[42] See most recently Stüber (2002) 22 f.

[43] One further and possibly important piece of evidence is constituted by **péu̯mōs, pumsés*, cf. Skt. *púmān, puṁsás* 'male, man' which will be dealt with in more detail in section 4.2.

The only language where such nouns seem productive is Latin. Here, we find a great number of nouns in *-or*, e.g. *tepor* 'heat'.[44] However, it is clear that they constitute a heterogeneous group and not all of them are s-stems in origin. Moreover, in individual languages, there are a certain number of formations, to a large extent relics, that *can* be interpreted as pointing to s-stem formations in *-ōs, e.g. Lat. *vīrēs* 'power(s)' on the strength of its archaic-looking ablaut form of the suffix: *vīrēs* may be an inner-Lat. plural formation of a collective stem *$\underset{\wedge}{\mu}ih_x$-s- (to be found in the weak cases, e.g. gen.sg. *$\underset{\wedge}{\mu}ih_x$-s-és).[45] This weak stem would have ousted the corresponding strong one, e.g. nom.sg. *$\underset{\wedge}{\mu}$éi$\underset{\wedge}{h_x}$-ōs.

In sum, then, the starting point is not promising: the direct evidence that we have for Greek, leaving aside the word for 'dawn', does not appear to be inherited; and what seems to be there in the way of old formations is limited to only one language. Of course, it is possible to reconstruct an entire inflectional system on this basis as has been done. But this is a classic case where systemic-linguistic considerations clash strongly with philological ones (in the traditional sense of the word), and any reconstruction, including the thoughts presented in what follows, suffers from an extreme dearth of reliable evidence.

'Dawn'

The obvious point of departure is the word for dawn. The full grade of the root seen in Latin *aurōra* <*ausōs-a* (with the analogical introduction, typical for Latin, of the long vowel of the suffix from the nominative) <*$h_2\underset{\wedge}{e}$us-os-[46] and perhaps in Iranian (e.g. Waxi *yišīγ*<*aušah-*)[47] excludes a hysterokinetic inflection (in the strict sense of the word). If, as seems likely, *h_2u- > αὐ-[48] then the Greek forms can be derived from either the full or the zero grade of the root. I cannot see how one can decide this question, but Peters[49] opts for

[44] See Quellet (1969). [45] See Stüber (2002) 184 f.

[46] Attempts to explain the Latin form as from the zero grade of the root (Forssman (1982/3), Ringe (1988)) must be regarded as having failed, cf. Schrijver (1991) 74.

[47] See *EWAia.* 236.

[48] See Peters (1980) 11 ff., in particular 113 f. for an exhaustive discussion of the evidence.

[49] Peters (1980) 31.

the full grade because Greek has usually generalized the full grade in paradigms with a mobile accent (type λειμών). Yet it is questionable whether this observation can be used in the case of a morphologically isolated word.

In any case, the alternation between full and zero grade of the root points to a mobile paradigm, namely protero-, amphi- or holokinetic. The identical accents on the suffix in both Greek and Sanskrit do not rule out an amphikinetic paradigm as this can have come about by the generalization of the accent from the acc. **h₂eu̯s-ós-m̥* < ***h₂éu̯s-os-m̥* with accent shift according to the **kʷetu̯óres*-rule.[50] The Skt. gen. sg. *uṣás* is commonly derived from **h₂us-s-és* (or, slightly younger, **h₂us-s-ós*).[51] This zero grade of the suffix would then imply an amphi- or holokinetic paradigm. The alternative conclusion that *uṣás* is evidence for a root noun seems to be rejected almost universally[52] though with no explicit reason. Even if *entia non sunt multiplicanda praeter necessitatem* it is hard to see how a root noun could ever be excluded, and both Young Av. *ušī-* in compounds as well as the equally compositional ἠϊ-κανός could be locatives of this root noun.[53] Things are complicated further by the existence of

[50] This rule takes as its base that **e* is in principle the stress-bearing vowel while **o* is normally post-tonic, i.e. occurs in the syllable after the one bearing the stress. In (at least) trisyllabic words with a vowel sequence **é*-**o*-**x* the stress is shifted one syllable to the right. This explains not just the anomalous accentuation of **kʷetu̯óres*, but also, and importantly, the paradigmatic accentuation of the perfect on the o-grade root as evidenced by Skt. *da-dárś-a* < **de-dórĥ-h₂e* < **dé-dorĥ-h₂e*. Note that Gk. δέδορκα does not preserve the PIE accent but is the result of a mechanical accentuation as far left as the law of the three syllables allows. For the **kʷetu̯óres*-rule see further Stüber (2002) 25 with references.

[51] Cf. *EWAia.* 236.

[52] Schindler (1972) 13, Kellens (1974) 212, *EWAia.* 236.

[53] It is true, of course, that alternative explanations are conceivable; for the Avestan forms see again Kellens (1974) 212 ff. (though it seems very unlikely to me that *ušī-darəna-* contains a Caland form of the word for 'red', Proto-Iranian **ušra-*, cf. Skt. *usra-*). For Greek, the traditional etymology as 'who sings at dawn' was doubted by Risch (1990) but his objections are not decisive. I still believe the common interpretation to be correct, for the reasons put forward by Wackernagel (1943) 182 f. himself. Yet even if we accept this, ἠϊ- is ambiguous, and Peters (1980) 32 contemplates an explanation from a loc. **au̯s-es-i* which would then prove the e-grade of the suffix. Note that ἠϊ- could also stand for a dative 'who sings to Dawn', especially given the fact that the dawn is routinely personified as we have seen.

an alternative r-stem. These forms are paradigmatic in Skt., cf. voc. *uṣár*, gen. *usrás* etc. and in particular the compound *uṣar-budh-* 'awaking at dawn'. Outside Indo-Iranian they occur in isolated forms or secondary paradigms. Thus in Lith. we find a complete paradigm *aušrà* 'dawn', from Greek we may quote above all *ἦρι* 'early', *αὔριον* 'tomorrow'[54] and the secondary paradigm *ἀήρ* 'fog, air'.[55] The origin of these r-forms is not entirely clear but it is now commonly assumed that they represent old locative forms.[56] The starting point would thus be the form reflected in Skt. *uṣar-*(*budh-*) < **h*$_2$*us-s-ér* whence by various processes the other r-forms came about. And here then lies the dilemma: these r-locatives should be built on the ordinary, endingless locative and this, too, is standardly admitted. Under the holokinetic reconstruction this should be **h*$_2$*us-és* and to defend this form, for which there is no direct evidence, Skt. *uṣási* is quoted (with recharacterization by means of the standard locative ending).[57] It is evident, however, that *uṣar-* cannot be derived from this and the view can be defended only with considerable additional assumptions (secondary ablaut or analogy, both uncontrollable). Or indeed the r-locative is older than the reconstructed locative **h*$_2$*us-és*. In that case it is questionable whether PIE would secondarily have created a holokinetic locative, i.e. a form with the full grade of the suffix not found in any other form of the paradigm. Skt. *uṣási* (rare in the RV) is easily explained as an analogical formation after the other weak cases, and the accent, as pointed out above, is generalized and regular. As an intermediate conclusion, if we rule out a root noun for the sake of the argument, an amphikinetic paradigm might seem the most likely scenario. However, the loc. remains problematic and will be looked at again in the discussion of the word for 'moon, month'.

[54] The apparent underlying base word *αὐρι* (accentuation unclear) is a grammarian's abstraction, also found in Hesychius and glossed as *ταχέως* 'quickly' in order to explain Aeschylean *αὐριβάτας* (*fr.* 280) which was understood as *ταχυβήμων* 'swift-striding'.

[55] See Hajnal (1992) for a recent exhaustive discussion of the various formations.

[56] See Nussbaum (1986) 235 ff., 291 f. and Hajnal (1992) 59.

[57] See Nussbaum (1986) 291. As we have seen, Greek *ἠϊ-* is no reliable witness for such a form.

'Moon, Month'

Turning next to the word for 'moon', 'month', it goes without saying that from a Greek point of view, the word does not look nor inflect like an s-stem. The Homeric and standard paradigm is nom. sg. μείς, gen. μηνός (Att. nom. μήν is back-formed from this) which by itself could point to an n-stem (or root noun) PGreek *mēns, leading to μείς by Osthoff's Law, gen. *mēn-os < *meh$_1$n-s, *meh$_1$n-os, or to an s-stem with generalized zero grade of the suffix, i.e. *mēns < *meh$_1$-n-s-s, *mēn-os < *meh$_1$-n-s-os. The much-discussed Aeolic evidence with the gen. Lesb. μηννος, Thess. μεινος seems to exclude the former but after *-ē- a gemination of nasals occurs elsewhere in Aeolic (cf. φορήμμεθα). However, this form is from a literary source (Alcaeus) where non-etymological geminates occur frequently and such forms may be conscious hyper-Aeolicisms. Yet, a pre-Osthoff metathesis *-ns- > *-sn- with subsequent gemination in Aeolic (vs. simplification in Attic, hence μηνός) has also been argued for.[58] Whatever the correct phonological explanation of the Aeolic evidence may be, other languages firmly point to an s-stem. Skt. *mā́s*, acc. *mā́s-am*, and the undoubtedly disyllabic Gatha-Av. *må*, pointing to Indo-Iranian *maHas-, can meaningfully be derived only from *meh$_1$n̥s-. Latin *mēnsis* with its consonant stem gen. pl. *mēns-um* and in particular Baltic (Lith. nom. *mė́nuo*, gen. *mė́nesio*, older Latv. gen. *mẽness*) also furnish very good evidence for an s-stem of some sort. If the traditional and obvious etymology that connects the word for 'moon, month' with the root *meh$_1$- 'measure' is correct, this would be the only certain formation in *-nos-. It is clear, though, that the paradigm has been altered considerably in all the languages and the expected nom. sg. *méh$_1$nōs is not easy to come by.

Yet, in Germanic we find two different stem formations: an n-stem in *mēnō (e.g. Goth. *mena*, ON *máni*, Engl. *moon*) and a stem in -þ- *mēnōþs (e.g. Goth. *menoþs*, OE *mānoth*). These are usually taken as an Inner-Germanic development and paradigmatic split[59] from a former s-stem but they deserve some comment. The expected s-stem

[58] See Lejeune (1972*a*) 128 and 220 n. 6 for the development of intervocalic *-ns-.

[59] Thus Griepentrog (1995) 165 n. 25, Schaffner (2001) 531 f., n. 66. Together with the paradigmatic split Germanic shows a semantic differentiation in that the n-stem primarily means 'moon', the dental stem 'month'.

nom. sg. **méh₁nōs* would have led to PGerm. **mēnōs* where the final consonant cannot regularly have been lost. To explain **mēnō*, an analogy after the n-stems needs to be invoked: from a paradigm nom. **hanō*, acc. **han-an-un* (Goth. *hana*, *hanan*) the rule was abstracted that in imparisyllabic consonantal stems the nom. sg. is marked by a subtractive morph [-C]. This was then applied to **mēnōs* and now that the nom. sg. looked like an n-stem the rest of the paradigm followed suit. All of this is pretty abstract; there is little contact between **mēnōs* and the ubiquitous (from a Germanic point of view) n-stems.

**mēnōþs* on the other hand would have come about by reanalysis of **mēnōs* as containing a dental that was analogically introduced in the oblique cases, and from there overtly in the nom. as well. This too is hardly convincing, especially as t-stems were not productive in Germanic. However, the perf. part. inflection, cf. Goth. acc. sg. *weitwod* 'witness' *may* be a parallel though it is not entirely clear, of course, that the dental should be a Germanic innovation here.[60]

In view of these complex assumptions, it is not surprising that the t-stem (or rather a t-/s- heteroclitic stem) has been reconstructed for the parent language.[61] Beekes also explains the Lith. nom. *ménuo* as from $<$ **meh₁n-ṓt* which would certainly be a regular development (including the retraction of the accent). The difficulty with this explanation is that such paradigms are otherwise hard to find. The Lithuanian form has also been explained as the result of an analogical loss (after the r- and n-stems)[62] which again is uncontrollable. The form *mḗnuo* would, of course, be the regular nom. of an n-stem and could be compared to the Germanic forms and would represent a remarkably similar but independent development.[63] But in view of the limited evidence for an original n-stem one should ask whether

[60] See Szemerényi (1967*b*) for a thorough discussion of the evidence for a dental stem in the suffix of the perfect participle.

[61] See already Schmidt (1883) 346 and Beekes (1982) though this was later withdrawn by Beekes (1985) 62.

[62] See again Griepentrog (1995) 165 n. 25.

[63] It is worth adding that Umbrian *menzne*, Marsian *mesene*, meaning both 'moon' and 'month' also show an n-stem, albeit a secondary one attached to the s-stem; see Untermann (2000) 472 for a discussion of the Italic forms. OPruss. *menins*, still found in dictionaries, is a ghost form; the manuscript has *menig* which is better emended to *menis*, see *LiEW* I 439.

mḗnuo itself could not directly point to **méh₁nōs*. Such a derivation may at first glance be rejected outright, but in fact the outcome of **-ōs* at least in a barytone word (from a Lithuanian point of view) is actually unknown.[64] But even if the analogical explanation is preferred, the Lithuanian form and Germanic **mēnōþs* are the best pieces of evidence for the regular nom. **méh₁nōs*.[65] It would appear, then, that only the s-stem can be reconstructed with reasonable justification for the parent language. A small element of doubt remains, however. The n-stem that surfaces in Germanic, possibly the Baltic nom. sg., Slavic **mēs-n̥-ko-* as in OCS *měsęcĭ* 'month' and Italic is relatively widespread, albeit only in Western IE languages and in different guises. But it cannot be ruled out completely that 'moon' and 'month' were once formally differentiated in this way.

When it comes to the shape of the original paradigm of the s-stem it must first be stressed that it need not *a priori* be identical to that of the word for 'dawn' since this is a primary s-stem while the word for 'moon, month' is probably formed with a complex suffix, namely **-nos-*. Nevertheless, there do seem to be striking parallels. The constant full grade of the root in all languages points to the root being stressed in some, namely the 'strong' cases. The zero grade of the suffix found in at least Skt., Greek, Latin and OIr., as well as the Latvian gen. *mẽness*, point to a stressed ending in the oblique cases; it seems impossible to explain the zero grade as the result of an analogy. But here, in contrast to the word for 'dawn', we have good evidence for the e-grade of the suffix as well, namely the Lithuanian and Latvian oblique stem **mēnes-*.[66] Given that none of the grades can

[64] Endzelin (1957) 127 also derives *mḗnuo* from **mēnōs*.

[65] In addition, one should mention Myc. *me-no-e-ja*. If this is to be connected to the word for 'moon', cf. the ingenious explanation of this word as 'décoré de lunules' suggested by Ruijgh (1967) 237, we have evidence for a Greek stem **mēnoh-*, again pointing to a nom. **méh₁nōs*. This then means that ablaut in the suffix of this noun still existed in early Greek and consequently it would be very attractive to explain the *-η-* found in *μηνός* not as forms unaffected by Osthoff's Law but rather as the simple result of an inner-paradigmatic analogical spread of the long vowel regular in, say, acc. **mēnoha*.

[66] One could, of course, be tempted to explain this full grade as analogical after the r- and n-stems as well but this would clearly be an analogy too far: if it had not been there originally then the entire paradigm would have looked nothing like the r- and n-stems and consequently analogical influence would be very hard to motivate.

easily be explained as secondary, the most likely scenario is that the word was holokinetic (or amphikinetic with a loc. showing full grade of the suffix) – and thus indeed comparable to the word for 'dawn' for which one might be prepared to admit a loc. **h₂us -és-(i)* after all.

There remains the question, then, why the expected nominative is so scantily attested and the zero grade of the suffix has been generalized almost everywhere. The answer lies, in my view, in the pragmatic use of the cases. At least in the meaning 'month' the genitive of time **meh₁ns-és* (allowing for an early generalization of the full grade of the root) 'during (the) month (X)' will have been extremely frequent,[67] and from there it spread, to other cases including the nominative in most languages.

In sum, then, with all due caution, these two pieces of evidence, semantically very close to each other, seem to support one another, and if it is suggested here that the holokinetic or amphikinetic inflection (with a locative with a full-grade suffix) is the most likely one then this is not least because of this parallelism. As an additional though much more uncertain piece of evidence we may add Skt. *púmān, puṁsás* 'male, man' if we accept Adams's reconstuction as **péu̯mōs, pumsés*, showing exactly the paradigmatic accent alternations as expected.[68]

Evidence Limited to Greek

Does all this square with the data for which evidence is limited to Greek? Dor. *αἰές* 'ever', 'always' looks very much like an endingless locative **h₂eiu̯-és* or **h₂iu̯-és*.[69] The Attic form *αἰεί* is traditionally explained as < **h₂eiu̯-és-i*. It has long been noted, however, that this pre-form should have resulted in ***αἰεῖ*.[70] For this reason Klingenschmitt regards *αἰεί* as the dative of the noun found in Skt. *áyu-* 'life,

[67] Indeed, in Myc. only the gen. *me-no* is attested. There can be little doubt that the temporal gen. is of PIE age, cf. not just its frequent use in Gk. but also Early Lat. *nox*, Goth. *nahts*, prob. also Ved. *aktóḥ* 'by night', Russ. *včerá* 'in the evening'.

[68] See Adams (1985). Unfortunately this word is limited to this one language and the root ablaut would have to have been abandoned.

[69] See *DELG* and *GEW* s.v.

[70] First Parmentier (1889) 86; apparently independently Klingenschmitt (1975) 78.

life span' and compares Av. dat. *yauuē* 'always'. The match is semantically exact but the different root gradations (Greek has generalized the 'thème I' but Avestan knows only 'thème II', cf. also gen. *yaoš*) show that the formations are not directly comparable. In order to overcome this difficulty, a locative **h₂ei̯u̯-es-í*, i.e. a more recent form dating from the time after oxytonesis had been generalized in the oblique cases but before it was limited to monosyllabic stems in Greek, has been postulated.[71] This would rid us of the assumption that αἰεί and αἰές are completely different formations. On the other hand, it cannot be completely ruled out that Dor. αἰές was formed after χθές which seems to be inherited, cf. Lat. *herī*, Skt. *hyás* 'yesterday'.[72]

αἰεί and αἰές *may* point to an s-stem, therefore, but this is by no means certain. Even if right, there is no guarantee that this was an animate s-stem. However, in this context an acc. sg. αἰῶ is often quoted.[73] This form is a mere restitution by Ahrens for αἰῶνα in A. *Ch.* 350[74] but strongly favoured by the metre. αἰῶ could be explained as a shortened form and an *ad hoc* creation, comparable to (and in analogy of?) the very frequent Ποσειδῶ. A neuter s-stem *αἶος, on the other hand, would, from both a morphological and a semantic point of view, be possible. It should be pointed out that the Skt. s-stem *áyuṣ-* is neuter as well—but obviously morphologically different. Ultimately, no Greek form need go back to an s-stem of any sort at all and it is probably misguided to regard αἰῶ as evidence for an animate s-stem *αἰώς. Even less does αἰές furnish any proof of an e-grade in the suffix of such a formation.

Alongside αἰδώς we find a negative compound ἀν-αιδής 'shameless' which, together with the denominative verb αἰδέομαι[75] (fut.

[71] See Hoenigswald (1987).

[72] Klingenschmitt (1975) 78 n. 7 offers yet another explanation: αἰές < **h₂ei̯u̯-és*, an original gen./abl. which is a serious possibility.

[73] Cf. *DELG*, *GEW* s.v. αἰεί.

[74] On the basis of one of the *Anecdota Graeca* (Bekker i. 363): αἰῶ τὸν αἰῶνα κατὰ ἀποκοπὴν Αἰσχύλος εἶπεν. A second instance of this may now have to be added if ἐς αἰῶ (*Anthologia Graeca*, Appendix 200.3) is correctly interpreted as 'forever'.

[75] Alongside the primary and only poetic αἴδομαι. Both verbs occur in Homer but the apparent preponderance of the denominative may be a mirage as αἰδεῖσθε and αἰδεῖσθαι may in fact be Attic forms for αἴδεσθε and αἴδεσθαι and have entered our text at the stage of redaction.

Hom. *αἰδέσσομαι*, aor. imp. *αἴδεσσαι*) seems to point to a stem *αἰδεσ-*; but the equally Homeric *αἰδοῖος* is derived from *αἰδοσ-*. As the prehistory of the word is completely obscure, it is difficult to know what conclusions to draw from it other than the evident one that both *αἰδεσ-* and *αἰδοσ-* were available as stems at a certain time. It is possible to ascribe *αἰδεσ-* to a neuter noun **αἶδος*[76] but as there is no trace of this anywhere this must remain speculative. Of course, such an interpretation is dependent on one's view regarding the connection between neuter nouns in *-os* and animate ones in *-ως* which will be dealt with presently. Interestingly, some parallel evidence comes from Latin where we find *honestus* alongside *honōs*, *honor*, a morphological pattern that is otherwise isolated.[77] The assumption of an earlier neuter noun **honos* is in principle unwarranted but, given the existence of the parallel forms *decus* : *decor*, *robur* : *robōsem*, such a noun cannot be totally excluded. Yet it is clear that in Latin formations in *-ōs* became productive and the Latin scenario may not prove anything for Greek here. If we are prepared to separate the Greek from the Latin evidence, then another route for creating *αἰδέομαι* opens itself. *ἀναιδής* can also be derived from *αἴδομαι*[78] and from this a stem *αἰδεσ-* may have been abstracted that was then used to form *αἰδέομαι*, cf. the formation of *κλέομαι*, *κλείω* from *κλέος*.[79] But in truth the situation may be even more complex. There are certain aspects concerning the use of *ἀναιδής* to be discussed in section 4.5 that suggest a nominal derivation, but starting in the neuter *ἀναιδές*, and from this a stem *αἰδεσ-* was abstracted that ultimately gave rise to *αἰδέομαι*.

It is also important to note that the nouns in *-ως* may not be of monogenetic origin and it is entirely conceivable that some animate s-stems followed the proterokinetic ablaut class—after all, the formative suffix may not in itself determine the accentual class.[80] But

[76] See Stüber (2002) 96.

[77] Cf. *Lat. Gr.* i. 379. It is also worth pointing out Lat. *maiestās*, providing, it would appear, the only good piece of evidence for an e-grade in the suffix of the comparative.

[78] See section 4.15.

[79] See Risch (1974) 300.

[80] Properties of the root may well be connected to this as well; this is particularly clear in 'Narten' type formations even if one considers the lengthened grade found in a number of such formations secondary as I do.

again it must be pointed out that it is highly questionable whether we can project any of the terms listed at the beginning of this chapter, with the exception of the word for 'dawn', back into PIE and thus it may be anachronistic and thus illegitimate to apply terms like 'proterokinetic' here. Given the apparent contradiction (non-reconstructability of these nouns : very archaic-looking morphological type) it may actually be the case that at a very early stage in Greek the nouns in *-ωϛ*, just like the ones in *-αϛ* (cf. e.g. *δέπαϛ*), were not entirely unproductive or could absorb loan words, though it is clear from the very small number of such formations that *-ωϛ* was far less successful than *-αϛ*.

The Origin of Animate S-Stem Nouns

This then leads directly to the question of the ultimate origin and nature of the animate s-stems and over the last one hundred years or so views have changed dramatically, together with the views of the PIE gender and number system.

For Brugmann,[81] representing the general view of the time, these formations arose relatively late in the proto-language as secondary animations or personifications of existing neuter nouns and he could point to Lat. *Venus* fem. = Skt. *vánas-* neut. 'desire'. From a formal point of view this seems quite possible although this example would actually show something rather different, namely the simple reinterpretation, in a single language,[82] of a neuter form as animate. In the formations under discussion, however, there is obviously a formal difference, i.e. neuter **-os* vs. animate **-ōs*. In a nutshell, the problem centres around the question as to how this **-ōs* is to be analysed: as **-os-s*, i.e. the o-grade suffix + the ubiquitous nom. sg. marker for animate nouns which would have led to **-ōs* by means of simplification of the final consonant with compensatory lengthening of the

[81] First in 1879 24 ff., later in *Grundriß*² ii,1. 529 ff.

[82] This seems to be a speciality of Latin, cf. the otherwise unparalleled use of the neuter noun **u̯étos* 'year' (cf. Greek *ἔτοϛ*) not just as animate but even as an adjective. The prehistory of the adjective *pūbēs, pūbēris* 'mature, grown-up' and the relationship between this and the fem. noun *pūbēs, pūbis* 'adult population; puberty' are not clear; see Adams (1985) for a possible scenario and cf. section 4.2.

preceding vowel;[83] or as *-*os-h*$_2$, i.e. the o-grade suffix followed by the common 'collective' marker, with essentially the same development. While it has been argued[84] explicitly for Latin that masculine formations like *robōsem* were developed to 'esprimere una nuova più intensa dinamicità', to express magic forces, in more recent times and with a view to the common IE situation, the 'collective' theory commands the field completely.[85] In order to arrive at a better picture, a broader view of the facts is needed.

That there existed collective formations in *-*ōs* belonging with neuter nouns in*-*os* is commonly admitted. Yet how these themselves have to be understood morphologically and morphonologically is a difficult matter. It is generally supposed that, in origin, the collective was a derivative category, belonging to the neuter or 'indistinct' gender.[86] When the class system of PIE changed to a gender system proper and the number system was regularized, the collectives partly took on a paradigmatic function inasmuch as they could now serve as neuter plurals while previously the neuter was indifferent as to number. This ties in quite well with what is generally known as the animacy hierarchy in number distribution[87] and, for our s-stems, is still clearly seen in Av. where the nom./acc. pl. *manå* (*manåṣ-ca* in sandhi) can straightfowardly be derived from **men-ōs*. Partly, however, these forms would have to have been reinterpreted as animate nouns.

[83] In essence, the same process long believed to lie behind **ph*$_2$*tēr* < **ph*$_2$*terr* < **ph*$_2$*ter-s*. This theory is commonly believed to go back to Szemerényi (1962) 13 and has found its way into Collinge (1985) 237 as 'Szemerényi's Law' though in this form the explanation goes back to Wackernagel *Ai. Gr.* i. 68 who reconstructs **paters* and assumes an 'uralte Ersatzdehnung'; but already Schleicher (1871) 13 reconstructed **patars*, **dusmanass*.

[84] See Boscherini (1959); for an attempt to refute this view cf. Leumann (1964) 100.

[85] See most recently Stüber (2002).

[86] See most clearly Harðarson (1987) and Fritz (1998).

[87] Corbett (2000) 56 ff., not dealing with PIE, offers quite close parallels for the assumed PIE situation. In all the languages discussed the picture is basically the same: number distinction stops short of the inanimate nouns. The converse and a discontinuous number distinction is claimed to be impossible. Furthermore it is interesting to note that nouns with a collective tend to be concentrated on the low end of the animacy spectrum (Corbett (2000) 117 n. 34) which would also tie in very well with the PIE scenario.

From a formal point of view, it is evident that the formations in *-*ōs* look exactly parallel to the very well attested collectives in *-*ōr* and, less well attested, in *-*ōn*. ὕδωρ <*-*ōr* vs. the base word (singular) Hitt. *u̯* < *-*r̥* or the well-known doublet τέκμαρ vs. τέκμωρ 'sign, portent', both treated as neut. sg. in Greek, may suffice to illustrate the formation. As derivatives from basic neuter nouns, one would expect them to be derived from the stem.[88] Under the traditional reconstruction, this is not the case as we have *-*ōs* and not *-*ēs*. In other words, the collective has the appearance of being derived from the nom./acc. sg. One possible way out, in principle, would be to assume that these formations in *-*ōs* are, in themselves, analogical, and as a source only *-*ōr* and *-*ōn* are potential candidates. Yet it is not at all evident where these come from. If we assume that the long vowel is due to a compensatory lengthening from *-*or*- h_2, then it is precisely those base forms in *-*or* for which there is no paradigmatic evidence whatsoever. In order to save this explanation, one could then assume that at an extremely early time, before the resonants had vocalic allophones, a consonantal cluster *-*Cr*h_2, developed an anaptyctic vowel *-*o*- which would then allow the development as illustrated above. Yet perhaps it is more likely that this happened not in stems in a resonant, but in the s-stems: *-*Cs*h_2 (e.g. **men-s-*h_2) might have developed *-*o*- as an anaptyctic vowel (> **men-os-*h_2 > **men-ōs*). Such an assumption is necessarily *ad hoc* and it is understandable only if, in this position at least, *h_2 did *not* have a vocalic tier; but it would not just explain *-*ōs* but additionally why we find, also at a relatively early stage, *-*os* in the base word—a simple analogical introduction.

Yet even if all of this is correct, it is only a partial explanation as the collective still cannot be derived from the stem: **men-s-* was not the stem. So either these formations were not derived from the stem, in which case they might well not have been independent lexemes after all, or what underlies Av. -*å̊* and Skt. -*āṃsi* is actually not *-*ōs* but *-*ēs*, otherwise unattested in this function. This would then mean

[88] The agnostic viewpoint, also encountered in the literature, that such nouns could form collectives by means of internal derivation, i.e. transferral to the amphikinetic declension, has no explanatory force whatsoever and does not address the central problem.

that we would have to separate the collective/neuter plural ending completely from the lexical *-*ōs* that we encounter, for example, in **h₂eu̯s-ōs*. This may appear unlikely and it is clear that followers of the amphikinetic dogma will have to reject this but let us not forget that the s-stems differ from all the other stems by having compounds with an e-grade suffix (*-*es*-; see Chapter 4), as opposed to the o-grade compounds of other stems.

This leads directly to the second difficulty with the collective theory. The parallelism with the stems in resonant is inexact: the collectives of the latter remain neuter under all circumstances,[89] whether they are paradigmatically anchored or not, while the independent s-stem forms in *-*ōs* are masc. or fem.—but never neuter. Of course, one could point to the thematic stems where the collective was either reinterpreted as a neut. pl. or as a fem. sg. But at least here the sg. interpretation received strong support from the inflection of the word for 'woman' (gen. **gʷnéh₂-(e/o)s* etc.) so that this case is rather different. The only way out that now helps is to assume that 'dawn' became suddenly thought of as animate and indeed that this very word was responsible for the establishment of the feminine gender.[90] We then face a serious problem in the evidence: for the one or two reconstructable s-stems in *-*ōs* there is absolutely no evidence of a concomitant neuter noun.[91] One would thus have to assume additionally that the base word had been lost. But why, then, other than for purely systemic reasons, assume a collective formation in the first place which is semantically unwarranted, to say the least, in the word for 'dawn' and implausible in the word for 'month'?

The conclusion that I draw from all this is one that goes very much against the current trends, but it is to my mind by far the most likely one: there was a suffix *-*es-/-os-* which normally formed neuter nouns with the help of the class marker *-0 (and collectives therefrom in *-*ōs* or, unlikely, *-*ēs*) but in some instances animate nouns with

[89] Latin *cruor* masc. need not be an s-stem, and indeed *cruōs* never occurs.

[90] See also section 1.12.

[91] Neither Lith. dial. *ménas* (on which see *LiEW* 438) nor Arm. *amis*, *amsoy* (simple thematization of the generalized stem **meh₁ns-*) provide any evidence for neut. **meh₁ns-os*. And if Adams (1985) is correct in reconstructing **péu̯mōs*, *pumsés*, cf. Skt. *púmān*, *puṁsás* 'male, man', then we would have yet another animate s-stem noun that can only be implausibly explained as a collective and originally inanimate.

the help of the class marker *-*s*. In other words, forms in *-*ōs* are ambigenetic and ambifunctional. As far as their inflectional paradigm is concerned, the existence of all three ablaut grades in the suffix none of which, especially in the word for month, can convincingly be explained as analogical, point to a holokinetic (or amphikinetic with suffix-stressed locative) ablaut pattern.

There remains the question then why neuter nouns and nouns in *-*ōs* seem so closely linked. As a matter of fact, if we disregard the Latin evidence of the type *decor* : *decus* which, as we have seen may be due to specific Latin developments, the main witnesses for the neuter forms comes from Greek. But what is striking here is that it is precisely not -ωϛ alongside a neuter noun in -οϛ that we find, but rather -ωϛ alongside a stem in -ασ-. This distribution remains unexplained under the strict 'collective' theory. The evidence is not plentiful but clear:

γῆρας 'age' and γέρας 'gift of honour' stand beside Skt. *jarás-* 'age' (gender in RV uncertain, in Classical Skt. always feminine); γέλως 'laughter' alongside assumed *γέλας (cf. γελαστός); ἔρως alongside putative *ἔρας (cf. ἐραστός). It is evident, then, that only one neuter noun is actually attested here as such, and for this the animate noun is found in another language.

In order to explain this fact we may recall Schmidt's words (using a slightly modernized transliteration):[92]

> Neben *ā-śā́s* [...] liegt gleichbedeutendes *ā-śíṣ*, beide schon im RV. je vollständig durchflectiert, nom. pl. *ā-śás-as* und *ā-śíṣ-as*, instr. *ā-śás-a* und *ā-śíṣ-a* usw. Vergleichen wir hiermit das ablautsverhältniss des zugehörigen verbums, 2. sg. *śás-si*, nom. pl. part. aor. *śiṣ-á-ntas*, abaktr. imperat. aor. *sīša*, dann ergiebt sich, dass die beiden gleichbedeutenden bisher als *ā-śás* und *ā-śís* angesetzten stämme durch zerfall eines einzigen in der flexion ablautenden, nom. *āśā́s, acc. *āśā́sam*, gen. *āśiṣás usw. entstanden sind. Genau wie *āśā́s, *āśā́ zu *āśiṣás, abaktr. *sīša* verhält sich nun *tavā́s, *tavā-* zu *taviṣá-*, abaktr. *tevīši*.

And further, p. 386:

> Den verhältnissen von *tavā́s, *tavā-* zu *taviṣyáte* [...] entsprechen die von γέλως zu γελάω (aus -ασjω oder -ασω, vgl. μελάνει), γελαστός, von ἔρως zu ἐραννός (aus *ἐρασνός).

[92] Schmidt (1889) 382.

Schmidt's explanation may contain a great deal of truth. It is obvious that, wherever a certain etymology of the root involved can be established, the root seems to end in *-h_2; the clearest case is the word for 'age' (cf. Skt. *jarimán-* 'age', zero grade stem *jūryati* etc.). This means that we can indeed explain the Greek situation as the result of the break-up of a single paradigm. Consider again the word for age. Assuming a stem ending in *-*ōs* (of whatever provenance), a paradigm *$\hat{g}erh_2$-*ōs* > *γέρωϛ, *$\hat{g}erh_2$-*es-os* or *$\hat{g}erh_2$-*s-e/os* (assuming again an early levelling of the root vocalism) > γέραhoϛ would have looked odd in the paradigm. On the other hand, they looked exactly like genitives (and other oblique cases) of neuter nouns in -αϛ and it seems likely that such forms were then re-interpreted as neuter and a complete paradigm built on them on the analogy of κρέαϛ etc., ousting the unwelcome *γέρωϛ. This scenario is especially likely as neuter nouns in -αϛ, as we have seen, seem to have been somewhat productive in early Greek. γῆραϛ 'age' would be an even younger formation, and it is straightforwardly influenced by the old s-aorist *γήραhα. For γέλασ- and ἔρασ- we do not even have to assume the existence of independent neuter nouns in -αϛ. Rather, these may simply contain the old ablauting stems belonging to γέλωϛ and ἔρωϛ, or indeed, if Clackson is right,[93] the existence of a nominal stem γέλασ- is a complete mirage, and the same may be true for ἔρασ- as well. In sum, then, the relationship between animate noun in *-*ōs* and a neuter noun in -αϛ is partly a mirage, and what little that is truly there is due to a secondary paradigmatic split and *einzelsprachlich*.

Conclusion

At the end of these rather complex deliberations let us now summarize. The animate s-stem nouns, as far as we can reconstruct them, were animate already in the parent language, and as no base neuter nouns are attested alongside them nor semantically likely, it is probable that they were formed with the help of the animate marker *-*s* and not derived from collectives in *-h_2. Collectives derived from neuter nouns also existed, but they are paradigmatically anchored

[93] Clackson (1994) 126 ff., see section 3.2.

and remain neuter as expected. In Greek, a number of animate s-stems without a clear etymology are attested but it is evident that various strategies are being used to eliminate this inflectional class, at least for the masc. terms. Semantically these are a mixed class, but some antonymic pairs (dawn : moon; laughter : shame/awe) appear and it cannot be excluded that some of these forms are rhyming formations. It seems unwise to go any further than this for the time being.

4

The S-stem Adjectives

4.1 INTRODUCTION

Greek possesses a large number of s-stem adjectives of the type δυσμενής 'evil-minded'. More than 6,000 different formations of such adjectives are attested, and even if one subtracts the compounds in -ειδής and -ώδης, both of which can be regarded as suffixes in their own right,[1] more that 3,000 formations remain. Clearly only a small percentage of these adjectives can be inherited and s-stem adjectives are amongst the most productive word formation categories within Greek, and they are distinctly more productive than comparable formations in Indo-Iranian.

The vast majority of these adjectives are compounds; simple s-stem adjectives are very rare and secondary (see below section 4.11). The original basis for these adjectives are neuter nouns in *-*es-/-os* and these form the nucleus for such formations. This is supported by the comparative evidence. But in Greek, these adjectives are, from a very early time onwards, no longer dependent on the existence of such nouns. Rather, they develop partly into a deverbative category, and this fact, which will be discussed in detail in section 4.7, is directly responsible for the practically unlimited productivity of the s-stem adjectives. It is thus clear from the outset that complex morphological and semantic developments have taken place within Greek. These will be analysed in detail, but we must begin by looking at the nucleus of these formations, by assessing their likely origin and the comparative evidence.

[1] See Leukart (1974) for a discussion of adjectives in -ώδης.

4.2 THE S-STEM ADJECTIVES AS AN INHERITED CATEGORY

It is commonly admitted that the parent language possessed an adjectival suffix **-es-* which served to create compound adjectives from neuter s-stem nouns.[2] The type is usually illustrated by pointing to equations like δυσμενής = Skt. (not RV) *durmanas-*, Gatha-Av. *dužmanah-*, Late Av. *dušmanah-* 'having an evil mind' from which a nom. sg. **dus-menēs* is reconstructable.

The type is best attested in Greek and Indo-Iranian, but some limited evidence from other languages also exists. First, in Armenian *erkna-berj* 'sky-high' was compared by Meillet[3] to Skt. *dvi-bárhas-* 'qui a une double grandeur'; although the stem formation cannot be established with any certainty in Armenian it is significant that the full-grade formation here contrasts with the zero-grade adj. *barjr* 'high', pointing to the same type that we have already seen in θρασύς: *-θέρσης* etc. (see section 2.3). Further, a personal name *Vescleves*, gen. *-esis* is attested in Illyrian, clearly exhibiting s-stem inflection and formally and semantically transparent as 'having good fame', identical in meaning to Greek *Εὐκλέης*.[4] Noteworthy is also the Thracian PN *Αυλουζενης* 'born in A.', with *-ζενης* seemingly corresponding to Greek *-γένης*.[5]

Turning to the less certain evidence, looking first at that found on the Italian peninsula, Venetic has a number of PNN in *-genes*, e.g. *enogenes*, *voltigenes* which looks just like the Greek forms. However, the dat. sg. is unexpectedly asigmatic: *voltigenei*, *.e.nogene.i.* and it is far from clear that the nom. sg. should continue an old sigmatic form.[6] Latin has two words that have been quoted in the context, *pūbēs*, *-eris* 'grown up' and *dēgener*, *-eris* 'degenerate'. The form *dēgener* does not represent the expected stem formation of the compound, and the *-ĕr* is not straightforward either. Other explanations are possible and more likely. In particular, given that *dēgener* is a relatively late attested word (imperial times), it may well be a back-formation from *dēgenerāre* (found since Cicero) or the result

[2] See e.g. Schindler (1975) 260.
[3] Meillet (1913) 256.
[4] See Mayer (1957) 359, (1959) 66 and 125.
[5] See Detschew (1957) 35 f., 181.
[6] See Lejeune (1974) 96 and 100.

of a juxtaposition *dē genere*.[7] *pūbēs*, *pūberis* 'grown up, adult' looks like a simple s-stem adjective.[8] Even if the *-er-* is not due to influence from *puer* 'boy', the word itself may have been secondarily formed after the negative *impūbēs*, *-eris* or *-is* where the s-stem may well be original. Neither word is attested before the first century BC and both words tend to be used by the same authors. *pūbēs* may originally have been an i-stem adjective that became an s-stem under the influence of the compound in order to distinguish it morphologically from the frequent *pūbēs*, *pūbis* fem. 'puberty; adult population'. If this is right, then it would indeed be a welcome additional witness for original s-stem compounds in **-es-*. Finally, completely obscure is Messapian *atavetes* which has been interpreted as = αὐτόετες 'in the same year' though not even the word division is certain here.[9]

Moving away from the Apennine peninsula, in Hittite, the word for 'man' has been analysed as an s-stem compound:[10] in Old Hitt. a nom. *antuu̯aḫḫaš* contrasts with an oblique stem *antuḫša-*, and Eichner interpreted this as an ἔνθεος-type compound with a holokinetic noun **du̯éh₂ōs*, gen. *duh₂és* 'Atem', thus 'Atem in sich habend'. The noun is otherwise not attested, but even if one accepts the etymology it is evident that we would be dealing with a formally very different (and indeed unique) type of s-stem compound in **-ōs*. As a second piece of—equally not entirely clear-cut—evidence we may quote *šau̯itišt-* which seems to mean 'suckling'. It has been suggested that it is derived from **sm̥-* (or **som-*) 'one' + **-u̯etes-* 'year' + **-t-*[11] but Rieken has demonstrated that the compound does not mean 'one year old'. A meaning 'of the same year' does not mean 'in the first year of one's life', though, and the etymology, not suggestive at the best of times, is probably to be adandoned.

For all practical purposes, then, evidence for the class we are dealing with is limited to Indo-Iranian and Greek. It is not excluded

[7] See *LEW* s.v.

[8] See Adams (1985) who reconstructs a holokinetic (and animate) **péu̯mōs*, *pumsés*, cf. Skt. *púmān*, *puṁsás* 'male, man' (p. 2). In principle, this looks very attractive and accommodates especially the Lat. and Skt. forms well. A putative neuter noun **póums* (p. 11), however, still looks morphologically odd and has little basis in the attested forms.

[9] See *MLM* I. 137, II. 31, Parlangèli (1960) 268, Haas (1962) 79, 221.

[10] See Eichner (1979) 77; Rieken (1999) 190 f.

[11] See Rieken (1999) 147 with further references.

that the class may have been limited to a Graeco-Aryan proto-language though it seems more likely, especially if Latin (*im*)*pūbēs* is to be taken seriously, that they can be projected back into PIE. On the other hand, there is no basis—and this time not even any systemic reasons—for regarding them as originally belonging to the hysterokinetic inflectional type. There is no evidence whatever for any accent or ablaut alternations in the suffix and the ending (other than the trivial -*ηϛ* in the animate nom.sg. vs. -*ϵ*(*σ*)- elsewhere in the paradigm, and what little evidence there is showing a zero grade of the root (e.g. *αἰνο-παθής* 'suffering badly' vs. *πένθοϛ* 'suffering, grief') is secondary and has nothing to do with a putative original inflection of this class or indeed neuter nouns at all (see below section 4.9). As there is a marked formal contrast between s-stem compounds in *-*es*- on the one hand and compounds from stems in resonants (type *πατήρ* : *ἀπάτωρ*) which are characterized by the retraction of the accent and the expected o-grade (characteristic for post-tonic syllables, as we have already seen), the whole class may have arisen quite late and have been built directly on the stem of these nouns. It is true that in Greek the majority of s-stem compounds have the accent on the suffix (type *δυσμενής*); this is a marked contrast with Skt. but it is not clear that this should represent something archaic, see section 4.9. At any rate, in other IE languages that form compounds with s-stems as a second member, we find the unsurprising transfer to the o-stems. This is also an option in Skt. where from RV onwards we find *án-āga*- alongside the more frequent *án-āgas*- 'without guilt, without sin' vs. the corresponding noun *ā́gas*- 'guilt, sin'.[12] This replacement is completely regular in Celtic. Already in Archaic Irish an s-stem noun used as the second element of a compound is transformed into an o-stem, cf. e.g. Ogam masc. gen. sg. *IVAGENI*.[13] This cannot be put down to the general influence of the thematic declension as the s-stem nouns remain intact as a category until the Middle Irish period and are not influenced by the o-stems. The same rule seems to be operational already in Gaulish[14] and is comparable

[12] It is true, of course, that in Skt. -*a*- can take the place not just of -*as* but of -*aC*- in general; see *Ai.Gr.* ii,1. 96 where Wackernagel argued that -*a*- in place of -*aC*- was 'durch die sonstige Häufigkeit von *a* als Ausgang von Bahuvrīhis begünstigt.'

[13] *CIIC* 259, corresponding to OIr. nom. *Éogan.*

[14] See Schmidt (1957) 217, Evans (1967) 206 f., Uhlich (1993) 129 f.

to Latin where we regularly find the type *caprigenus*, *-genī* alongside *genus*, *generis*. If a transfer to the o-stems may seem banal for these languages, the same may have been the case for late PIE and this change of stem class may have been at least an alternative possibility of forming compounds from s-stem nouns.

Also controversial is the question as to whether PIE had uncompounded s-stem adjectives (type ψευδής 'lying'). The Greek evidence will be looked at in detail in section 4.11 but it is clear that no word equations exist between any two languages. Furthermore, in Greek such formations are palpably absent from the oldest layer of the language, and where they do appear, with only one exception, they are attested distinctly later than their compositional counterparts. Already in the nineteenth century it was recognized, therefore, that these simple s-stem adjectives are mere back-formations from compounds in the individual languages.[15]

In recent times, however, it has again been argued that PIE did have simple s-stem adjectives. This has been done partly on systemic grounds and partly on the basis of Greek accentuation. The s-stem compounds are the only possessive compounds to bear the stress on the second member and in Greek are, for the most part, oxytone (see above and section 4.9), which fact could be put down solely to influence from putative simple adjectives. It is clear, though, that this means turning the evidence on the basis of which this conclusion is arrived at on its head, and it is also illegitimate as will be shown in sections 4.9 and 4.11. More importantly, original simple s-stems have been argued for on the basis of new or newly interpreted evidence. Hitt. *atešš-* probably 'axe' has been compared to OE *adosa* 'adze'.[16] These forms would have to be taken back to a PIE form $^{*}h_3ed^h$-*és*[17] with a full grade of the root which, under the hysterokinetic model, is unexpected. Even if we take the meaning of the Hittite word as certain the comparison is somewhat hampered by the fact that *adosa* is very

[15] See sections 1.1, 4.11, de Saussure (1879) 201, Zacher (1886) 15 f., and in particular Parmentier (1889) 263.

[16] First by Čop (1957) 140; see Rieken (1999) 192 f. for a discussion and further references.

[17] This assumes that $^{*}h_3 > 0$ which does seem to be the likeliest development.

weakly attested and may be a misreading for *adesa* (masc., n-stem). It is clear that the stem formation is very different. If it is inherited at all, the Gmc. form looks much more like a substantivized perfect participle < PGerm. **adus-on-* rather than a u-stem that secondarily became an s-stem. A PIE root **h₃ed^{h}-* 'cut' or the like is in any event unknown, and the etymology is tenuous to say the least.[18]

It is clear, then, that the normal way of deriving a simple adjective from a noun would have been via thematization with the *bahuvrīhi-ó*, type Skt. *vatsá-* 'calf, yearling' < **u̯et-s-ó-*. Therefore, the burden of proof lies on those who want to argue for the existence of simple s-stem adjectives for the parent language. The Indo-Europeanist may want to argue for them on the basis of reconstructed extended morphological patterns; the Greek philologist will judge their reconstruction unnecessary.

4.3 SCOPE OF THE EXAMINATION

Sigmatic adjectives clearly are, in principle, an inherited formation. Yet their productivity in Greek is such that not all the mechanisms according to which they could be formed are inherited. In the other languages that we have considered, excepting the uncertain cases, s-stem adjectives are clearly built on s-stem nouns, almost always neuter nouns in **-es- /-os-*.[19] This type is also abundant in Greek as becomes clear from the very example quoted at the beginning of this chapter, δυσμενής vs. μένος. In a large number of cases, indeed in the majority of the examples, such base nouns are not attested, e.g. there is no neuter noun **πάγος* alongside προτοπαγής 'newly put together'. Previously, it was supposed that the existence of the latter type of formation was due to the loss of s-stem nouns.[20] Although this is a plausible explanation in some cases, e.g. the compounds in -ώδης in

[18] The word may well be a loan word, cf. the completely isolated and very archaic-looking Arab. *waṭaša, yaṭišu* 'strike, hit'.

[19] For the very few Skt. adjectives in *-as-* that cannot be linked to s-stem nouns see *Ai.Gr.* II,1 225 f. These are clearly secondary formations (especially *-as-* for root final *-ā-*) or are obscure in meaning and/or etymology. They can in no way be compared to the highly productive Greek formations. The same holds true for the very rare formations of the type acc. sg. *viśvá-bharasam* 'all-bearing', cf. *Ai.Gr.* iii. 286.

[20] See, e.g. Solmsen (1909) 16.

view of Latin *odor*, it is very difficult to accept that neuter s-stem nouns were lost on such a large scale. Furthermore, there are semantic difficulties that render a nominal derivation in general problematic.

It seems that not all of these cases can be treated alike and further distinctions are necessary. Some compounds in *-ης* seem related to adjectives in *-υς* like *ποδώκης* 'swift at the foot' (Hom.+) alongside *ὠκύς* 'swift' (Hom.+) and the role of these compound formations in the 'Caland system' needs to be considered. Very many other sigmatic adjectives are clearly derived from verbs, cf. *τηλεφανής* 'visible from afar' (Hom.+) vs. *φαίνομαι* 'appear' (Hom.+). These deverbative formations constitute the largest individual group of s-stem adjectives. Parallels in other languages are lacking, and it is clear that they represent a considerable innovation within Greek. Yet other adjectives seem derived from nouns of other stem classes, cf. neut. *εὐρυπυλές* 'with broad gates' (Hom.) alongside *πύλη* 'gate' (Hom.+). All of these categories will be examined, with the aim being once more to try to account for the productivity of the type while attempting to understand its origins.

4.4 TYPES OF COMPOUNDS ATTESTED

It may be convenient to begin by giving an overview of the types of compounds attested, their shape and some basic rules of formation. We have just seen that both denominal and deverbal sigmatic compounds exist. Sometimes, it is not possible to decide for certain what the basis was (e.g. *-ώδης*) and, equally importantly, whether the compound was *understood* as nominal or verbal and at what time. Thus, it is clear that Homer's *διογενής*[ῑ] is in origin a paraphrase for (*ἀπὸ*) *Διὸς γένος ἔχων* 'having one's origin from Zeus' with metrical lengthening or, more likely, *δῖον γένος ἔχων* 'having divine origin' but that it was at some stage understood as (*ἀπὸ*) *Διὸς γενόμενος* 'sprung from Zeus'.

The first member can be a noun as in *μελιηδής* 'having the sweetness of honey', i.e. 'sweet as or through honey'. The noun here usually plays the role of a simple adnominal genitive. This type is actually quite rare in Homer but becomes frequent in Classical times. Formations with an adjective as the first member also occur; here, the adjective usually indicates size or degree, e.g. *μεγα-κήτης*, 'containing

big sea-monsters', *πολυ-βενθής* 'having much depth'. Pronouns also occur as the first member, cf. *αὐτόετες* 'of the same year' but are significantly rarer. Numerals as in *οἰέτης* 'one year old', prepositions/adverbs as in *περι-πευκής* 'sharp all around', *τηλε-φανής* 'visible from afar' and prefixes, especially *εὐ-* 'good', *δυσ-* 'bad' and *ἀ-* 'not' are all very frequent as first members, cf. *εὐ-ερκής* 'well-fenced', *δυσ-κηδής* 'having bad sorrows', *ἀ-ταρβής* 'fearless' (all examples are Homeric).[21]

As far as the types of compound are concerned, the great majority of nominal compounds are *bahuvrīhis*. Sometimes this classification is actually confirmed by the data: examples like *δολιχεγχής Il.* 21.155 alongside the practically synonymous *δολίχ' ἔγχεα χερσὶν ἔχοντες Il.* 4.533+ 'having long spears' show that such compounds were indeed understood as possessive which fits well with the comparative data. Already well attested in Homer, the type remains very productive right down into the Middle Ages. Even if one applies the most rigorous of criteria (no imitation of Homer, i.e. the formation must be new; the compound must unambiguously point to an s-stem noun and not possibly be deverbative), a large number of new examples can be quoted, e.g. *ὑπερμεγάθης* 'immensely great' (Hdt.+), *ἰσομεγέθης* 'equally big' (X.+), *εὐρυστήθης* 'broad-breasted' (Arist.), *ἀγλευκής* 'not sweet' (X.+), *μακροσκελής* 'long-legged' (A.+). As is obvious, such compounds are not limited to poetry. They occur quite naturally, it seems, in Attic and Ionic prose and the attestation for each word is usually much better than for the *λυσιμελής* type of verbal governing compounds (on which see section 4.7 below), and more than 100 of the *c.*400 neuter nouns in *-os* occur in compounds of this type.

Prepositional governing compounds also occur such as *ἀμφιτειχής* 'being around the walls, encompassing the walls' (A.). This type of compound is significantly rarer than the *bahuvrīhi* type, and no example occurs in Homer. It is not clear whether this is due to chance or whether a different mechanism of formation would have been at work here. Interestingly, in Mycenaean, a number of compounds (usually indicating professions) in *-e-u* are found that seem to stand for or be derived from sigmatic prepositional governing compounds, cf. *o-pi-te-u-ke-e-we opiteukhehēwes* '?overseers of

[21] See also Blanc (1987) 5 ff.

weaponry/armour'. These look as though they were derived from **opiteukhēs* and show a remarkable use of the suffix *-ϵυς*.[22]

In contrast with the *bahuvrīhis*, s-stem verbal governing compounds with a verbal first member are rare even in Homer. We find two basic types of such compounds in general; the first element of the compound may be a simple thematic or athematic stem (type *'Εχέπωλος*, lit. 'holding the foals') or may end in *-τι-/-σι-* (type *τερψίμβροτος* 'gladdening the mortals').[23] Their total number is small, particularly when compared to verbal governing compounds with a verbal second member (type *κουροτρόφος* 'nourishing children').

In Homer, there are 48 examples of the *τερψίμβροτος* type of which 15 occur in personal names.[24] Only two of them are built on s-stems, *λυσιμελής* 'loosening the limbs' (*ὕπνος*) and *ἀρτιεπής* 'composing words'. For the *'Εχέπωλος* type we may quote a maximum of 47 examples of which 24 are personal names. Again, compounds built on s-stems are rare: *ταλαπενθής* 'bearing grief', *Ταλαιμένης*, *Γανυμήδης* with an athematic verbal element[25] and *'Εχεκλέης*, **μισγαγκής* in fem. *μισγάγκεια* 'meeting of glens' (?)[26] or *ἐχεπευκής* 'having a sharp point' (*βέλος*, Hom.) with a thematic verbal stem. If we include the very popular and productive type *φιλοπτόλεμος* 'loving war' (in origin *bahuvrīhis*), we may add *φιλομμειδής* 'loving laughter' and *-ψευδής* 'loving lies'. The Homeric hymns and Hesiod add three further compounds to this,

[22] It is also interesting to note that in Myc. forms in *-e-u* are only in a minority of instances derived from o-stem nouns, and if they are, the noun is likely to be a loan word (cf. *ke-ra-me-u* 'potter', *ka-ke-u* 'bronze smith'), rendering invalid any attempt to connect this suffix to the thematic stems.

[23] The origin of this class is heavily disputed, and the views range from original *bahuvrīhis* via agent compounds to true verbal compounds with an inflected first member, i.e. 3rd sg. (see Risch (1974) 189 ff., Knecht (1946), Frei-Lüthy (1978), Meißner and Tribulato (2002) for discussion and further references). Whatever the case may be, it is clear that at some stage and definitely in early Greek these were understood as verbal.

[24] See Frei-Lüthy (1978) who argues that this type actually arose in personal names.

[25] *ταναήκης* or *τανυήκης* 'thin-edged' is clearly a possessive compound in origin. As the adjective **τανύς* = Skt. *tanú-* 'thin' was lost early in Greek (see de Lamberterie (1990) 112 ff.), some of the compounds belonging here were secondarily connected to *τανύω* 'spread out', e.g. *τανυπτέρυξ* 'spreading the wings', see Risch (1974) 190.

[26] See Risch (1974) 191.

φερεσανθής 'flower-bringing' (h. 30.14), φερεσσακής 'shield-bearing' and φιλοκυδής 'fame-loving' (both Hes.).

After the end of the epic period, very few new compounds of this type are formed in either poetry or prose. Theognis has φιλοκερδής 'loving gain' (199; also in Pi., Ar., X.), Bacchylides employs φερεκυδής 'bringing fame' (12.182; also once in an inscription from Chalkis, *IG* XII 9, 1179), τερψιεπής 'gladdening through its words' (12.230) and θελξιεπής 'enticing through its words' (14.48). Aeschylus uses φιλογαθής 'loving joy' (*Th.* 917, lyr.) and φθερσιγενής 'destroying the offspring' (*Th.* 1054). Pindar (*Ol.* 9.80) and Aristophanes (*Nub.* 447) have εὑρησιεπής 'finding words', the former also ἀμευσιεπής 'surpassing the words' (*fr. Isthm.* 24), the latter φιλοκηδής 'loving care(fulness)' (*fr.* 732.1). Finally, Xenophon uses φιλομαθής 'fond of learning' (*Cyr.* 12.1+) and λυσιτελής 'paying for expenses' (*Mem.* 3.4.11+), also found in Plato and some later authors. To my knowledge, no other compounds of this type are found before the end of the fifth century BC.

Surprisingly, from late Classical and Hellenistic times onwards, however, they seem to become somewhat more popular; the new compounds for this period are φιλ-αληθής 'truth-loving' (Arist.+, very frequent), -εχθής 'loving hate' (Theoc.), φιλο-πευθής 'loving inquiry', -πενθής 'loving grief', -συνήθης 'loving one's associates' (all Plu.+), -παθής 'loving one's passions', -εθνής 'patriotic' (both Ph.), -θρηνής 'fond of wailing' (Mosch.), μισο-φαής 'hating the light' (Procl.), -ψευδής 'hating lies' (Luc.), -παθής 'hating passions' (Ps.-Dsc.), μισαλήθης 'hating the truth' (Hdn.), φερ-αυγής 'bringing beams' (Nonn.), -ανθής 'bringing flowers' (Mel. in *AP*), φερε-γλαγής 'bringing milk' (Orph.), -κλεής 'bringing fame' (Nonn.), αὐξι-θαλής 'promoting growth' (Orph.), -φαής 'increasing the light' (Man.+), ἐγερσιφαής 'stirring ('awakening') the light' (Phil. Epigr. in *AP*), λειψιφαής 'leaving the light' (Max.), λυσιφλεβής 'loosening the veins' (Phil Epigr. in *AP*), τηξιμελής 'wasting the limbs', θελξιμελής 'charming with music' (*IG* 3.400), ἠσιεπής 'throwing words' (*EM*), ἐχεκήλης 'ruptured' (Hsch.), ταλα-/τλη-παθής 'enduring grief' (Suid.; Zos.).

On the basis of this data, a number of observations can be made. The type φιλομμειδής and its opposite in μισο- is by far the most frequent one. This is in complete agreement with the fact that this type of compound is highly productive in all literary genres. The other compounds show a remarkable set of lexical restrictions: in the great

majority of cases, one of the members of the compound already occurs in a τερψίμβροτος type compound in Homer. In particular, the number of verbs employed is very small. Truly new compounds like Aeschylus' φθερσιγενής are rare, mostly *hapax* and usually only found in poetry. The apparent productivity of these compounds in post-Classical Greek is, on second inspection, a mirage. In Hellenistic times even more than in Classical times, the compounds are modelled on Homeric examples. This can be attributed to the genre in which they occur; many of these compounds are found in late epic poetry and we may conclude that the authors simply varied Homeric compounds with which they were already familiar. A good example for their artificial character is λυσιφλεβής 'loosening the veins'. The s-stem here is surprising since the base noun is φλέψ, and we would expect *λυσίφλεψ or at the most *λυσίφλεβος. The actually attested λυσιφλεβής is best explained as having been coined after Homeric λυσιμελής. θελξι- and τηξι-μελής are variations in the other direction (though the former may have -μελής meaning 'music' rather than 'limb'); similarly artificial is φιλοθρηνής instead of the regular -ος, θρῆνος 'wail' being an o-stem, echoing φιλομμειδής. It would appear, then, that these verbal governing compounds had long ceased to be truly productive; the later examples are mere literary imitations.

By way of a general conclusion, it is clear that the δυσμενής type of compound was the normal one. It was obviously not as stylistically marked as either the ἀμφιτειχής or the λυσιμελής types are. It is the only one to remain productive in normal speech – if it is legitimate to extrapolate from Classical literature. As we have already seen (section 2.4) this is of considerable importance for the process of reverse derivation of s-stem nouns (type ἄος).

4.5 COMPOUNDS FROM S-STEM NOUNS IN GREEK AND NOMINAL S-STEM COMPOUNDS: BASES AND HISTORICAL DEVELOPMENT

The Early Period

Independent of the type of compound concerned, as a basic and general rule of word formation for the entire Archaic and Classical

periods it is true that whenever a compound contains an s-stem neuter noun in -*ος* as its second member, the compound itself is sigmatic and ends in -*ης*, for both the masc. and the fem., and -*ες* for the neut.[27] Conversely, if the base noun is not such an s-stem noun, the compound will not be an s-stem. Exceptions of various sorts exist, but these are limited and can be explained.

A first group of exceptions concerns personal names. Although a good number of anthroponyms in -*ης* are attested from Myc. onwards, cf. *e-u-me-de*, *Διομήδης* they had the disadvantage of not overtly indicating sexes. Various strategies are employed to rectify this. At a very early stage, masc. names can be transferred to the stems in -*ευς*, and this is often concomitant with a hypocoristic form of the name; thus in Homer we get *Ἰδομενεύς* (cf. Myc. fem. name *i-do-me-ne-ja*), *Μελανθεύς* < *μελανθής* (brother of *Μελανθώ*), *Εὐρυσθεύς* < *εὐρυσθενής*/*Εὐρυσθένης*, perhaps echoing what we saw in the Myc.

[27] There are two prominent exceptions to this. *ἄκυρος* 'invalid' stands beside the s-stem *κῦρος* 'authority, validity'. Neither word, nor any other belonging to this root, is found in early epic poetry. It is common to regard the noun, found from Aeschylus onwards, as a back-formation (see *GEW* s.v. *κύριος*). But it would be strange to form a neuter noun from *κυρόω* etc., a thematic noun would much rather be expected. This is attested in Skt. *śū́ra-*, Av. *sūra-* 'hero' and will also have formed the basis for the common *κύριος* 'valid, strong'. The thematic noun can have disappeared from Greek early on. This must be likelier than a deliberate alteration to a neuter s-stem noun so as to avoid complete and unwelcome identity with the name of the first of the Achaemenid kings of the Persians. In any event there are sufficient grounds to postulate a thematic formation for early Greek from which *ἄκυρος* can regularly have been derived. However, another fact deserves to be mentioned in this context. s-stem compounds are very rare in inscriptions where, on the other hand, *κύριος* and *ἄκυρος* are extremely frequently found. It may be possible that in Classical Greek not beset with literary ambition a thematic compound *ἄκυρος* was acceptable and perhaps created on the basis of an analogical proportion of the type *τίμιος* : *ἄτιμος* = *κύριος* : X, X = *ἄκυρος*.

The compounds in -*ε*(*ι*)*ρος* 'woollen', e.g. Ion. *εὔειρος*, Att. *εὔερος* 'with good wool' (S.+) also inflect as thematic stems although the base noun is a neuter s-stem. However, it has been argued by Blanc (1987) 91 that the inflection of *εἶρος* 'fleece' as an s-stem is an innovation (analogical after *πέκος*?) and that the word was once an ā-stem **ϝερϝᾱ*. We may add that this would also explain the first member *εἰρο-*(*κόμος* 'working in wool' *Il.* + etc.) rather elegantly as a compositional archaism.

It has also long been suggested and discussed extensively that the word for 'hare', *λαγώς*, Hom. *λαγωός* is a compound of *λαγ-*, cf. *λαγαρός* 'slack' + *οὖς*. Even if the word for 'ear' really was an s-stem, it looked like a root noun in Greek and did not have to obey the same word formation rules. But in my view the etymology is wrong anyway as hares do not have slack ears.

type *o-pi-te-u-ke-e-u*. With the decreasing productivity of *-εύς*, this strategy is lost after Homer; instead, we frequently find a transfer to the thematic stems.[28] Thus, *Πολυτερπος* (Corinth, sixth century BC) is conceivable only as a name (vs. appellative *πολυτερπής*), perhaps showing a 'cautious' type of hypocoristic.[29] *Παλαμμηδος* (Kyme) contrasts with usual *-μήδης*, Cypr. *sa-ta-si-ke-re-to-se* vs. frequent *-κρέτης*/*-κράτης* etc.[30] Correspondingly, the feminine names often become straight ā-stems. Homeric *Ἀγαμήδη* and *Διομήδη* illustrate this procedure frequent in Attic and Ionic. An alternative, more widespread and earlier strategy here is the extension of the s-stem with *-i̯α. This is already found in Myc. (*a-ti-ke-ne-ja* *Ἀντιγένεια*, *i-pe-me-de-ja* *-μέδεια*) and Homer (type *Ἰφιμέδεια*, *Εὐρύκλεια*) and remains a productive way of forming fem. names from s-stems.

From these fem. names, the formations in *-i̯α spread in a limited way. The frequent epithet of the dawn *ἠριγένεια* (used by Hesiod as a true personal name) < *ἠριγενής* is an instructive example. The standing epithet thus provided the bridge between the personal names and the appellative vocabulary. From here, the special fem. formation spread further to a few more adjectives in Homer: *ἀμφιδάσεια* 'fringed all around', said of the *αἰγίς* in *Il.* 15.309; *ἱπποδάσεια* 'bushy with horsehair' of which 7 examples are found in *Il.*, 2 in the *Od.* In the *Il.*, it is an epithet of *κόρυς* 'helmet (of bronze)', in the *Od.* of *κυνέη* 'helmet (of dog-skin)'. With the exception of *Il.* 17.295 it is always found at the end of a line. Masculine forms for these adjectives are not attested. Finally, there is *χαλκοβάρεια* 'loaded with bronze', epithet of *στεφάνη* 'helmet, brim of the helmet' in *Il.* 11.96 and of the *μελίη* 'spear (of ash-wood)' (3 times, *Il.* 22.328+), always found at the end of a line. The normal *χαλκοβαρής* is also found (3 times), but is not used as a fem., and does not occur at the end of a line. It is clear that these are metrical licences as appears not just from their position in the line but also from the fact that such formations do not occur outside (epic) poetry. Adjectives in *-ύς* like

[28] Cf. for the entire problem also Blanc (1987) 50 ff.
[29] See Wachter (2001) 45.
[30] See Neumann (1992) 53 f. for further examples.

βαρύς, δασύς form feminines in -εῖα but it is wrong to suggest that ἀμφι-, ἵππο- δάσεια and χαλκοβάρεια point to compounded adjectives *ἀμφιδασύς, ἱπποδασύς, χαλκοβαρύς. Leaving aside serious objections against the wellformedness of such creations, it is also unjustified in view of χαλκοβαρής and in view of the proparoxytone accent, shared with ἠριγένεια and the personal names. This is confirmed by the further evidence available from Hesiod, ἀρτιέπειαι and ἡδυέπειαι (equally restricted to line-end position).[31] Even an influence from the u-stem adjectives is unlikely as *-εσi̯V and *-εu̯i̯V do not necessarily behave alike: the former leads to -ει- or -ε- (τελείω/τελέω), the latter seems always to result in -ει-.[32] 'Irregular' fem. formations in *-(ε)i̯α are occasionally found in other adjectives as well, e.g. κυδιάνειρα 'having famous men', εὐρυόδεια 'with wide streets', but nowhere as frequently as in the s-stems, and they constitute some of the best evidence available for an influence of the personal names on the appellative word formation in Greek.

Another small group of exceptions is constituted by Homeric χαλκοβατές 'with bronze foundations' and εὐρυπυλές 'broad-gated'. It seems as though the expected thematic nominal stem (note that Εὐρύπυλος is attested as a personal name as early as in Homer) was replaced by an s-stem, an otherwise unparalleled pattern in Early Greek. If one only looks at the latter, one might suspect that Homer tried to differentiate between the name and the appellative lexical item and resorted to this unconventional strategy for this reason. But this will not help with χαλκοβατές. It has been noted, of course, that we find this only in the neuter. Yet this in itself is no explanation. As a matter of fact these two words share another feature: both

[31] Note, incidentally, that in non-final position the regular ἡδυεπεῖς is found as fem. in the Homeric hymn 32.2.

[32] See Lejeune (1972*a*) 132 f., 172 f. But it is quite possible that -εῖα is in fact a very recent fem. formation. It does not correspond to the Skt. formations where we find the zero grade of the suffix. In this context, it is worth mentioning the notorious ὠκέα ^{3}*Iρις* problem where the old hypothesis that ὠκέα stands for *ὤκκια < *ὠκϝi̯α is the most promising approach to an explanation (see Jakobsohn (1910) 182 f.; see also Peters (1980) 128 n. 75 and Schindler (1986*a*) 389 who points out that there is some evidence for the lack of a special feminine form in this word); it has also been argued that ὠκεῖα is a replacement for -νῖα (see e.g. Ruipérez (1990) 252). If any one of these hypotheses is right then an influence from the u-stem adjectives becomes even more unlikely.

exclusively qualify the archaic word for house, δῶ: it would be the most remarkable of accidents if two of the most flagrant and identically structured breaches of Greek word formation rules occurred independently qualifying an obsolete root noun. They could be nothing more than rhyming formations on the regularly formed, deverbal ὑψερεφὲς δῶ 'high-roofed house', equally formulaic, and 'high-roofed' and 'broad-gated' are sufficiently similar from a semantic point of view to allow this. But two reasons suggest that the situation is more complex. First, ὑψερεφὲς δῶ occurs only in *Od.* while both χαλκοβατές and εὐρυπυλές are already found in *Il.*, and χαλκοβατές only so. Secondly, εὐρυπυλές (Ἄϊδος δῶ) does not occur in the same metrical slot as the line closing ὑψερεφὲς δῶ which, like χαλκοβατὲς δῶ, occupies the convenient slot following the bucolic diaeresis.[33] It seems that we have to presuppose a phrase ἐς δῶ and ἐς Ἄϊδος δῶ for which Myc. *do-de*, equally used for the divine house, is a good precursor; these phrases must have been so common as to allow the rhyming formations under discussion here. If, though this is far more uncertain, the Homeric tradition could regard δῶ as plural as 'Hesiod' did in his famous χρύσεα δῶ (*Th.* 933; this part of the work possibly being post-Hesiod), then at the basis of our two forms there might even be a regular phrase *χαλκόβατ' ἐς δῶ. In fact, it is more likely to be the other way round. Given that δῶμα and δώματα were used without any difference in meaning and given the highly irregular formation of χαλκοβατές and εὐρυπυλές, Hesiod analysed the phrases as *χαλκόβατ' ἐς δῶ and *εὐρύπυλ' ἐς Ἄϊδος δῶ and thus interpreted δῶ as plural. The prepositions preceding these phrases (ἀνά, ποτί, κατά) could have been understood as adverbs or postpositions of preceding phrases.[34]

Homeric δυσπονέος 'toilsome', Hesiod's ἀπτερέως 'quickly, swiftly' and the gen. pl. ἀμηχανέων 'without means' found in *h. Herm.* 447 are most likely forms created *metri gratia* for the unsuitable *δυσπόνοιο, ἀπτερῶς and ἀμηχανῶν[35] though for δυσπονέος another

[33] It is true, however, that the formulaic ὑψερεφὲς μέγα δῶμα shows the two adjectives in the same metrical position. But this looks like a more recent creation rather than being original.

[34] See further Meißner (forthcoming).

[35] See Blanc (1987) 26.

explanation is also conceivable, cf. section 4.7. These are trivial exceptions that need no further discussion here.

Some of the Homeric evidence can be dismissed altogether. μελαγχροιής 'having a black skin' is confidently listed as an s-stem in the dictionaries—which leads straight into the difficult issue of compounds of the word(s) for skin.[36] A consonantal inflection treating χρώς as a root noun (from a Greek point of view) is found in nom. pl. μελανόχροες (*Il.* 13.589) and ταμεσίχροα, -ας. A thematization occurs in μελανόχροος (*Od.* 19.246) while an s-stem inflection is found only in the *hapax* μελαγχροιής (*Od.* 16.175) and in ἐϋχροές (also *hapax* at *Od.* 14.24). For the latter a *varia lectio* ἐΰχροον exists that may be preferred; but even if not, a special position of the neuter (see above) may have facilitated this as poetic licence. It has to be separated from μελαγχροιής which I interpret as an ā-stem, regularly derived from χροιή.[37] The thematic forms μελανόχροος and perhaps ἐΰχροον too may be based on *χρόη (Attic χρόα).[38] At any rate it is clear that by the very shape and morphological nature of χρώς and the co-existence of the more regularly inflecting χροιή it is *a priori* likely that we find varying stem formations in the compounds.

At this point, we need to look at the compounds from s-stem nouns other than those in -ος. For the nouns in -ας, Herodian II 281 states categorically that ἀπὸ γὰρ τῶν εἰς -ας οὐ γίνεται σύνθετον εἰς -ής, ἀλλὰ ἀπὸ τῶν εἰς -ος 'for from those in -ας does not come a compound in -ής, but from those in -ος'. The Homeric evidence

[36] See also section 3.2, n. 24. As we have seen Szemerényi (1967*b*) 22 f. reconstructed *χροώς, gen. χροόος; his need for such a form is based on the categorical claim that any compound of this word must end in -χροης which he believes to be attested in the hapax ἐϋχροές. As a result of this, he is forced to make further and unlikely assumptions: for the purpose of deriving -χροιής from χρώς he assumes that -οι- somehow stands for -ō-. Without explicitly saying so, he thus separates this from the well attested and real Ionic χροιή, Attic χροιά 'skin' which is unacceptable. μελανόχροος has to be from χρώς by diektasis but -χρώς in itself cannot be original, hence this must itself be contracted from -χροής which is equally unacceptable. μελανόχροες and ταμεσίχροα must stand for -οεες, -οεα by hyphaeresis. But there are no parallels for such a form of hyphaeresis which is only ever found in sequences -εε- + vowel.

[37] It has been shown by Rüedi (1969) 44 ff. beyond any doubt that an ā-stem noun can yield an ā-stem compound if the compound is restricted to masculine usage.

[38] See Blanc (1987) 99.

is necessarily quite limited; from *γῆρας* 'age' we find *ἀγήραον* (only *Od.*) and a contracted *ἀγήρως* (*Il.*+); *ὑψίκερων* (this being the traditional accentuation; better to be read *ὑψικέρων*) 'high-horned' from *κέρας* is identically formed. The usage of *-*o*- as a compositional suffix in *bahuvrīhis* is old and established and its employment here hardly surprising.[39] In this respect, then, Herodian seems correct. However, there is also a *hapax* *ἀνεμοσκεπής*, more properly speaking the gen. pl. *ἀνεμοσκεπέων* (*Il.* 16.224) 'providing shelter from the wind', qualifying *χλαῖναι*. It has been argued that this is a deverbal formation which would be regular, but the base verb *σκέπω* is not attested until much later; Homer only has *σκεπάω* in the *hapax* *σκεπόωσι* (*Od.* 13.99) which rather looks as if it were derived from *σκέπας*. There can be little doubt that *ἀνεμοσκεπής* is a compound of the phrase *σκέπας ἀνέμοιο* (4× *Od.*) and is thus indeed denominal.[40] Finally, there is Classical *εὐσεβής* 'pious, religious' which may be derived from *σέβας* 'awe, reverence', but a deverbal derivation from *σέβομαι* 'worship' is not excluded. Taking all of this together, though, there is some cumulative evidence for Herodian to be wrong. His claim is perhaps overly categorical, and given that so few neuter nouns in *-as* are found in Greek, it is hardly surprising that such adjectives are rare.

Even scarcer is the early evidence for compounds from nouns in *-ως*. Apart from the compounds of the word for 'skin' there is only *ἀναιδής* 'shameless' which we have already had occasion to mention (section 3.4). Here, a deverbal derivation from *αἴδομαι* is perfectly regular and, as the chronology presents no difficulties, conceivably

[39] The unique *ἀγέραστος* 'without gift of honour' (*Il.* 1. 119) shows an alternative strategy, popular in particular in negative compounds, the type *ἀτίμητος* on which see Risch (1974) 21.

[40] After Homer, compounds in *-σκεπής* do not occur until Aristotle who employs *ἐπισκεπής* 'covered over' (*HA* 616b14); Theophrastus uses the same adjective (*Vent.* 30) and also *εὐσκεπής* (*Vent.* 24), *περισκεπής* 'covered all around' is found from Callimachus onwards (*Jov.* 11). All these are indeed deverbal compounds: the verb *σκέπω* is commonly found at this time, as are the prefixed verbs *περισκέπω* and *ἐπισκέπω* which are indeed employed by the same authors who use the compounds in *-ής*. If it is clear from a formal point of view that they are deverbative, it is even more so from a semantic one, for these are all distinctly passive while the Homeric example is active and thus very different in nature. On the deverbative compounds see further section 4.7.

correct. But *ἀναιδής* has semantics more atune with a denominal derivation. Yet we should not jump to the rash conclusion that *αἰδώς* once had a stem *αἰδεσ-* from which *ἀναιδής* is derived, all the more so since there is no reason to think that *αἰδώς* is anything other than an inner-Greek formation (see again section 3.4) and *αἰδοῖος* shows the expected stem *αἰδοσ-*.[41] A proper evaluation should begin with the Homeric usage of the word. Found 12 times in Homer, it seems best established in the line-closing formula *λᾶας ἀναιδής* 'the bold rock'. The noun is of a unique morphological shape: it is masc. in Homer, in later Greek (Nic.+) it is also feminine. Because of this oscillation in gender but more importantly because of its shape it has long been suspected that it was neuter in origin[42] as are the other nouns in *-ας*. This seems very likely, and if we follow this reasoning we might be able to explain *ἀναιδής*: the Homeric formula was created as *λᾶας ἀναιδές*. The fact that it is line-closing can only have helped the transition to the masc. In any case, the adjective is indeed based on *αἰδώς* but, just as in the case of *χρώς*, it was obviously difficult to create an acceptable neuter form; thematization would have been one option, but the addition of *-ες*, so very frequent particularly in compound adjectives and compulsory in s-stem neuter adjectives, was an even better way—and we have already seen that *-ες* was so

[41] If Myc. *me-no-e-jo* is correctly interpreted as 'crescent-shaped' or, probably better, as 'decorated with crescents' (see section 3.4, n. 65) then we would have good early evidence for a stem in **-os-*. Of course, it can happen that an ablaut grade no longer attested in the paradigm is preserved in composition. The most prominent case must be dat. pl. *ἐπηγκενίδεσσι*, *hapax* at *Od.* 5.253, which designates a part of a ship and is glossed as *ἐπηγκενίς· ἡ μακρὰ σανίς* in Suda. Already Doederlein connected this to *ἀγκών* which would have to mean something like 'Schiffsrippe', i.e. 'beam', see Bechtel (1914) 129 and Peters (1980) 310 ff. But the meaning of the word is unclear, and *ἀγκών* is never used as a part of a ship. The sometimes quoted gloss *ἐγκονίδες· αἱ ὑπηρέτιδες* 'female rowers' is no support here as the gloss is corrupt. Even if the reading is correct (it may have to be read *ἀγκονίδες*) it probably is derived from *ἐγ-κονέω* 'be active, be in the dust'. It is thus far from certain that the etymology is correct, and the gloss *ἐπηγανίδες· ἐπινύγματα* (Hsch.; perhaps to be read *ἐπηνύγματα*) makes the connection with *ἀγκών* more doubtful still. But even if it is correct, there is some independent evidence in Greek for the e-grade in the inflection of stems in resonants, cf. *λειμών* 'meadow' vs. *λιμήν* 'harbour' which is not the case for animate s-stems (see also the discussion of *αἰεί* in section 3.4).

[42] See *GEW* s.v. with references.

strong as to be able to serve in χαλκοβατές and εὐρυπυλές. When λᾶας became masc. like λίθος, πέτρος, the adjective simply followed suit and the animate ἀναιδής was created that could then be employed in the other, later and non-formulaic instances in Homer.[43] This inner-Greek explanation seems to me to be preferable over the alternative that either alongside αἰδώς there was a neuter noun *αἶδος of which there is no trace other than in -αιδής (and the secondary verb αἰδέομαι) and that is constructed precisely because of the compound, or, worse still, that there was a paradigmatic form αἰδεσ- from αἰδώς, reflecting a very ancient paradigmatic type in a word that cannot be traced back beyond Greek, however. Much more plausible is that χαλκοβατές, εὐρυπυλές, εὐχροές and the postulated ἀναιδές taken together seem to make a very strong case for the special position of the neuter -ες that served a well-defined purpose and could be more freely used than the animate -ης which, as far as denominal formations are concerned, is indeed limited to 'standard' s-stem nouns in origin.[44]

Later History and Dialectal Developments

In later Greek, the suffix slowly spreads beyond its original domain, and some expected thematic formations turn out as sigmatic. We owe to Blanc[45] the important observation that in origin this is found above all in comparative and superlative formations like ἀπονέστερος 'without toil' (Pi.), ἀμορφέστατος 'most misshapen' (Hdt.) or φιλοξενέστατος 'most hospitable' (E.).[46] It is evident that -εσ- is used here for euphonic reasons, partly providing an alternative

[43] Secondarily, then, a stem αἰδεσ- did arise in Greek; the verb αἰδέομαι which need not be old at all in view of the primary αἴδομαι, eventually replaced by the denominal verb.

[44] The compounds in -αυγής and -ηχής are verbal in meaning and deverbative in nature, see Blanc (1987) 30 f. and section 4.7 below.

[45] Blanc (1987) 24 f.

[46] It should be added that, here, -εσ- is not monogenetic: regular χαριέστερος, χαριέστατος (both Hom.+) from χαρίεις may also have played a role, though these forms, common as they may be in Homer and in Classical prose, do not occur in tragic poetry of the 6th or 5th centuries. See also the lists in Blanc (1987) 26 f.

strategy (alongside the lengthening of the thematic vowel, type σοφώτερος) to avoid an extended sequence of short syllables, and in forms like σωφρονέστερος (A.+) it is at least as justified as -ω- would be; and once more it is -εσ- and not -ης that lies at the beginning of the extensions. A full-scale indiscriminate use, the development of -ης to a compositional suffix that could be used for all sorts of nominal stems is not found until Hellenistic times.[47] Formations like ἀγραυλής 'out of doors' (Nic.), ἀχαλκής 'without bronze' (Tryph.) from the ā- and o-stem nouns αὐλή 'court', χαλκός 'copper, bronze' respectively are impossible before these times and their existence is doubtless connected to the abundance of deverbative formations in -ης.

The converse process, the transformation of expected s-stems to other formations has already been looked at in the context of personal names. To the considerations quoted above concerning the archaic period we may add some developments in Classical Greek. It is well known that the names in -κράτης develop forms of the first declension like acc. Σωκράτην in Classical times (note that names in -κάρτης/-κράτης are entirely absent from Homer) but the process is not datable with any certainty. What is clear is that they were influenced by the agent noun formations in -της. But in fact this sort of development is not limited to names in -κράτης. It seems that, after the merger of -ης <*-*ās* and -ης <*-*ēs* in Attic there was obvious contact between the first and third declensions. The acc. was remodelled first and -ην is found from tragedy onwards. In the literature, this is obscured by the fact that editors almost constantly prefer the 'correct' forms in -εα or -η etc. even if, as in S. *Ant.* 198 all codices and in *OC* 375 the great majority of codices have Πολυνείκην. On the other hand, there seems little hesitation to admit the new way of inflecting for Classical prose. Δημοσθένην is attested 15 times in Th. whereas the 'regular' acc. only occurs once. This picture is confirmed by the epigraphic evidence available. In Attic inscriptions, the acc. in -ην appears from the fifth century onwards and becomes very frequent in the fourth century, replacing the s-stem form very rapidly then. The gen. in -ου appears soon after 350 BC. It is on the basis of this form that much confusion seems to

[47] See also the dists in Blanc (1987) 26 f.

have arisen. Given the tendency of lexica of Greek personal names to list a name in the nominative when in fact only an oblique case form is attested, a remarkable number of ghost forms is often cited. By way of example, a fourth-century name *Δημόσθενος* is frequently cited. It occurs on *IG* XII 9, 246 as the gen. *Δημοσθενου*. Yet it is wrong to extrapolate from this name that the nom. would have ended in *-ος*. In fact, all it shows is the beginning merger of paradigms, namely of the masc. ā -stems and the s-stems, and this is proven by the fact that on this inscription, his son, occurring in the nom., is called *Φανοσθενης* with the expected and proper termination. Further to the beginning merger, *-η* and *-ει* start falling together in many levels of Attic in the fourth century BC and the dat. consequently starts to oscillate between the two. From the second century onwards s-stem and ā-stem names are practically indistinguishable, though they are partly restored in Roman times.[48]

Early remodellings are attested in some other dialects, however. The most interesting evidence comes from Aeolic. In the literature, leaving aside the fragmentary forms, the onomastic evidence is limited to one dative *Διννομενηι* and one genitive *Διννομενη* (Alc. 376.1 and 383.1); conversely, evidence from the inscriptions is practically restricted to personal names. Here, the acc. has been completely transformed and always ends in *-ην*. Dat. forms in *-ηι* and gen. in *-η* occur, too, but are considerably rarer than the 'regular' forms in *-ει*, *-εος*. In the appellative vocabulary, a good number of acc. sg. forms in *-ην* like *ἀβάκην* are attested, but the 'correct' forms in *-εα* remain in use. But a closer evaluation of the evidence shows that the distribution is not arbitrary. First, as far as the evidence from inscriptions is concerned, there is a clear geographical split: Mainland Aeolic has *-εα* right down to the Roman period while Island Aeolic shows the more recent form in *-ην*.[49] In the (Island Aeolic, i.e. Lesbian) literature, both endings are found. But it would be rash to conclude that Lesbian poetry has just preserved a genuine Aeolic archaism: for the acc. in *-εα* is restricted to the very *lexemes* already occurring in Homer and may thus just be a borrowing

[48] For the Attic data see Threatte (1996) 138 ff.; for the later data see Mayser (1970) 2, 37 ff., Crönert (1903) 160 f., Schmid (1897) iv. 182 f., Dieterich (1898) 158 f., 170 f., Gignac (1976) 135.

[49] See Hodot (1990) 120 f.

phenomenon, with a superficial phonological aeolicization.[50] It would appear then that the pattern -ης : -ην, analogical after -ας, -αν in personal names, is a genuine and probably Common Aeolic innovation while in the appellative vocabulary a clear-cut geographical split can be observed.[51]

Evidence from Arcado-Cypriot is much scarcer. From Arcadian, no relevant appellative examples are known. By way of contrast, in Cypriot no onomastic evidence is present, and there is only one appellative example (see immediately below). In Arcadian, the acc. in -ην in names is prevalent, -εα being attested only once.[52] This, combined with the Aeolic evidence, led Dubois to argue that 'le couple -εα/-ην s' expliquât par d'anciens faits de sandhi: -εα serait l'avatar de *-*esm̥C* et -ην celui de *-*esmV*.' Such a claim is not without further implications. If Dubois were right, we would have to assume that Attic-Ionic has generalized the former whereas the other dialects the latter. This may be possible but if we accept it, we still have to explain the Attic declension of personal names in -ης, -ην in a different way (as done above). Surely a good case can be made for regarding the Arcado-Cypriot forms as secondary. In Arcadian, a declensional pattern -ης, -ην already existed in the paradigm ιερης, ιερην, and Cypriot has comparable forms in *i-je-re-se* and *pa-si-le-se* and this explanation will hold true for the Arcadian names as well as for Cypriot *a-te-le-ne ICS* 217.10.

Outside the personal names and back in 'mainstream' Greek, the process of changing stem class is not attested before Hellenistic times:[53] for a transfer to the thematic declension cf. εὐγλαγής (Nic.) but εὔγλαγος (Lyc.); the same author also has ἄξιφος 'swordless', a form ὀψίτυχος 'finally successful' is found in Hdn.[54] To a limited extent, s-stems here, too, are transferred to the first declension. The earliest certain example in the literature seems to be Nicander's ἀγλευκὴν θάλασσαν (*Al.* 171) and while the acc. in -ην is

[50] λαθικάδεα Alc. 22.3, μελιάδεα 1.25, εὐάνθεα Sa. 81b3; ἀνάλγεα Sa. 22.7, ἀείκεα Alc. 5.10 are more likely to be neut. pl.

[51] See also Lazzeroni (1988) and Peters (1987*b*) 283.

[52] Al. 4.12, following the classification given by Dubois (1988) ii. 1.

[53] Homeric εὐτείχεον is a late 'correction' for εὐτείχεα (also attested) in order to avoid a hiatus, see Bechtel (1914) 146.

[54] See also Blanc (1987) 33.

practically unknown in the Ptolemaic papyri, a number of examples are found in the post-Ptolemaic period, such as *συνγενῆν PMich.* 498.15–16 (second century AD). For this reason and because the gen. in *-ου* is practically unknown here (only Ptolemaic *συγγενοῦ* occurs three times in the mummy documents *SB* 6028.4, 6029.5, 6030.2 that are riddled with errors)[55] it seems as though they were not influenced by the personal names but that they were simply recharacterized by the addition of the common acc. marker *-ν* as found in many other stem classes.

From the first century AD onwards s-stem adjectives begin to disappear. Most of them are simply transferred to the 1st/2nd declension. A few remain, but owing to advancing itacism they fall together in part with i-stems. Later still, they are remodelled completely: masc. nom. sg. *-ης* or *-ις*, fem. *-ισσα*, neut. *-ικο*, and strictly speaking the modern language has simply lost the adjectives in *-ης*—and incidentally all adjectives of two endings. Apart from the phonological developments the evolving need to indicate gender may have been one of the reasons why the adjectives in *-ης* were finally abandoned after flourishing extensively for a very long time.

4.6 ADJECTIVES IN *-ης* DIRECTLY DERIVED FROM ADJECTIVES IN *-υς*?

It is sometimes said that compound s-stem adjectives are derived from simple u-stem adjectives. This is normally illustrated by pointing to pairs like *οἰνοβαρής* 'wine-laden' vs. *βαρύς* and *ποδώκης* vs. *ὠκύς*. After the establishment of 'Caland's Law' it became fashionable to claim that the adjectival suffixes *-υ-* and *-ρο-* are 'replaced' by *-ης* in composition and merely change their suffix for reasons that go back a long way in time. However, Risch rightly argued that *οἰνοβαρής* had to be analysed as 'eig[entlich] 'die Schwere des Weines habend', in other words, these are original *bahuvrīhis*, with nouns (*βάρος*) as the second member that came to be understood as *tatpuruṣas*.[56] There are two different issues at stake here. First, whether the historical chain of derivation can indeed have been a simple adjective in *-υς* producing

[55] Cf. Mayser's harsh comment (1970) 57 'über alle Maßen fehlerhaft geschrieben'.
[56] Thus Risch (1974) 213.

a compound one in *-ης*, and secondly whether these compounds were ever *felt* to be derived from the adjectives.

It is difficult to give an affirmative answer to either of these questions. Early Greek has very few adjectival determinative compounds, and what little is there is almost entirely, in origin at least, based on juxtapositions, such as *ἐγχεσίμωρος* 'fighting with the spear, mad for spears' or *πόδαργος*, Myc. *po-da-ko* 'swift-footed' or 'white-footed'. A large-scale, independent class of adjectival determinative compounds would thus be very surprising. Furthermore, we could reasonably expect at least occasional alternations between compounds like *οἰνοβαρής* and simple phrases of the type **οἴνῳ βαρύς*, alternations of the same type as in *δολιχεγχής* vs. *δολίχ' ἔγχεα χερσὶν ἔχοντες* seen earlier, and we would need evidence for a productive derivational model of this type.

The famous pair *ποδώκης* vs. *πόδας ὠκύς*, both qualifying Achilles, seems very suggestive. An original derivation from the adjective may appear excluded as the accent of *ποδώκης* points to a *bahuvrīhi*. That **ὦκος* itself is not attested is no obstacle to this as the entire lexical group of *ὠκυ-* is replaced gradually by *ταχυ-*, and as at the same time the abstract nouns in *-ος* begin to find themselves increasingly in competition with formations in *-τητ-* it is not just entirely plausible but only to be expected that **ὦκος* became the first victim of this replacement process. But this may not be the full story. It has recently been pointed out that that the nom. is actually attested only twice, and in non-formulaic contexts.[57] The oblique cases prevail almost throughout. Most significantly, though, in the formula where we would expect to find *ποδώκης* (*δῖος Ἀχιλλεύς#*; uncompounded *πόδ' ὠκύς* would violate Wernicke's Law[58] in this position) we get *ποδάρκης* instead which, in turn, does not surface in the oblique cases. According to West, this points to the original lack of *ποδώκης* and an original *πόδ' ὠκέος* (taking the frequent gen. sg. as an example) was, after the loss of intervocalic /h/ and /w/ respectively, understood as an s-stem and the nom. *ποδώκης* then created secondarily. The observations are acute and West may conceivably be right here. But it

[57] West (2001) 132 f.

[58] This 'law' states that if the fourth foot of a hexameter is a spondee, word division will normally occur only when the syllable is heavy by nature before the break, i.e. has a long vowel in its final syllable.

may be worth exploring this a little further. First, given that *πόδας ὠκύς* is frequent and is also used for Achilles it is questionable whether *πόδ' ὠκέος* would have been understood as anything other than a u-stem. Secondly, *ποδάρκης* in this position is itself not without problems. Overlength, i.e. sequences of the type V:CC, are notoriously and systematically avoided at the end of the fourth foot in formulae, and arguably the use of **πόδ' ὠκύς* in this position with its mild and not even that uncommon breach of Wernicke's Law, cf. *βοῶπις πότνια Ἥρη*,[59] would be no less acceptable than *ποδάρκης* here.[60]

Reliable evidence for a derivational model of this type is scarce; alternations between uncompounded phrase and compound hardly ever occur. The recent *hapax ἀγχιβαθής* 'deep right to the shore' (*Od.* 5.413) is more likely to be built on *βάθος* 'depth' even though it is noteworthy that Homer only has *βένθος*. *οἰνοβαρής* 'wine-laden' also comes very close here but it is clear that *οἰνοβαρής* corresponds not to unattested **οἴνῳ βαρύς* but to *οἴνῳ βεβαρηώς* (*Od.* 3.139, 19.122).[61] The use of *βαρύς*, as well as that of many other u-stem adjectives in Homer, is absolute, i.e. the adjective itself is never qualified (other than by an adverb indicating gradation like 'very'). In post-Homeric Greek we find phrases like *γήρᾳ βαρύς* (S. *OC* 875) 'weighed down by age' but these are different: the u-stem adjectives seem to indicate a *natural* or *permanent* quality. *γήρᾳ βαρύς* is thus very poignant; **οἴνῳ βαρύς* would only be suitable to denote a chronic alcoholic—but *οἰνοβαρής* is quite sufficient for Achilles to insult Agamemnon as at *Il.* 1.225.

The post-Homeric evidence is not much better. A survey of Greek authors right down to the Hellenistic period shows that, apart from the cases just quoted, only two compounds could conceivably be

[59] Cf. also *Il.* 1.402, 1.433 for common and identically structured violations of the law. It seems that 'Wernicke's Law' is just a tendency involving a sliding scale: words containing a long vowel are certainly the most frequent ones here; words ending in -VC also occur, but are significantly rarer; words ending in a short open syllable (i.e. a short vowel), lengthened only by two or more initial consonants of the following word as in Hes. *Th.* 135 . . . *Θέμιν τε Μνημοσύνην τε* are exceedingly rare.

[60] The accent, in truth, does not help here at all. While it is obvious that the accentuation of *ποδώκης* is compatible with that of a *bahuvrīhi* but not with that of *ὠκύς*, it is also true to say that in univerbations resulting from juxtapositions the accent can be retracted as far as possible, cf. *πόδαργος*.

[61] For this interesting and difficult word see also below section 4.7.

considered as having been derived from u-stem adjectives, nom. pl. *κυνοθρασεῖς* 'impudent as a dog' (*hapax*, A. *Supp.* 758) and *ἀγλυκής* 'not sweet, sour' in Thphr. *CP* 6.18.8, nom. pl. *ἀγλυκεῖς ibidem* 6.14.12. The former can be dismissed when one considers that next to the normal *θάρσος* 'courage' in tragedy we also find a noun *θράσος* in the meaning 'over-boldness, rashness'. As the semantics of this noun fit those of *κυνοθρασεῖς* exactly, the latter is more likely to have been derived (and to be understood as having been derived) from *θράσος*. As to the second adjective, the regular *ἀγλευκής* from *γλεῦκος* is attested earlier (X. *Hier.* 1.21) and occurs much more frequently. It is significant that even when a direct opposition is expressed the antonym of *γλυκύς* is *ἀγλευκής*, despite that fact that *γλεῦκος* had long come to acquire the specialized meaning 'sweet wine'. *ἀγλυκής* only surfaces in one manuscript of Thphr. but should be taken seriously because of the accentuation and because it is the *lectio difficilior*. It unexpectedly shows the root gradation of the simple adjective. However, the example comes from Hellenistic times, i.e. from a period when the compositional type negation + adjective had become a tolerably productive type of word formation—and determinative compounds in general are on the rise. Therefore, we might regard *ἀγλυκής*, if genuine, as a contamination of *ἀγλευκής* and principally acceptable but unattested **ἄγλυκυς* and in any case owing to the different rules of word-formation in place then this formation proves nothing for Homeric *ποδώκης*.[62]

Semantically, both the assumption of an original *πόδ' ὠκέος* and its subsequent reanalysis as an s-stem are unproblematic as the phrase indicates a natural, permanent quality that Achilles has. Formally it is more difficult. It would appear, finally, that the formation of compound adjectives in *-ης* is entirely dependent on the existence of corresponding neuter nouns in *-ος*. While compounds in *-ταχής*, *-μήκης* are liberally formed, **-βραδής* or **-βραχής* do not exist, at least not until Roman times. The explanation is simple: they do not exist because the neuter nouns *βράδος* and *βράχος* do not and for semantic reasons cannot exist in Classical or even Hellenistic Greek (see section 2.6). Only when these are

[62] Note that Thphr. uses *ἐπίγλυκυς* (*HP* 3.18.10) and, incidentally, the remarkable *ἐπιγλυκαίνω* 'am sweet', and not 'sweeten' in *CP* 6.15.4.

created in Roman times do we find a gen. pl. προβραχέων (*hapax*, Polyb. 1.47.1), and this compound means 'shallows, sandbank', exactly like the noun βράχεα which is used by the same author.[63]

Denominal (or more precisely non-deverbative) Greek compounds in -ης are thus not derived from adjectives in -υς. They are entirely dependent, semantically and morphologically, on neuter nouns in -ος. There is still a remote possibility that ποδώκης was *felt* to contain ὠκύς, precisely because *ὦκος had been lost. But this is as far as we can go. In Early Greek, we cannot assume that other s-stem adjectives were derived or felt to have been derived from u-stem adjectives and we are not entitled to speak of a 'replacement' of -υ- by -εσ-, neither as a historical nor as a synchronic rule of word formation.[64]

4.7 ADJECTIVES IN -ης DERIVED FROM VERBS

Introduction

All the formations considered so far are diachronically and probably also synchronically related to neuter nouns. However, already by Homeric times a very significant number of adjectives in -ης exist that can scarcely be derived from neuter nouns in -ος. In the earlier part of the twentieth century it was common to assume that in all such cases a neuter noun had been lost. Thus, ὁμηγερής 'assembled' was taken as evidence for an s-stem *γερεσ-[65] and a nominal stem *παγεσ- 'frost' was inferred from ὑπερπαγής 'very frosty'.[66] These derivations have been questioned. It is undeniable that in a number

[63] Similarly, Strabo (5.4.5, 6.3.6, 7.4.1) employs a form προσβραχῆ in a comparable meaning.

[64] The fact that such compounds are sometimes taken by the grammarians as having been formed directly from the adjectives reflects the growing trend towards endocentricity and says nothing about the true genesis and understanding of these compounds. It is also interesting to note that adjectives in -υς never occur as back-formations from compound adjectives in -ης. When such back-formations occur, they remain s-stem adjectives (see section 4.11 below on simple adjectives and cf. in particular the telling ἀγής[ᾰ!] on which see below).

[65] See Solmsen (1909) 16.

[66] See Bechtel (1914) 274.

of instances a neuter s-stem noun was indeed lost. Thus a formation like ἐχεπευκής 'sharp, piercing' (or perhaps better 'cut-bringing'?[67]) is understandable only as containing a neuter noun *πεῦκος as its second member. Secondly, the semantics of these compounds quoted above are distinctly verbal. The problem was soon recognized by Chantraine but he did not go further: '[on trouve] chez Homère et Hésiode un grand nombre de dérivés qu'il est difficile de mettre en rapport avec des substantifs sigmatiques, soit que ces substantifs aient disparu sans laisser de trace, soit que nous ayons affaire à des formations analogiques.'[68]

The full dimension of the problem was subsequently acknowledged by Schwyzer: 'oft enthält sie [the formation in -ης] verbalen Bezug und dient als eine Art aktives oder passives Verbaladjektiv' but he did not discuss the actual derivational process in detail.[69] Risch tried to explain the problem invoking semantics as the bridge: 'Jedoch konnte ein Adjektiv wie διογενής = "sein γένος von Zeus her habend" auch direkt auf das Verbum γενέσθαι bezogen werden.'[70] Since then the deverbal derivation has been echoed from various corners, most notably by Kuryłowicz for whom 'les composés grecs en -ής/-ές [...] sont, par opposition à l'indien, une formation à première vue synthétique'.[71] Ever since Kuryłowicz and Risch, it has been commonly admitted that Greek derived such adjectives from verbs or verbal roots on a large scale.[72]

It is questionable, though, whether the reason for this deverbal derivation is entirely semantic. Certainly, διογενής could be regarded as being derived from γενέσθαι, but it would appear that in addition we should ask whether phono- or morphological factors also play a role.

[67] The word occurs twice, both times in the phrase βέλος ἐχεπευκές; the -ος counts as long and in my view this would be best explained by assuming that the root of the compound was ϝεχ- 'bring', not (h)εχ- 'have, hold', but admittedly this is not conclusive.

[68] See Chantraine (1933) 436.

[69] *Gr. Gr.* i. 513.

[70] Risch (1937) 75 = (1974) 81. A similar explanation had been put forward previously by Debrunner (1917) 51 and 72.

[71] Kuryłowicz (1952) 169.

[72] See e.g. Blanc (1987) 2 *et passim*, Tucker (1990) 62 n. 65.

If it could be proven that an adjective in -ηϛ is derived from a verbal root ending in -η- we might have a promising starting point. Indeed, at least one such root can be found in Early Greek. Homer uses a number of compounds of ἄημι 'blow' ending in -ηϛ : ζαής 'strong-blowing', ἁλιαής 'blowing seaward', δυσαής 'ill-blowing' etc. These inflect as s-stems throughout, gen. sg. -αέος etc. Yet in *Od.* 12.313 we read ὦρσεν ἔπι ζαὴν ἄνεμον νεφεληγερέτα Ζεὺς 'Cloud-gatherer Zeus whipped up a strong-blowing wind'. ζαήν is not an s-stem form, unless we want to assume an Aeolic inflection here which would be unparalleled—but admittedly it could be that the entire line is Aeolic in origin. The reading was questioned already in antiquity, and Aristarchus read ζαῆν, Herodian 2.154 regarded it as elided ζαῆνα. This can hardly be right as the s- and n-stem are hard to reconcile, and there is no reason to assume an n-stem at all here. ζαήν looks very much like the regular acc. of a root compound, perhaps also to be seen in the gen. pl. δυσαήων (*Od.* 13.99). If genuine, we can witness these root compounds being transferred to s-stems. We cannot regard these formations as the starting point for a deverbal derivation but it shows how a verbal root/stem could lend itself to the formation of such a compound. Here, the formal identity in the nom.sg. between a root compound from a verbal root ending in -η- < *-eh_1- and a regular (denominal) s-stem compound seems to have been sufficient to ensure that the former adopted the inflection of the latter.

Compounds in -ηϛ and the Aorist in -ην

The example of the -αήϛ compounds indicates that formal similarity can be regarded as a factor in the creation of (deverbative) adjectives in -ηϛ. In this context, it seems that another group can be identified. It has been observed[73] that an adjective in -ηϛ is quite often accompanied by an intransitive/passive aorist in -ην. Indeed, a good number of such formations are attested, and the semantics of the compounds are clearly verbal. The pairs of formations illustrated in Table 4.1 may serve to underline this point.

[73] See McKenzie (1919). His conclusion that these adjectives were built on ē-stem nouns all of which would have to have been lost is unfortunate and may be the main reason why his important observation has been largely ignored.

Table 4.1. S-stem adjectives and strong aorist passives in Homer

Compound	Aorist formation
ἡμι-δαής 'half-burnt'	*ἐδάην* 'I burnt, was burnt'
θεσπι-δαής 'kindled by a god'	*Ditto*
ἀ-αγής 'unbroken'	*ἐάγην* 'I broke, was broken'
μεσσο-παγής 'fixed upon the middle'	*ἐπάγην* 'I was fixed'
πρωτο-παγής 'just put-together'	*Ditto*
γυναι-μανής 'mad for women'	*ἐμάνην* 'I went mad'
τηλε-φανής 'visible from afar'	*ἐφάνην* 'I appeared'

In later Greek, many more such parallels are attested and at least 34 different roots employed. McKenzie's observation is clearly valuable, all the more so since these compounds can hardly be derived from neuter nouns in *-ος*. In most cases, corresponding nouns of this kind do not exist and it would be implausible to suggest a loss in all instances. It is also noteworthy that all these compounds show the zero grade of the root which is typical for the aorist in *-ην* but not for neuter nouns in *-ος*. Also, where such nouns do exist beside an aorist in *-ην* and a compound adjective in *-ης*, the compound is normally semantically much closer to the aorist than to the noun: *ἡμιδαής* belongs to *ἐδάην* rather than to *δάος* 'torch'.[74] It is suggested here, then, that compounds like *ἡμιδαής* are dependent on the aorist stem on the same principle of formal similarity that was observed in the preceding section.

Classical Armenian yields a remarkable typological parallel for such a process. Starting from forms interpreted as verbal like *akanates*[75] 'eye-witness', Armenian formed compounds built on the productive aorist in *-cʻ-* like *miaynkeacʻ* 'living alone' < *kecʻi*, (3rd sg. *ekeacʻ*) 'I have lived', *anmoṙacʻ* 'unforgotten' < *moṙacʻay* 'I forgot' etc.[76] In restricting the formation of the deverbative adjectives in *-ης* to compounds, Greek behaves exactly like Armenian with its compounds in *-cʻ-*. Simple adjectives of this sort do not occur and are not needed as they would have been identical to

[74] The notable exception to this is the group of active compounds in *-σφαλής* beside aor. *ἐσφάλην* which cannot be explained on this basis.

[75] The second member was probably a noun **-deḱā* but was later interpreted as belonging to the aorist *tesi* 'I saw', 3rd sg. *etes*. See further Olsen (2002) 244.

[76] See Meillet (1913) 245 f.; for further examples see Olsen (1999) 731 ff.

participles and verbal adjectives. Moreover, the model of denominal adjectives in -ης led to the creation of deverbative compounds only.

Sanskrit offers a further, though weaker, parallel for the derivation of compound verbal adjectives from full stems. In Vedic times we find a mildly productive derivational pattern of this type, cf. RV *agnim-indhá-* 'lighting fire' from the verbal stem *indhá-*.[77]

Compounds in -ης and Stative Verbs in *-ē-

A remarkable attempt to explain another subgroup of these compounds was made by Tucker[78] who was able to show that alongside Caland adjective formations (compound adjectives in -ης and simple adjectives primarily in -υ- and -ρο-) verbs in -έω, -ησα are attested which she identifies as successors of the PIE stative formations in *-ē(s)-. She then draws attention to compounds like δυσθανής 'dying unhappily' that are clearly built on verbs and concludes that adjectives of the type οἰνοβαρής, ἐναργής are derived directly from the corresponding stative verb whose radical zero grade was identical to that of the adjective. Her argumentation is purely structural and is aimed at explaining οἰνοβαρής on the same terms as δυσθανής. We have seen above that a denominal derivation for οἰνοβαρής seems the likely one, and there is the dilemma that in this system of derivation a stative verb is also accompanied by an abstract neuter noun in -ος, rendering a final decision as to the derivational mechanism difficult. But let us recall that οἰνοβαρής paraphrases οἴνῳ βεβαρημένος and, although the number of instances is very small, Tucker could also be right.

Compounds in -ης and the Perfect

Given their often intransitive and stative semantics and their close association with the ē-formations, we could also expect a connection between sigmatic compounds and perfect stems. Some evidence may indeed exist for such a connection: -θηλής has a long root vowel just like the perfect τέθηλα, and the same may hold true for -γηθής vs. γέγηθα,

[77] See *Ai.Gr.* ii,1. 178 ff. [78] See Tucker (1990) 57 ff.

though here we have an old stative formation still visible in the aorist γήθησα as well. But εὐπηγής 'well-fixed' is much closer in meaning to πέπηγα than to πήγνυμι. It is difficult to prove the point, however, as deverbative compounds with o-vocalism so characteristic for the perfect are very hard to find. At best, πλευμορρωγής 'broken in the lung' (Hp. *Int.* 2) corresponds closely to ἔρρωγα 'I am broken' but a variant reading πλευμορραγής exists. Homer's κατωρυχής 'dug-out' may have been built on the perfect ὀρώρυχα but could also come directly from the root ὀρυχ-. Perhaps the perfect was too highly marked to serve as the basis for such compounds.

The Homeric Evidence

Homer uses around 274 different s-stem compounds of which 27 are personal names. Taking all of these into account, the formations listed in Table 4.2 (in alphabetical order of the second element) are likely to be deverbative. It must be borne in mind that, for the reasons explained above, it is not always possible to determine with absolute certainty whether a given compound was derived from or even understood to be derived from a noun or from a verb.

The Formation and Usage of Deverbative S-stem Compounds in Homer

According to this classification, about 60 roots are involved in forming deverbative compounds, yielding a total of *c.*85 different lexemes. The simplest shape of the root is normally chosen; if a verb shows ablaut in its paradigm, either the full grade or the zero grade can surface in the compound; in one case (πηγ-/παγ-) both gradations are found. The choice between the two seems to be determined at least in part by the frequency with which the verbal forms showing a particular grade occur: forms in σπερ- are far more frequent than such in σπαρ-, τρεφ- occurs more frequently than τραφ-, hence -σπερής and -τρεφής. But if an aorist in -ην exists, the compound adjective will normally have its gradation: ἐπάγην is much rarer than forms in πηγ- (present, aorist, and future) but we find πρωτο- and μεσσοπαγής while εὐπηγής is a *hapax legomenon* in *Od.*: παγ- here would have created an inadmissible cretic.

Table 4.2. Deverbative S-stem adjectives in Homer

Compound	Verb
ἀ-αγής 'unbroken'	*ἐάγην*
ἁλι-αής 'blowing seawards' (also *ζ-*, *ὑπερ-*, *ἀκρ-*, *δυσ-*)	*ἄημι*, see above at the beginning of this section
προ-αλής 'sloping'	*ἠλάμην*
ποδ-άρκης 'defending with the foot'	*ἀρκέω*? (accent?)
οἰνο-βαρής 'weighed down by wine'	*βεβαρηώς*
χαλκο-βατές 'standing on bronze'	*βαίνω*, see above
πολυ-γηθής 'much rejoiced in' or 'making happy'?	*γήθησα*, *γέγηθα*
ὑ-γιής 'living well' or 'living forever'	root* *g*^{w}*eih*$_3$-, *ἐβίων*
ἡμι-δαής 'half-burnt', also *θεσπι-*	*ἐδάην*
θυμο-δακής 'heart-biting'	*ἔδακον*
ἐπι-δευής 'lacking'	*δεύω*
ἀμφι-δρυφής 'torn on all sides'	*δρύπτω*
ἀ-εικής 'unseeming' (also *ἐπι-*, *μενο-*)	*εἴκω*
ἀ-ειλής (also *-ολλής*) 'gathered'	*εἴλω*
ἀ-ελπής 'unhoped for'	*ἔλπομαι*
εὐ-εργής 'well done'	*ἔρδω*, Cypr. *e-ve-re-xa*
ὑψ-ερεφής 'high-roofed' (also *κατ-*, *ἀμφ-*, *ἐπ-*)	*ἐρέφω*
συν-εχής 'continuous'	*ἔχω*
ὁμ-ηγερής 'assembled' (also *πολυ-*)	*ἀγέρομαι*
δυσ-ηλεγής 'merciless' (also *ταν-*, *ἀπ-*)	*ἀλέγω*?
ν-ηλεής 'pitiless'; 'inescapable'	*ἐλέησα* and *ἀλέομαι*
χαλκ-ήρης 'furnished with bronze'	*ἄρμενος*
πολυ-ηχής 'resounding' (also *ὑψ-*)	primary verb **ἴχω* (cf. *ἰάχω*)?
δισ-θανής 'twice-dead'	*ἔθανον*
ἐρι-θηλής 'very flourishing' (also *νεο-*)	*τέθηλα*
πολυ-καγκής 'much-parching'	*κάγκω*
εὐ-καμπής 'well-bent'	*κάμπτω*
ἀ-ληθής 'not hidden'	*λήθω*
γυναι-μανής 'mad for women'	*ἐμάνην*
ἐμμαπέως 'quickly'	cf. *ἐμάπεον*
πρωτο-παγής 'newly-made' (also *μεσσο-*)	*ἐπάγην*
αἰνο-παθής 'suffering terribly'	*ἔπαθον*
Εὐ-πείθης 'well obedient' or 'persuading well'	*πείθομαι*, *πείθω*
διει-πετής 'flowing swiftly' (also *ὑψι-*, *παλιμ-*)	*πέτομαι*
διαμπερής 'through and through'	*πείρω*?
ἀ-πευθής 'not inquired'	*πεύθομαι*
εὐ-πηγής 'well-fixed'	*πήγνυμι*
εὐ-πλεκής 'well-twisted'	*πλέκω*
εὐ-πλυνής 'well-washed'	*πλύνω*
δυσ-πονής 'toilsome'	Only as gen. sg. *δυσπονέος*; most likely to be a metrical licence.
μετα-πρεπής 'distinguished among' (also *ἀρι-*, *ἐκ-*)	*πρέπω*
εὐ-ρραφής 'well-stitched'	*ἐρράφην*
εὐ-ρρεής 'well-flowing'	*ῥέω*

Continued

Table 4.2. *Cont.*

Compound	Verb
περι-ρρηδής 'sprawling'?	basis uncertain
πολυ-σπερής 'wide-spread'	*σπείρω*
ἀ-σπερχής 'not hasting'	*σπέρχω*
ἐπι-στρεφής 'turning towards' (also *ἀμφι-*, *εὐ-*)	*στρέφω*
ἐρι-σφαλής 'very treacherous' (also *ἀρι-*)	*ἐσφάλην*
ἀ-τειρής 'indestructible'	*τείρω*
κυκλο-τερής 'rounded to a circle'	*τείρω*
ἀ-τερπής 'not pleasing'	*τέρπω*
κα-τηφής 'downcast'	cf. *θάπτω*[79]
εὐ-τρεφής 'well-nourished' (also *διο-*, *ζα-*, *ἁλιο-*, *ἁπαλο-*, *ἀνεμο-*, *ὑδατο-*)	*τρέφω*
τηλε-φανής 'appearing from afar'	*ἐφάνην*
προ-φερής 'carried before'	*φέρω*
Πολυ-φείδης 'much-sparing'	*φείδομαι*
ζα-φλεγής 'completely burning'	*φλέγω*
ἀ-φραδής 'not considering' (also *κακο-*, *ἀρι-*, *εὐ-*, *περι-*)	*φράζω*
ζα-χρηής 'attacking violently'	*χράω*
κατ-ωρυχής 'dug out'	*ὀρύσσω*

On the whole, deverbative compounds do not show the same degree of preponderance in Homer as in later Greek where the denominal derivation, in line with the trend away from *bahuvrīhis*, loses ground. Of these 60 roots, 26 are used as passives in the strictest sense; the compounds are often, but not necessarily, accompanied by aorists in *-ην*. Another 16 are stative or intransitive and are often found alongside a 'Tucker stative' or an aorist in *-ην*. One root yields a root compound (*-ᾱής*); in a few cases the exact basis is hard to determine. Only 15 roots produce 'active' compounds of the type *εὐρρεής* but in only one single case, *θυμοδακής*, do we find a proper active compound where the first member serves as the accusative complement of the verbal second member.[80] There can be little doubt that this compound is understood as verbal as *δακέθυμος* is found in Simonides and Sophocles, and it renders a phrase **θυμὸν δακεῖν*, cf. *δάκε φρένας* 'bit his heart' *Il.* 5.493. This seems very much like an *ad hoc* creation. In later Greek, such formations occur as well, but for

[79] See Blanc (1988).

[80] A possible second example is *θεουδής* 'god-fearing' < *θεο-δϝεής* but the word is at least as likely to be of denominal origin.

the most part, with some exceptions, we find a remarkable phonotactic restriction. Until Hellenistic times, this type of formation is not just very rare but largely restricted to verbs whose root vowel could not ablaut: cf. *γυιαρκής* 'strengthening the limbs' Pi. *P.* 3.6, *χερσομυσής* 'defiling the hands' A. *Ch.* 73 (lyr.). In these instances, Greek had no way of forming a 'normal' verbal governing compound of the type *κουροτρόφος* 'nourishing children' with o-grade of the root. From δακ-, *-δόκος cannot be formed. The type with unchanged root vowel does exist (*γλακτοφάγος* 'consuming milk') but is rare[81] and less well marked than the type *κουροτρόφος*. Formations like *θυμοδακής* are thus examples of poetic licences *faute de mieux*. But there is another point to be made here: such compounds normally occur only if an s-stem noun is attested alongside the compound and if this noun has a distinctly active meaning (cf. δάκος 'biting animal, bite', *ἄρκος* 'defence', *μύσος* 'defilement'. Compounds like *αἰνοπαθής* 'suffering badly' or *κακοφραδής* 'evil-speaking' are borderline cases where the first part could be understood as adverbial; but it is certainly possible that such formations contributed to the indiscriminate later usage of the suffix.

In this way, Greek produced a handy tool to distinguish formally 'active', i.e. transitive, and non-transitive verbal compounds. However, Risch[82] observed that already in Homer compounds like *ὀρεσίτροφος*, an original *bahuvrīhi* based on *τροφή* as shown by the accent 'having nourishment in the mountains', could be understood as 'nourished in the mountains'. The use of the first member as the agent is not yet found in Homer, examples like *θηρότροφος* 'nourished by animals', *θεόπομπος* 'sent by a god' showing proparoxytonesis as opposed to the characteristic paroxytone accent of the verbal compounds, only occur from Pindar and tragedy onwards. Thus, the established formal distinction between active and non-active verbal compounds begins to be obscured again. This means that, since *εὐρρεής* and *εὔροος* are semantically identical, there was scope for some interchange here. However, for a long time Greek resisted complete interchangeability.

In Classical Greek, transitive-active verbal compounds in *-ης* (apart from those with a root vowel *-α-*) are still very rare. For example,

[81] See Risch (1974) 207.

[82] But not yet in Mycenaean, see Risch (1974) 197.

Sophocles has only one such compound, *πανκευθής* 'all-covering', and they are completely absent from Thucydides. Where they do occur, as in the case of *θεοσεβής* 'god-fearing' (Hdt.+) they are mostly supported, as in the case of Homeric *θυμοδακής*, by an s-stem noun (*σέβας*). It is only in late Classical and Hellenistic Greek that compounds in *-ης* become transitive-active indiscriminately. Thus, *πανδερκής* 'seen by all' (Bacch.+) is attested as 'all-seeing' in Q.Smyr. 2.443+, *παμφερής* 'all-bearing' occurs in Galen 19.469, *γυναιμανής* is understood by Hesychius as 'making women mad' etc.

It seems, therefore, that we do indeed have to start from an intransitive, stative or passive *-ης*. The connection with verbal formations of this type (aorists in *-ην*, original statives in *-έω*, *-ησα*) may be secondary but is nevertheless quite strong. While the formation of denominal s-stem adjectives is still restricted to s-stem nouns, the deverbative formations have already gained substantial ground as shown by formations like *δισθανής*.

This tendency is further confirmed by the post-Homeric development of this class. The s-stem compounds are very productive in Attic, being about twice as frequent in poetry as in prose. Sophocles, for example, employs 198 s-stem compounds of which 102 can be described as deverbative and in Thucydides we find 108 s-stem compounds of which 63 are deverbative. The deverbative formations gain ground steadily and are in Classical Attic somewhat more frequent than the denominal ones. Yet it is not the case that an adjective in *-ης* could be formed from any verb. The above list shows that secondary verbs, in particular all those in *-εύω*, *-άω* or *-όω* do not normally form the basis for an s-stem compound; verbs in *-έω*, on the other hand, need discussion here. Possible examples are very rare and what is there are poetic nonce formations and *hapax*, and for some of the more prominent formations alternative explanations are conceivable and much more likely. The only quotable Homeric example is the *hapax* often quoted as *δυσπονής*. In fact, only the gen. sg. *δυσπονέος* is attested, in *Od.* 5.493:

δυσπονέος καμάτοιο, φίλα βλέφαρ' ἀμφικαλύψας
[so that she would stop] his toilsome trouble by covering his dear eyelids

It is clear that the regularly formed, denominal *δυσπόνοιο* would not scan here. But neither would contracted *δυσπόνου*, nor even

δυσπόνοο. There is thus more than a strong suspicion here that δυσπονέος was created solely for metrical reasons (see also section 4.5 above). In any event, it is most unlikely to have been built directly on πονέομαι since frequentative verbs in -έω with root vocalism -o- (type φέρω, φορέω, πέτομαι, ποτέομαι) do not otherwise form the basis for sigmatic compounds. At best, one could argue that it was created as *δυσπενής < πένομαι which, at least in the meaning 'toil, labour', was being replaced by πονέομαι already in Homer. Under the influence of the secondary verb and also of πόνος,* δυσπενής may have been adapted to δυσπονής. On balance, however, the metrical explanation would appear to be the easier and more natural one. αὐτοκελής 'self-motivated' found at Hdt. 9.5.3 is much more likely to be derived from κέλομαι rather than from κελεύω. Another example, though quite problematic, seems to be φρενοδαλής 'mind-destroying'. This is found only in A. *Eum.* 330 = 343, and while the meaning is clear, both form and derivation are difficult to say the least. In order to derive this adjective from δηλέομαι, the α is commonly taken to be long.[83] But it is clear that it occurs in the Binding Song at the end of a string of paeons scanning ∪ ∪ ∪—and so it is best taken as short, and with very good reason.[84] In this case, the connection with the verb cannot stand, and the etymology must be regarded as uncertain; a variant reading φρενοδαής exists for *Eum.* 330, and this may be correct.

On the whole, then, it appears to be hard to find clear-cut examples for such a process. They occur with a certain frequency only in post-Classical Greek, cf. Nicander's ἐπιλωβής 'mischievous' (*Th.* 35, 771) as a Homeric reminiscence, seemingly derived directly from ἐπιλωβεύω 'make mockery' (*Od.* 2.323). This evidently is not a regular pattern of word formation, and where such words occur, they appear to be poetic nonce-formations.

Conclusion

In sum, then, Risch's view that -γενής could be felt to be connected with γενέσθαι may well be right but it would appear that very early on in the history of these formations, the suffix -ης

[83] See the entry in LSJ, and many editors follow this.
[84] See Sommerstein (1989) 289.

became associated with aorists in *-ην* and statives in **-ēs-*. The remarkable morphological and semantic parallelism between the verbal forms and the compound adjectives can hardly be explained otherwise, and in this way it is possible to understand why the s-stem adjectives changed their nature so radically during the history of the language.

4.8 EARLY FORMS: THE ONOMASTIC AND MYCENAEAN EVIDENCE

It is clear that deverbative compounds in *-ης* are a Greek innovation, but they are frequent already in Homer. However, the secondary nature of such compounds may still be gathered from the fact that this type is distinctly less well established in the formation of personal names. While names in *-γένης*, *-κλέης*, *-θέρσης*/*-θάρσης*, *-άνθης* etc., all based on neuter nouns, are common and widespread,[85] deverbative personal names of this type are extremely scarce. The best examples are *Λητώδης* (and perhaps *Εὐρυάδης*) < *ἀδεῖν* 'please' (or in fact < *ἄδος*?), *Εὐπείθης* < *πείθω*/*πείθομαι* 'persuade/obey' (if not < **πεῖθος*, cf. Lat. *foedus*) and *Πολυφείδης* < *φείδομαι*, none of which occurs in the Iliad. It may well be that the notoriously conservative personal names are still hesitant to accept this new type of derivation. By contrast, verbal compounds in general are very well attested as personal names. In fact, all other types of verbal governing compounds are attested in such a function, and this holds true in particular for the *τερψίμβροτος* and the *Ἐχέπωλος* types. Both are attested from Myc. onwards, cf. *a-ke-ra-wo* = Hom. *Ἀγέλᾱος* or *Ἀρχέλᾱος*, *e-ke-da-mo Ἐχέδᾱμος*, *ne-ti-a-no Νεστιάνωρ*, *a-re-ka-sa-da-ra Ἀλεξάνδρᾱ*; the type *κουροτρόφος* is also found, cf. *pe-ri-to-wo* = Hom. *Πειρίθοος* (with metrical lengthening). But if Myc. is rich in verbal compounds in general, it is also completely lacking in s-stem personal names built on verbs.[86] This fits well with the Homeric data and confirms that the 'traditional' types of VGCs (*τερψίμβροτος* and *Ἐχέπωλος*) hold their ground here and

[85] See, for the Homeric evidence, von Kamptz (1982) 88 f.
[86] See Landau (1958) 250 f.

that the encroachment of deverbative s-stem formations upon the domain of personal names is a late development.

Myc. is also worth exploring for its general use of s-stem compounds. Many personal names are directly or indirectly attested, cf. *a-o-ri-me-ne* Ἀοριμένης, *e-te-wo-ke-re-we-i-jo* 'son of Ἐτεοκλέης' but these are all denominal. Appellative formations also occur, cf. the adverb *za-we-te* 'this year' = σῆτες, τῆτες <**k̂i̯ā-u̯etes*, *no-pe-re-a*$_2$ = ν-ωφελέα (neut. pl.) 'useless', *ti-ri-jo-we* (and other numerals + *-o-we*) τρι-ωϝής 'with three handles' <*οὖhος.[87] Other s-stem adjectives are easily identified as such but more difficult to interpret. *pu-ko-so e-ke-e* PY Ta 241.3 (fem. nom. du.) seems to mean something like 'with box wood supports' but it is not clear whether this should be interpreted as πυξο-(h)εχέε from an unattested *ἔχος/ἕχος, deverbal πυξο-(h)εχέε 'held by boxwood' or πυξο-(h)εγχέε 'with spears (ἔγχος) made from box wood'.

Clear deverbative compounds are hard to find. The best candidate is *ke-re-si-jo we-ke* 'Cretan made' in PY Ta 641.1. The adjectival first member may find a parallel in the type μιλησιουργής 'Miletan made';[88] the full grade of the second member is somewhat surprising, given that both the present (*wo-ze*) and the probable aorist (*wo-ke*) are zero-grade formations. But both ἔρδω and Cypr. *e-ve-re-xa*, likely to be read *everksa*, show a full grade in historical times, and it would appear that already in Myc. deverbative s-stem compounds could be derived directly from what was understood to be the verbal root.

Much more uncertain is *ka-ka re-ạ* KN R 1815. A reading χαλκᾱρε(h)α 'fitted with bronze' would fit the context [*e*-]*ke-a* (ἔγχεα) very well, cf. χαλκήρει δουρί *Il.* 5. 145+. But the tablet is broken between *ka-ka* and *re-ạ*, the distance between the two sign groups is considerable and something may have stood in between. Even if the interpretation is correct, we cannot determine whether the compound belongs to the type later reflected in -ήρης or in -ᾱρης.

87 See Szemerényi (1967*a*) for the stem formation.
88 See also Meißner and Tribulato (2002) 311.

4.9 THE ACCENTUATION AND ROOT GRADATION OF S-STEM COMPOUNDS[89]

Accentuation

This last problem leads directly to an issue that we have hitherto only touched upon despite its considerable importance. It will have become obvious from the forms presented and discussed that s-stem compounds can be accentuated on the root of the second member or on the suffix. The latter is much more common, indeed oxytonesis is the general rule. This is undoubtedly the reason why in Indo-Europeanist literature these compounds are commonly called 'hysterokinetic' (i.e. showing movement of accent between the suffix in the 'strong' cases, i.e. nom., acc. and in the sg. loc., and the ending in the remaining cases). The root regularly bears the accent if the compound is a personal name. Otherwise, it can, but need not, bear the accent only:

(a) if it contains a long vowel or diphthong: in Homer, these are the compounds in *-ώδηϛ*, *-ώκηϛ*, *-ήκηϛ*, *-μήκηϛ*, *-ήρηϛ* (root *ἀρ-*), *-κήτηϛ*. In post-Homeric Archaic and Classical Greek we also find *-ᾱ́δηϛ*, *-ώληϛ*, *-ώπηϛ*, *-ώρηϛ*, *-μήδηϛ*, *-δήνηϛ*, *-ήθηϛ* *-ήρηϛ* (root *ἐρε-*), *-πήχηϛ*, *-στήθηϛ*, *-οίδηϛ*. It seems that only Homeric compounds in *-άρκηϛ* and *-άντηϛ* deviate from this rule. Both can be explained as having their initial vowel shortened secondarily in accordance with Osthoff's Law. If this is right, it would follow that the fixing of the accent on the root predates the operation of the law. But it cannot be entirely excluded that at an early stage, a sequence -VR- had the same accentual properties as -V:-, cf. the traditional accentuation *ἔνθά τε* for Homer, in other words, Early Greek may have had 'mixed diphthongs' just like, for example, Lithuanian;

(b) if the root, from a Greek point of view, consists of more than one syllable. No such examples occur in Homer but from Classical Greek we may quote forms principally in *-μεγέθηϛ*, *-στελέχηϛ* and *-φλεγέθηϛ*;

(c) a number of compounds of *ἔτοϛ* 'year' such as Hom. *οἰέτηϛ* 'one year old' and *ἑξέτηϛ* 'six years old'. These clearly

[89] See also Blanc (1987) 60 ff. for a particularly clear exposé.

have a special status and will be looked at below in section 4.10. In the neuter and in the vocative, the compounds whose second member (originally) begins with a consonant retract the accent onto the first member: *περίμηκες*, *κακό(ϝ)ηθες*; if the second member begins with a vowel, the accent normally stays on the second member: *εὐώδες*; but retraction does occasionally occur, cf. Hom. *τανύηκες*.

The Sanskrit compounds of this type follow the general rules for the accentuation of *bahuvrīhis* i.e. they are normally accented on the root of the second member or on the first member. The only important exception to this is *ā-hanás-* of unclear meaning. It is an epithet of *soma* and has been taken as 'abounding, fat' or 'to be beaten'; if the former, it can and has been compared to *εὐθενής· εὐπαθοῦσα, ἰσχυρά* (Hsch.). It is obvious that the link is tenuous, and *εὐθενής* probably does not continue an old formation and it would be unwise to build any argument on the evidence of this word.[90]

Given the situation in Greek and Sanskrit, it seems that the Greek oxytonesis needs to be explained. Rather than regarding it as the sole relic demonstating the putative hysterokinetic character of the class, it seems that it is an innovation. It has been argued that the oxytonesis strongly points to the verbal character of these compounds.[91] One could, therefore, regard the oxytonesis as being due to analogy after the 'active' verbal compound type in *-ός*, type *ὑ-φορβός*. Most compounds of this type have secondarily shifted the accent one syllable to the left, largely in accordance with Wheeler's Law[92] (type *κουρο-τρόφος*) but also then affecting sequences of the structure ∪ ∪ × by analogy (type *ἵππο-δάμος*). In Homer, only 15 out of 88 compounds of this type remain oxytone. This means that the rise of verbal compounds in *-ής* would have to predate the working of Wheeler's Law.[93] But another explanation is also con-

[90] See also *EWAia.* s.v. *āhanás-*.

[91] See Kuryłowicz (1952) 169.

[92] In a nutshell, this law states that in Greek, oxytone words ending in a dactyl (—∪Ú) retract the accent onto the penultimate syllable (—Ú∪).

[93] Ruipérez (1972) 149 put Wheeler's Law in the same early period as Osthoff's Law since for both the syllabic weight is the decisive criterion. If he is right and if the loss of word-final stops is pre-Mycenaean, Wheeler's Law would be pre-Mycenaean too, and the rise of verbal compounds in *-ης* would have to predate Mycenaean. This is in keeping with the evidence.

ceivable and perhaps more likely. We have seen above the important role that aorists in *-ην* play when it comes to the derivation of the compounds. It is clear that the verbal formations in *-*ē*- were originally stressed on the suffix. This is evident from the regular zero grade of the root as well as the evidence from other languages, cf. Lith. *minéti* 'mention; remember', corresponding to Greek *ἐμάνην*. It may well be, then, that the verbal compounds were first created when the accent in the verb was still on the suffix. In origin, we would thus have had denominal compounds in *-*ηs* and deverbal ones in *-*ήs*.[94] When oxytonesis ceased to be a marker of deverbative compounds as described above, the distinction became blurred and could be replaced by a different system allowing paroxytonesis only if the second member contained at least two morae preceding the suffix.

Root Gradation

Directly connected to this problem is the question of the root gradation of the second member. It has long been assumed that the second member of a (*bahuvrīhi*) compound should show the zero grade of the root, the so called *compositional zero grade*.[95] However, leaving aside the question of the s-stems for a moment, such a zero grade occurs only in a few root nouns, type *ἑκατόμβη*, cf. Skt. *śata-gu-* 'having 100 cows' or in 'verbal' compounds like *χέρνιψ* 'hand-wash basin'. In all such cases, an e-grade noun does not exist and it would *a priori* thus be surprising to find this weak grade in s-stem nouns when used as second members of compounds, and this weak grade would also be at odds with the paroxytone accentuation of s-stem compounds which is here regarded as inherited.

The evidence normally adduced for the weak grade was built on the now no longer tenable assumption that all s-stem compounds had to be derived from nouns, and it can be explained in different ways:

[94] Essentially the same conclusion was independently arrived at by Blanc (1987) 62 f.

[95] See Schmidt (1889) 147, Wackernagel (1897) 16.

(a) Hom. *αἰνοπαθής* (vs. *-πενθής*) is not derived from the noun but from the verb, cf. *ἔπαθον*;

(b) *ἀσκεθέες* at *Od.* 14.255 is only a correction for the transmitted but metrically difficult *ἀσκηθέες*; as the word is elsewhere found only as *ἀσκηθής* in Homer, Düntzer's emendation to *ἀσκηθεῖς* is much more likely; the only alternative, to read *ἀσκηθέες* with synizesis, is less satisfactory as a synizesis in this position would be extremely unusual;[96]

(c) *ἀδιής*[97] seems to be a ghost word;

(d) Hom. *ἐνδυκέως* is of uncertain meaning and derivation. It is far from clear that this word should be connected to *ἀδευκής* of equally uncertain meaning;

(e) *ἀδαής* 'ignorant' S. is not denominal (*δῆνος*) but deverbative;

(f) *χρυσοραγές · χρυσοβαφές* (Hsch.) probably contains a zero grade form of the root **u̯erĝ-* 'work', see section 2.3;

(g) *Λαφάρης*[98] may reflect a regular sound change *-ερ- > -αρ-* typical for a number of Doric/North-West Greek dialects;

(h) *εὐπιθής* 'obedient' belongs to the aor. *ἐπιθόμην*;

(i) *ἀκραιφνής* S.+ was explained by *Σ* Th. 152 as *ἀκεραιοφανής* which is both linguistically impossible and semantically questionable (?'looking unmixed', said of people); both the meaning and the etymology are very badly established (perhaps *ἀκρ-αιφνής* like *ἐξ-αιφνής* 'sudden'?).

Thus far the evidence normally quoted. Of course, many more zero-grade formations are attested, as we have seen, but these can all be explained with the help of a deverbative derivation. A careful examination of the evidence shows that wherever we find an alternation between a full-grade and a zero-grade form in composition, the zero grade is actually younger than the full grade. This is demonstrated very clearly by the conservation of full grades in personal names in *-θέρσης*, *-κρέτης* etc., relic forms that are later replaced by

[96] The contraction of *-εε-* to *-ει-* is rare but not without parallels, see *Gr. hom.* i. 41 f. and 66.

[97] This is quoted in *Gr. Gr.* i. 513.

[98] See *HPN* 442.

-*θάρσης* etc. after the simple noun had acquired the zero grade under the influence of the 'basic' adjective in -*υς*. In no case is a zero grade replaced by a full grade here, and the relative chronology is exactly the opposite of what would be expected if the zero grade were old. Along the same lines, it is precisely isolated formations like *νημερτής* 'faultless' (vs. *ἥμαρτον* etc.) that tend to show the full grade. This is mirrored in Skt. where those s-stem nouns that are only preserved in compounds regularly show the full grade.[99] That such formations point to or even prove an old zero grade of the root of the noun is extremely unlikely.

4.10 TWO SPECIAL FORMATIONS

The great majority of s-stem compounds are explicable on the basis of the principles outlined hitherto. In this short section, we shall turn our attention to two formations that are difficult to understand, the first one from an etymological point of view, the second one with regard to its formation and accentuation.

ὑγιής

One of the most discussed and least clear s-stem adjectives in Greek is the word for 'healthy', *ὑγιής*. Its commonly accepted etymology is a *cause célèbre*: de Saussure explained it as a compound from the word for 'good', cf. Skt. *su-*, and the root for to live that we would now reconstruct as **g*^{w}*eiH*$_3$- or **g*^{w}*iH*$_3$-.[100] He preferred this to his alternative proposal that would link the first member to the word for 'lifespan, eternity' (Gk. *αἰών*, Skt. *áyu-*) and be a close cognate of Av. *yauuaēǰī-* 'living forever'. The latter idea has been developed further in more recent times[101] and is clearly attractive because of the cognates in other languages. Neither etymology is without its difficulties. The word for 'good' is normally *ἐϋ-*/*εὐ-* and to be reconstructed as **h*$_1$*su-*. An outcome *ὑ-* can only be justified if one accepts the suggestion that in original oxytone compounds, an initial

[99] See *Ai. Gr.* ii,2. 225. [100] See de Saussure (1892) 89 f.
[101] See Weiss (1994), in particular 149 ff.

laryngeal could be lost.[102] Even if one is prepared to swallow this, Weiss is completely right in pointing out that the corresponding verbal phrase *εὖ ζώειν* from Homer onwards does not mean 'to be healthy' but 'to be well-off'. His alternative proposal, a derivation from **h₂i̯u-*, meets with formal difficulties as one would expect an outcome **αὐ-* or would have to accept a development **h₂i̯u- > ὑ-*.

In this context, it is important to look at the stem formation of this word. It is clear that the s-stem can hardly be original here. In principle, one could assume that an original root compound **-gʷih₃-s* was extended to an s-stem.[103] Yet there is an enormous obstacle here: this could only have been done if the word was still perceived to be a compound, the secondary creation of a simple s-stem adjective that does not have a compositional counterpart would be entirely without parallels. But if, as Weiss plausibly argues, the dissimilation of **-u-gʷ- > *-u-g-* happened already in the parent language, and if additionally we have to accept the loss of an initial laryngeal (with either etymology), then it is virtually excluded that the word was still understood by any speaker as a compound of the root for 'to live'.

The problems become compounded if we look at the actual attestation of this word. Surprisingly, it is attested only once in Homer, at *Il.* 8.524:

μῦθος δ' ὃς μὲν νῦν ὑγιὴς εἰρημένος ἔστω
τὸν δ' ἠοῦς Τρώεσσι μεθ' ἱπποδάμοις ἀγορεύσω.

Let this speech now be sufficient; the other one I shall announce among the horse-taming Trojans at dawn.

Aristarchus already athetized these lines, not because of the presence of *ὑγιής* but mainly because they seem unconnected to what follows.[104] Furthermore, as Kirk notes, *ὑγιής* said of a *μῦθος* and meaning something like 'beneficial' is clearly peculiar. It seems as though we have to admit that the word is not actually attested with

[102] See Peters (1980) 208 and (1986) 366. However, the examples are few and not certain. For a criticism of Peters's example see also Weiss (1994) 150 n. 49. The most striking and original example, *στορπάν· τὴν ἀστραπήν* (Hsch.), may now have to be interpreted in a completely different way in the light of Myc. *to-pa-po-ro* on the new tablets from Thebes. In any event, a tabuistic or onomatopoeic alteration of this lexeme cannot be excluded in view of its semantics.

[103] Weiss (1994) 151.

[104] See *IC* ii. 337.

any certainty in Homer. Reliable attestations do not start before the sixth century in Simonides. The attestations thus do not force us to assume that the word is very old, but this does not help explain its etymology and formation. If we take 'strong' as the basic semantics that would also fit the 'Homeric' attestation, it would be very tempting to compare it to Skt. *ugrá-* 'strong', and *ὑγιής* could contain the Caland form of this adjective + the root for 'to sit', thus **h₂ugi-h₁éh₁s-* 'sitting (i.e. ruling) strong, with might'.

Compounds in *-έτης*

It was pointed out above that of all s-stem compounds only those containing the word for 'year', *ἔτος*, do not conform to the accentuation rule whereby s-stem compounds can only bear the accent on the root if this contains a long vowel. The same compounds also retract the accent even further in the neuter. In Homer, all compounds in *-έτης* have, according to the transmission, the accent on the root or, in the neuter, on the first member: *οἰέτης* 'one year old', *ἑξέτης* 'six years old', and *αὐτόετες* 'in the same year', *τρί-*, *πεντά-*, *ἑξά-*, *ἑπτά-*, *ἐνά-ετες* 'three, five, six, seven, nine years old'. To this can be added Myc. *za-we-te*, later Greek *σῆτες*/*τῆτες* 'this year'. It is evident that the adverbial usage is far more frequent than the adjectival one. Only *οἰέτης* and *ἑξέτης* are used in this way; the former is a *hapax* at *Il.* 2.765, the latter occurs twice in the same book (*Il.* 23.266 and 655). The adverbial usage may thus be the original one. This would then permit a different explanation of the origin of these compounds which would clarify the reason for the irregular accentuation. Prototypically, such compounds may have contained an endingless locative, e.g. **k̂i̯ā-u̯etes* 'in this year'.[105] At some later stage these may have been perceived as neuter accusatives, especially given that acc. and loc. are freely interchangeable in expressions of duration of time, cf. also constructions like *ἐς αἰεί* which may contain a loc. or even a dat. but not an acc. Certainly the second member was no longer understood as a loc. sg. The adjectival usage of these original adverbs is then found in some

[105] It is clear, however, that *k̂i̯ā-* itself is reanalysed from **k̂i-* 'this, here' + **āmer-* 'day', giving **k̂i̯āmeron* > *σήμερον*/*τήμερον* 'today'.

later authors, cf. e.g. εἰναετής in Orph. *L.* 348. The transition to the s-stem adjectives is now complete,[106] and with it the accentuation also regularized.

4.11 SIMPLE S-STEM ADJECTIVES

We have already seen (section 4.2) that there is no comparative data for simple s-stem adjectives, and it is most likely that these arose individually in the respective languages. In Greek, uncompounded sigmatic adjectives exist, but most of them are of late and secondary origin, and they never became productive in any noticeable way. We have also already mentioned that as early as the nineteenth century they were recognized as back-formations from compounds.[107] This is particularly clear in those words that are first used in Hellenistic authors or that are found only in grammarian or lexicographic writing:

(a) ἀγής 'guilty' doubtful in Hipp. *fr.* 94 (*hapax*) < ἐναγής (S.+);
(b) ἀρκής· ταχύς (Hsch.) < ποδάρκης (*Il.*+) which was obviously understood as equal to ποδώκης/πόδας ὠκύς because all of these expressions are the most characteristic epithets of Achilles;
(c) δεύκης or δευκής, perhaps meaning 'sweet' (though glossed in Hsch. as λαμπρόν, ὁμοῖον), which may be read in Nic. *Al.* 328 (v.l. ἐνδευκής) < ἀδευκής (*Od.*+) which was understood as meaning 'bitter';
(d) δρανεῖς· δραστικοί (Hsch.) < ὀλιγοδρανής 'of little might, feeble' (Ar.+);
(e) ἐρευθής 'red' (Strabo+) < ἐνερευθής 'somewhat red' (same author);
(f) ἠνεκής 'bearing onward' (Emp.+ as adverb in -έϛ, -έως, as adj. only in Nic.) < ποδηνεκής 'stretching to the feet', διηνεκής 'moving on, continuous' (*Il.*+);
(g) ἠκες· ὀξύ (Hsch.) < τανυήκης 'with sharp edge' (*Il.*+);
(h) λαμπής 'shining' (Doroth. in *Cat. Cod. Astr.*) < ὑπολαμπής 'of pale lustre' (Hes.+);

[106] In a slightly different way, from another adverbial (and proparoxytone) compound of 'year', equally containing a locative, an adjective is secondarily formed: πέρυσι 'last year', an old word, corresponding to Skt. *parut* 'last year', gives *pe-ru-si-nu-wo* = περυσινός etc. 'last year's' already in Myc. times.

[107] See in particular Parmentier (1889) 131.

(i) *μιγής* 'mixed' (Nic. *fr.* 68.4) < *παμμιγής* 'all-mixed' (A.+);
(j) *ὀφελής* 'advantageous' *POxy.* II 237.8.15 < *ἀνωφελής* (A.+), Myc. *no-pe-re-a*$_2$ 'useless';
(k) *σθενής· ἰσχυρός, καρτερός* (Hsch.) < *ἐρισθενής* 'very strong' (*Il.*+);
(l) *τημελής* 'careful, heedful' (Aglaias+) < *ἀτημελής* 'careless' (E.+);
(m) *ὠλης* 'destroyed' in inscriptions from Roman times, in the formula *ωλης (και) πανωλης/εξωλης* 'destroyed and utterly destroyed' < *πανώλης* 'utterly destroyed' (A.+), *ἐξώλης idem* (Hdt.+).

It is evident that the compound in almost all instances is of much greater antiquity than the simple adjective which, moreover, is usually a *hapax legomenon* or of very rare and partly dubious attestation. The most telling proof that these simple adjectives are indeed secondarily derived from the compounds is found in one of the very few earlier examples: Emp. 47 uses *ἁγής* [with long *ᾱ*] in a meaning 'pure, holy'. The long vowel shows that this must be a back-formation from *εὐαγής* 'bright, clear', a word well established in philosophical literature, where the vowel lengthening is entirely regular because it is a compound (type *ἄγω* : *στρατ-ηγός*).[108]

A few other cases are not at all certain: the sometimes quoted *βλαβής* 'damaged' seems to be a ghost word, *μενοινής· πρόθυμος, φροντιστής* (Hsch.) and *αἰθής* in Cratin. 88 have almost certainly to be read as *μενοινῆς, αἰθῆς* < *-ήεις* or as nominal gen. sg. forms. Finally, the gloss *ἤρης· ἄφρων* (Hsch.) is entirely unclear.

In Homer, simple s-stem adjectives are exceedingly rare. Only the following cases, none of which is certain, can be quoted:

(a) *φραδής* 'wise' is a *hapax* at *Il.* 24.354:

φράζεο Δαρδανίδη· φραδέος νόου ἔργα τέτυκται

Be careful, Priam; here stands the task for a wary mind.

The line is young (cf. the lack of a reflex of the digamma in *ἔργα*) and clearly emphatic: *φράζεο . . . φραδέος*, which led to the *ad hoc*

[108] See Dihle (1984) for an in-depth discussion of this word.

creation of this *hapax* as a back-formation from the frequent *ἀφραδής* 'foolish', *ἀριφραδής* 'very wise'.

(b) The alleged *ἐλεγχέες* 'pitiful' at *Il.* 4.242 and *Il.* 24.239 has to be read as *ἐλέγχεα*(< *ἔλεγχος*) and is a post-Homeric 'correction' in order to avoid a hiatus.[109]

(c) At *Il.* 11.754 we find a sequence commonly rendered as:

τόφρα γὰρ οὖν ἐπόμεσθα διὰ σπιδέος πεδίοιο

Thus for so long did we follow them through the (?) plain

This sequence is ill-understood. If it is to be segmented as *δι' ἀσπιδεος πεδίοιο*[110] then we might not be dealing with a simple adjective at all. Fraenkel argued for a compound *ἀ-* (<**sm̥-*) *σπιδής* 'mit Geräumigkeit versehen' and compared this to *σπίδιον μῆκος ὁδοῦ* (A. *fr.* 378) which in antiquity was understood as meaning something like 'the vast size of the road'. But even if Fraenkel should be wrong, it is entirely conceivable that we are dealing with a u-stem adjective.[111] This is quite a likely proposition, as another Caland adjective formation is found in *σπιδνόν· πυκνόν*, *συνεχές*, *πεπηγός* (Hsch.).

(d) *ψευδής* 'lying, lie' has been read in *Il.* 4.235:

οὐ γὰρ ἐπὶ ψευδέσσι πατὴρ Ζεὺς ἔσσετ' ἀρωγός

For father Zeus will not be a helper to the liars/lies.

The line is clearly cumbersome. *ἀρωγός* 'helper' is always construed with a dative of the person in Homer, cf. e.g. *Il.* 8.205 *Δαναοῖσιν ἀρωγοί*, never with an abstract noun. For this reason, Leumann proposed to read *ἐπιψευδής* 'lying'[112] which may be right but would be a *hapax*. It seems thus that *ἀρωγός* is not construed with a dative here, and Fraenkel, following the scholiast Hermappias, read *ἐπὶ ψεύδεσσι* 'im Falle von Lügen' here which is the most likely reading.[113] *ψευδής* is, of course, a frequent adjective later on and, as was argued by Wackernagel, a back-formation from *ἀψευδής* 'honest'

[109] See Bechtel (1914) 119.

[110] See Fraenkel (1910) 206.

[111] See de Lamberterie (1990) 249 ff. The suggestion goes back to Wackernagel (1897) 15.

[112] See Leumann (1950) 136 f.

[113] Fraenkel (1910) 203, *pace* Peters (1984) 250.

(in Homer attested as the name of a Nereid at *Il.* 18.46) and φιλοψευδής 'loving lies'. But it is certainly possible that the creation of ψευδής was also helped by the existence of an s-stem antonym, ἀληθής. For in Hesiod, the first writer perhaps to use this adjective, we find 'lies' and 'truth' poignantly collocated at *Th.* 27f.:

ἴδμεν ψεύδεα πολλὰ λέγειν ἐτύμοισιν ὁμοῖα,
ἴδμεν δ' εὖτ' ἐθέλωμεν ἀληθέα γηρύσασθαι.

We know how to tell many lies, resembling reality,
But we also know how to proclaim the truth if we want to.

Later on at 229 in the very same poem, ψευδής may occur for the first time in ψευδέας τε Λόγους.[114] That this adjective should be one of the very first ones to be created is not surprising. The noun ψεῦδος is often used almost like an adjective in a predicative position, cf. *Il.* 2.349:

γνώμεναι εἴ τε ψεῦδος ὑπόσχεσις εἴ τε καὶ οὐκί.

[Before they would] know whether the promise was false or not.

Even Plato uses an expression like ψεῦδος ὄνομα 'false name, false designation' (*Polit.* 281a13), and the need to adjectivize this from a formal point of view is obvious. Finally, the frequent use of the word in the pl., cf. ψεύδεα βουλεύσας 'having given lying counsel' (*Od.* 14. 295) and the passage from Hesiod quoted above may also have helped the creation of the simple adjective.

Other Classical formations are very rare. σαφής 'clear, certain' is first attested as a neuter form used adverbially in *h. Merc.* 208 σαφὲς δ' οὐκ οἶδα 'I do not know for certain' and will have been created after ἀσαφής (S.+). The history of this family of words is not clear but it is evident that they are in a 'Caland system'; Homer only uses the adverb σάφα. The only two simple adjectives of Classical Greek that cannot be shown to be back-formations from compounds are πλήρης 'full' (A.+) and τρανής 'clear, distinct' (S.+). The formation of the latter is unclear but it may well have been formed with the secondary suffix -ᾱνης which is also found in πρηνής, σαφηνής.[115] πλήρης seems to have acquired its sigmatic inflection secondarily.

[114] However, West opts for Ψεύδεα τε Λόγους τε but see again Fraenkel (1910) 203 for objections to this reading.

[115] See Blanc (1985) 255.

Behind it almost certainly lies an adj. *πληρός, cf. Lat. *plērus* 'full'. This may have become an s-stem adjective perhaps under the influence of the frequent and early compounds in -πληθής, cf. περιπληθής 'full of people', *Od.*+.

In sum, then, the simple adjectives in -ης form a very small group compared to the more than 6,000 compound adjectives. A close examination of the words concerned and their attestation shows that none of them is inherited; they do not with any certainty occur in Homer. What little there is in Classical and later Greek mostly owes its existence to regularly formed compound adjectives. It is interesting to see that compounds can form the derivational basis for simple words; these retain their stem class, a back-formation of, say, a u-stem adjective from an s-stem compound is never to be found. What is also clear is that none of the simple s-stem adjectives in Greek can be used to make a case for the existence of such formations in the parent language.

4.12 COMPETING FORMATIONS: -ης AND -το-

We saw in section 4.7 that sigmatic adjectives could be derived directly from verbs or verbal roots; mostly, such formations have intransitive or passive semantics, and a secondary but close connection with the aorist in -ην as well as other stative formations has been established. The deverbative compounds thus had the semantics of a verbal adjective, and here in particular, but also in denominal formations, -ης found itself to a certain degree in competition with the suffix -το- which had already been used for a very long time in compounds, especially privative ones. This point can be illustrated easily with some Myc. data: a number of (sigmatic) compounds in *-o-we* 'ear = handle' with a numeral as a first member are found, e.g. *o-wo-we* 'with a single (οἶος) handle', *ti-ri-jo-we* 'with three handles'; only the negative can have the form *a-no-wo-to* (alongside *a-no-we*) 'without handles'. Otherwise, a semantic or syntactic distinction hardly ever occurs:[116] ἐλεόθρεπτος 'raised in

[116] See, however, Blanc (1987) 224 who draws attention to active -εχής, -φερής in συνεχής 'continuous', καταφερής 'descending' and passive -εκτος, -φερτος as in ἄνεκτος 'supportable', ἄφερτος 'intolerable'.

the marshes', for example, is explained as *ἑλοτρεφής* in Hsch. Often, s-stem and verbal adjective stand side by side:[117] Homer has *εὔτυκτος* 'well-made' as well as *νεοτευχής* 'newly made' and *ἄπυστος* as well as *ἀπευθής* 'unknown' (the former can also mean 'without learning'). A few remarks should be made about the chronological order of the attestations. In Myc., compositional *-το-* is almost entirely restricted to privative compounds and compounds with a prepositional first member. In Homer, this is still the predominant situation, and here, existing negative sigmatic compounds can even be extended with *-το-*, cf. *ἀκήδεστος* 'uncared for';[118] on the other hand, compounds in *-το-* with a nominal first member are still very rare and only become frequent in Classical Greek. The overall situation is thus one of 'give and take': first *-ης* creeps into the domain of *-το-* (*a-no-we*), then later on *-το-* gains ground at the expense of *-ης* (*ἐλεόθρεπτος*). For several roots, the *-ης* forms were ultimately unsuccessful: *-πλυνής* 'washed' is limited to Homeric *εὐπλυνής* 'well-washed', in later Greek only *-πλυτος* is attested, and this is already seen in Hom. *νεόπλυτος* 'newly washed'.

Stylistic differences may be noticeable too. In general, *-ης* may have a slight preference for poetry while forms in *-το-* occur both in poetry and prose: *ἀελπής* 'unhoped for' occurs in Homer, *ἄελπτος* in Hes., Hdt. and Hp. But then again *ἀμεμφής* 'blameless' occurs in poetry (A. *Pers.* 168+) but also in late prose (Plutarch) and even on a prose inscription from Melos (*IG* XII 3, 1075) so that this should be regarded as no more than a tendency. That poetry should exploit both formations for metrical reasons is unsurprising: Blanc has shown that *-το-* renders a spondaic, *-ης* a dactylic rhyme, cf. *πάντες ἐϋπλεκέες* (*Il.* 2. 449) vs. *σειρὰς τ' εὐπλέκτους* (*Il.* 23. 115).[119]

It is also interesting to observe that some roots form only one or the other derivative. In the case of *δέω* 'bind' we always find *-δετος*, clearly in order to avoid homophony with *-δεής* from the root for 'fear', cf. *δέδια*, *δείδω*, *δέος*, e.g. *ἀδεής* 'fearless' vs. *μελάνδετος* 'bound with black (iron)', both Hom.+. But *δέω*, *δέομαι* 'lack, want, need' also produces compounds in *-δεής*, leading to confusion.

[117] See also the useful list in Blanc (1987) 226.
[118] See Risch (1974) 19 f.
[119] See Blanc (1987) 227.

While in Homer we find -δευής in ἐπιδευής 'in need of', the sense of ὑπερδεής at *Il.* 17. 330 has been debated since antiquity:

ὡς δὴ ἴδον ἀνέρας ἄλλους
κάρτεϊ τε σθένεϊ τε πεποιθότας ἠνορέῃ τε
πλήθεϊ τε σφετέρῳ καὶ ὑπερδέα δῆμον ἔχοντας.

Since I have seen other men, relying on their own strength and might and manlihood as well as their number, and guiding the people inferior in number/beyond fear.[120]

Later examples like ἐνδεής 'lacking' (S.+) illustrate the room for confusion well, and occasionally it is difficult to decide whether the word is supposed to mean 'being in need' or 'being fearful'.

This is clearly a special situation, however. Other roots opt for one or other formation, and it is not always clear what the factors governing this choice are. κινέω 'move' and αἱρέω 'take' only form compounds in -κίνητος, -αίρετος, on the other hand we only find -γηθής < γηθέω 'gladden', -δαής from both δαίω 'kindle' and δαῆναι 'learn'. On the whole, -ης is more widely employed here than -το-, probably because of its versatility: -ης can be used in an intransitive/active sense which is not an option for -το- in general.

4.13 COMPOUND ADJECTIVES IN -ης AND COMPOUND VERBS IN -έω

We have already seen that compound adjectives in -ης can serve as the basis for the creation of simple neuter nouns in -ος (type δυσαής > ἄος, see section 2.4) as well as of simple adjectives in -ης (type ποδάρκης > ἀρκής, see section 4.11) In this concluding section, I want to concentrate on a different phenomenon, namely the secondary derivation of compound verbs directly from compound adjectives in -ης, thus providing once again evidence for a derivational cycle.

Once the deverbative type of sigmatic compounds had been established, the possibility that simple verbs were derived from

[120] See *IC* v. 94 for discussion. There also exists a conjecture ὑπὲρ Δία here which may conceivably be correct.

these adjectives—just like simple nouns and adjectives of the types *ἄος* and *ἀρκής*—must *a priori* be reckoned with. The case is not always easy to prove but some powerful evidence has been proposed.[121] One of the most striking examples is the post-Homeric verb *ὠφελέω* 'to be useful'. As Tucker points out, the long initial vowel is understandable only if we assume that it was back-formed from earlier and in origin denominal compounds like *ἀνωφελής* 'useless' < *ὄφελος*.

More striking still are the instances where entire compound verbs seem to have been created on this basis. Curiously, it seems as though there were two different types and perhaps chronological layers of this phenomenon to be identified in Homer. Tucker herself draws attention to *ἀβάκησαν* 'they were speechless', *ἀμέλησε* 'he was neglectful of', *κατήφησαν* 'they were downcast', *ἀδήσειεν* 'he should be sated with' and *ἀδηκότες* 'sated' and *ἀπίθησε* 'he disobeyed'.[122] None of these formations occurs in the present stem, and we find predominantly finite forms. All seem to be derived from deverbative s-stem compounds.

But this does not constitute the sum total of the evidence. Beside *δυσμενής* 'evil-minded', a pres. part. nom. sg. masc. occurs as *δυσμενέων* (*Od.*). Similarly, beside the regular *ὑπερμενής* 'exceedingly mighty' (Zeus) (*Il.*+), a phrase *ἄνδρες ὑπερμενέοντες* is attested at *Od.* 19.62. Alongside *ἀφραδής* 'reckless' (*Il.*+) a pres. part. dat. sg. masc. *ἀφραδέοντι* is found at *Il.* 9. 32, a 3rd pl. *ἀφραδέουσι* at Od. 7. 294. Beside *οἰνοβαρής* (*Il.* 1. 225), *οἰνοβαρείων* is attested (*Od.* 9. 74+). According to Tucker, the second element of this compound is derived from a stative verb and we concluded above that she may well be right. However, *οἰνοβαρείων* does not fit well with her theory since it is a present-stem participle and follows the *τελέω*/*τελείω* type of inflection. From *ἄφενος* 'wealth' we find *εὐηφενής* 'very wealthy'; a form *εὐηφενέοντα* is attested in an epic fragment (*POxy.* XV 1794.13) and in this context we may add Hom. *ὑπερηφανέων* 'exceedingly

[121] See Tucker (1990) 62 ff.

[122] Tucker (1990) 69 f. She also includes *στρεφεδίνηθεν* 'they rolled' (said of eyes) here but as this is almost certainly a derivative of an ā-stem compound **στρεφεδίνης* < *δίνη* 'whirling, eddy' it is of a somewhat different nature, even though the derivational process is, of course, identical.

wealthy, arrogant' which probably stands for **ὑπερηφενέων*.[123] Beside *ἀκηδής* 'careless' we find both *ἀκήδεστος* (*Il.* 6.60) and *ἀκήδεσεν* (*Il.* 14.427). *περισθενής* 'exceedingly strong' is first attested in Pi. *N.* 3.16 but it underlies nom. sg. masc. *περισθενέων* found at *Od.* 22. 368. Compounds in *-σθενής* are, of course, Homeric, cf. *εὐρυσθενής* 'or far extended might', said of Poseidon (*Il.* 7.455+). Likewise, *ὀλιγοδρανής* 'of little might, feeble' is first attested in Ar. *Av.* 686, the derived *ὀλιγοδρανέων* is Homeric (*Il.* 15.246+). The basis for *-δρανής* is hard to determine. A noun *δράνος* (*δρανός* according to the codices) is found in Hsch. and glossed as *ἔργον, πρᾶξις, ὄργανον, ἄγαλμα, κατασκεύασμα, δύναμις*; a verb *δραίνω* only occurs at *Il.* 10. 96 (and in Herodian), and given the chronology of attestations it may be that the noun itself is derived from the compound and that this is deverbative in nature. If this is right, then *ὀλιγοδρανέων* would point to a transitive-active sigmatic compound, a type that is very rare (type *θυμοδακής*, see section 4.7), but it would have the a-vocalism characteristic for these formations. A similar word *ὀλιγηπελέων* occurs from the Iliad onward and also seems to mean 'feeble'. This too looks like a derivative from a sigmatic compound; but the base form *ὀλιγηπελής* does not occur until *AP* and Opp. The basis for this compound is uncertain.[124] Beside *γυναιμανής* 'mad for women' (*Il.*+), *γυναιμανέων* occurs in Q.Smyr. 1.735+, and finally in Homer we find *θυμηγερέων* (*Od.* 7.283) 'composed' for which a sigmatic form, by chance, does not exist. The compound renders the phrase *θυμὸς ἀγέρθη* 'the mind recovered/composed itself'.

The situation with these forms is quite the reverse of Tucker's examples. Here, we almost only have participles attested, and they belong to the present stem. Where finite forms are attested, they occur later than the participle (*ἀφραδέων Il.*, *ἀφραδέω Od.*) or owe their existence to additional forms (*ἀκηδής* > *ἀκήδεστος* from which *ἀκηδέω* could easily be formed). It seems clear that the participles, semantically exactly equivalent to the underlying compounds, were created first as convenient metrical alternatives.

[123] See Risch (1974) 308.

[124] Düntzer (1864) reconstructed a noun **ἄπελος* 'power' which he compared to OS *abal* 'power'.

A further difference between this group and Tucker's examples is that her formations can be accompanied by corresponding simple verbs (*μέλω*, *μελήσω*, *πιθήσας*) which is never the case in the second group. There seems to be no reason not to agree with Risch that 'der Weg von *πίθησας* (*πιθήσω*) zu *ἀπίθησα* (*ἀπιθήσω*) führte wohl über *ἀπιθήσας*'[125]—note again the central role of the participle. In the group under discussion, such simple verbs are not attested. The exception here is *οἰνοβαρείων* for which the simple verb *βαρέω* does, of course, exist, but it is precisely the present stem that is untypical here and, as Tucker has demonstrated, far less common that the aoristic stem *βαρησ-*.

Therefore, in origin we are dealing with poetic formations, first restricted to the present stem participle. Finite forms then slowly follow suit; we find *ἀφραδέουσι* and *ἀκήδεσε* already in Homer. After Homer, the phenomenon gains some ground but remains a poetic feature. Already Theognis 503 uses *οἰνοβαρέω κεφαλήν* 'I am drunk in my head', finite *ὀλιγοδρανέω* is found in Athen. Soph. *Deipn.* 1.142 etc. Clearly all of these are developments of the original Homeric usage and partly overt epic reminiscences. But they underline that even the most complex and artifical Greek word was taken seriously and exploited by those that followed the great poet.

[125] Risch (1974) 181.

Epilogue: Combining the Threads

After these long and detailed considerations it is now time to sum up and bring together the results. The overall aim of this study was to determine the morphological and semantic characteristics of the various sigmatic formations, while accounting for their development within Greek and from reconstructed PIE into Greek. None of the suffixes involved could be studied in isolation, and to this end the consideration of their mutual interaction as well as of the connection between them and morphologically different but semantically close or equivalent formations was necessary. Hence different sections of this book are concerned, e.g., with the secondary derivation of neuter nouns from sigmatic adjectives (e.g. δράκος from εὐδρακής) or the derivational and semantic contrast between τάχος and βραδύτης or μῆκος and βραχύτης. The choice of non-sigmatic suffixes that have been studied has not been arbitrary. With their help it has been possible to define rules of derivation based either on morphological or on semantic considerations; or indeed on both, and this removes a great deal of arbitrariness. In a wider context, this kind of observation inevitably leads to a reassessment of 'Caland's Law' for Greek and of the significance of Greek s-stems in the so-called 'Caland systems'.

The s-stem nouns in -ος (type γένος) are numerous with some 400 nouns being attested. It is generally claimed that they constitute an unproductive category. The examination undertaken here leads to a slight modification of this view. It is clear, for example, that a certain number of verbal s-stem nouns are in fact new and appear at various stages during the attested history of Greek. These can be shown to be secondarily derived from compound adjectives (type δράκος < εὐδρακής < ἔδρακον). Neuter nouns traditionally formed the basis for compound adjectives in -ης. Thus, δράκος was easily formed on the basis of a proportion εὐμενής : μένος = εὐδρακής : X, X = δράκος. This is all the more plausible as it is also shown that compound adjectives form the starting point for simple adjectives in -ης (type ψευδής) as well as for certain compound verbs (type ἀφραδέω) and even some simple verbs (type ὠφελέω). The distribution and frequency of these secondary s-stem nouns varies

considerably. Some, like πάθος, are attested early and establish themselves firmly in the language while others, like φλέγος, are idiolectal creations of a single author and often do not appear before the Hellenistic period. These latter formations in particular are in general the result of a reinterpretation of Homeric compound adjectives. Attempts to relate φλέγος genetically to Skt. *bhargas-*, brought in to prove the PIE age of such formations, do not stand up to proper scrutiny.

From a semantic point of view and as far as their derivational bases are concerned they do not form a homogeneous class. Most frequently, we find nouns that stand beside verbs (πένθος/πάθος vs. ἔπαθον). These are often described as 'abstract' but in Greek, as in other languages, the meaning has frequently undergone such radical changes that this term is not helpful.[1] *Chaque mot a son histoire*, and this is very clear in the case of the s-stem nouns where 'abstract' nouns like γένος 'origin' occur just like 'concrete' ones such as δάος 'torch'. Some nouns stand beside stative or intransitive verbs (ῥῖγος : ῥίγησα), but clearly active formations (δάκος 'bite; biting beast' : δάκνω) also occur. Even if it were really possible to categorize the PIE ancestor of each Greek s-stem noun—if the word is inherited—it could not help to make any predictions about its actual semantics. δάκος is a good case in point as it can be an action noun meaning bite as well as a concrete noun, denoting a biting animal. Attempts to find a general, all-encompassing semantic nucleus for all of these nouns can be deemed to have failed. This is true in particular for theories that regard s-stem nouns as conveying exterior forces and that in this sense they can be contrasted with formations in -μα. Rather, it is arguably the case that the difference between the two types of formations is first of all a question of productivity, tied to chronological and then stylistic factors. A great number of neuter nouns in -μα are neologisms of tragic poetry and are confined to this genre. But these nouns also seem capable of a more individualizing and singulative meaning than their s-stem counterparts, especially in philosophical language. It is not surprising, then, that nouns in -μα are used in the plural more commonly than the s-stem nouns.

[1] For the various mechanisms and syntactic reasons for the development see Stüber (2002) 217 ff.

Somewhat more easily defined is the second group of s-stem nouns, those that stand beside Caland-type adjectives, usually adjectives in *-υς* and *-ρος* (*τάχος* : *ταχύς*, *πλάτος* : *πλατύς*, *μῆκος* : *μακρός*). Here, morphology and semantics are intertwined particularly closely, for not every adjective of this type can have a corresponding s-stem noun beside it. Such nouns can only be formed if they refer to a physical quality that can be expressed neutrally. In English, when measuring an object we can refer to its *length* even if it is not an object perceived as long. Conversely, we cannot speak of shortness for long objects. In Greek this has a major impact on word formation: *μῆκος* is a regular formation but *βράχος* 'shortness' is unacceptable, the derivation yields *βραχύτης* instead. It is not inconceivable that this distinction goes back to the parent language in view of Latin pairs like *longitūdō* : *brevitās*, *magnitūdō* : *parvitās*[2] but more work needs to be done on other Indo-European languages here. When *βράχος* does finally come into existence, it is the result of a reinterpretation and the working of an analogical process; its semantics ('shallows') are also specialized and cannot be described as the result of a simple nominalization. *μῆκος* and *βράχος* cannot be put on a par, and certainly it would be wrong to claim that *βράχος* and many other s-stem nouns go back to PIE times or even continue inherited mechanisms of word formation.

If we call *βάρος* a nominalization of *βαρύς* and thus a derivative from it, then we have to admit on a formal level that *βάρος* is not overtly derived from the adjective. One could circumvent this by advocating a deletion rule of *-υ-*, of course. The problems really begin on a semantic level. We have seen that the semantics of *βάρος* are, in a sense, wider than those of *βαρύς* which they totally encompass. But the semantic idiosyncrasy in itself is systematic and predictable.

Turning to linguistic prehistory, it would appear that neuter s-stem nouns in general followed the proterodynamic inflectional pattern. However, it has also been claimed that s-stem nouns played a pivotal role in 'Narten systems' where the lengthened grade alternates with the full grade in circumstances where full vs. zero grade would be expected. According to Schindler, such ablaut behaviour was

[2] See Meißner (1998*a*) for further discussion.

typical of particular roots rather than of morphological categories. It is then not immediately evident why, if this unusual ablaut behaviour is a problem for the root rather than the suffix, the morphological category of s-stem nouns in particular should show this type of ablaut. As a matter of fact, the Greek evidence does not lend much support to Narten-type s-stems. For two of the formations in question, constituting half of the available evidence, no cognates are attested outside Greek and that they should continue PIE formations is highly questionable. To make matters worse, in no case do we find support for such an ablaut behaviour within the same paradigm. Instead, the formations with a lengthened grade are semantically distinguished from those with a full grade. A case-by-case examination shows that either the lengthened or the full-grade form is later, and this means postulating inner-Greek creations. If the evidence is nevertheless accepted, a phonological explanation for Narten ablaut is proposed for the first time: a nom. **med-s* > **mēs* can have contrasted with a gen. **med-es-os* where the root vocalism was levelled at a very early stage to avoid the problematic and unwelcome *samprasāraṇa* ablaut. The nom. can then have been remodelled to make clearer both the root and the suffix, resulting in **mēdos*. But it is difficult to advance beyond linguistic algebra here.

Much in the same way, the similar alternation full grade : zero grade in some deverbative and deadjectival s-stem nouns (type *πένθος* : *πάθος*, *θέρσος* : *θάρσος*/*θράσος*) can also be shown not to continue an old paradigmatic ablaut pattern but to have been the result of inner-Greek analogical changes.

The neuter nouns in *-ας* form a much smaller group. Of the *c.*30 nouns, only one, *κρέας*, appears to be inherited, with *κέρας* also continuing some old morphology. Within Greek, these nouns behave much like a relic class and are subject to various remodellings. Yet in pre-historic Greek they appear to have formed a category strong enough to absorb a number of loanwords. At a later stage, *-ας* was understood as a marker of an archaic formation, and in poetry regular neuter nouns in *-ος* are occasionally given a more archaic appearance through the secondary introduction of this rare word termination.

A similar problem occurs in the case of the animate s-stem nouns like *ἠώς*, *γέλως*. Many of these formations have no established or

plausible etymology, and some may be loanwords. It is likely that at some earlier stage this class too had a certain level of productivity although the number of words in this group is relatively small. In historically attested Greek, their fate is curious. The masculine nouns like *γέλως* acquire a dental inflection, the beginnings of which are visible as early as in Homer. The two feminine nouns of this class, *ἠώς* and *αἰδώς* resist this trend entirely. It is suggested that this happened because they were both morphologically and semantically akin to nouns in *-ώ*, and *ἠώς* may have been influenced by *ἠχώ* and *αἰδώς* by *φειδώ*.

The origin of this group of words is not entirely clear. The word for 'dawn' was an animate and more specifically feminine noun already in the parent language. There is no reason to assume that it ever was otherwise. The word for 'moon, month' by contrast was masculine, and again it is likely that this had always been the case. For the rest, they look like inner-Greek creations, and they will have been formed as masculine or feminine words. In no case is a neuter noun in *-ος* attested alongside a noun in *-ως*, and no noun in *-ως* is neuter; while the existence of collective formations in **-ōs* or, less likely, **-ēs* is undeniable, as witnessed most clearly by the Av. nom. pl. ending *-å̊*, none of our Greek nouns has anything to do with this with any certainty. With regard to the inflectional pattern, nouns in **-ōs* seem to have been holokinetic in origin. But again one needs to be careful when evaluating the evidence: *αἰδώς* has a compound *ἀναιδής* and from this it has been inferred that *αἰδώς* is either a collective formation of a neuter noun **h₂éi̯sd-os* not found in any language, or that it points to a paradigmatic ablaut alternation *αἰδώς* : **αἰδεσ-* which one could then regard as evidence for a holokinetic inflection. In fact, the compound was created as a neuter, using *-ες* as a convenient termination; it in no way proves the existence of an original neuter noun or an earlier paradigmatic ablaut alternation.

This leads right to the formation of s-stem adjectives which form the subject matter of the last substantive chapter. This class is abundantly productive in Greek but a number of issues could be clarified.

The first point concerns the origin and original distribution of this class. It is certain that the s-stem adjectives were a late PIE (possibly minus Hittite) word formation category. Their attestation is limited

to Greek, Indo-Iranian, Armenian and a few scattered remnants in some Ancient Mediterranean languages. It would appear that in the parent language such adjectives were restricted to compounds and were based on neuter s-stem nouns. Such adjectives are commonly said to follow the hysterokinetic accentual pattern but in fact no ablaut or accent alternation to this effect can be adduced to confirm this claim. Rather, it seems that they only began to be formed when accent and ablaut alternations of this kind had ceased to be operative. The so-called ancient weak grade of the root in the compounds is entirely a mirage and the result of a wrong derivation by scholars of such forms. The compounds here reflect the vocalism of the *verbal* forms on which they are based.

Already in pre-historic Greek the situation has thus changed considerably. While the inherited mechanism of derivation remains productive, even at the earliest recoverable Greek stage the s-stem adjectives were no longer dependent on the existence of such nouns. Distinctly verbal semantics have been developed, and it is clear that such adjectives could be derived from verbal roots and be closely associated with certain stem formations.

There are also morphological, semantic, and syntactic restrictions on such formations. These concern the kind of verb that could be used as the basis of such compounds, the meaning conveyed by the compound and the internal syntax of the combined word. More specifically, deverbative s-stem adjectives can be formed from most verbs but not normally from denominal verbs in -*άω*, -*όω* or -*εύω* nor, as a rule, from 'frequentative' verbs in -*o*- + -*έω* (*φορέω*). In many cases it cannot be determined with any certainty whether a given compound is of a denominal or deverbative origin. It is clear that an adjective like *διογενής* was at some point felt to be based on *γενέσθαι* but to explain this shift simply on semantic grounds is insufficient as the morphological *and* semantic characteristics of these adjectives need to be taken into account. It had previously been observed that deverbative adjectives in -*ης* have particularly close ties with stative verbs in -*ησα* and with the so-called strong aorist passive in -*ην*. These observations can be confirmed by a wholesale analysis of the data from Early Greek. If a form in -*ησα* or -*ην* exists, the adjective will in the great majority of instances match their semantics, and the root vocalism is identical in the

majority of instances too. Thus, *ἡμιδαής* 'half-burnt' corresponds morphologically and semantically to *ἐδάην* 'I was burnt' and not to *δάος* 'torch'. As a rule, therefore, adjectives in *-ης* are passive or intransitive-active. Later developments led to a certain semantic (and morphological) expansion but the original state of affairs is still reflected in the internal syntax of compounds. Thus, the first member cannot normally be the accusative complement of the second member: a form like **κουροτρεφής* 'nourishing children' is impossible and in this respect adjectives in *-ης* contrast with the type *κουροτρόφος*. A small number of transitive active s-stem adjectives like *θυμοδακής* 'heart-biting' eventually arise, partly because *-ος* encroached onto the domain of *-ης* (type *θεόπομπος* 'god-sent'), blurring the distinction between the formations, and partly because such adjectives were supported by neuter nouns in *-ος* like *δάκος*.

Throughout the Classical period there is a patent asymmetry between the different derivational bases of s-stem adjectives. Whereas deverbative s-stems can be formed from very many different kinds of verbs or verbal roots, the denominal formations are limited solely to s-stem nouns. The sole, but important, exception to this is that the neuter *-ες* is, rather strikingly, available to create previously ill-understood forms like *εὐρυπυλές* in poetry, and *-εσ-* is also more freely used in comparatives and superlatives (type *εὐμορφέστερος*) in post-Homeric Greek for euphonic and rhythmic reasons. It is only in Hellenistic and Roman Greek that formations like *ἀχαλκής* 'without bronze' from *χαλκός* 'bronze' become acceptable. However, these remain rare and sporadic and arise only when the star of the s-stem adjectives is on the wane again.

Owing to their almost limitless productivity, compound s-stem adjectives made a major impact on other formations, sigmatic and otherwise, as well. For a start, a good number of s-stem nouns are secondarily derived from s-stem adjectives that are, in turn, of deverbative origin: *ἔδρακον* 'I have seen, observed' provides the basis for *εὐδρακής* 'seeing well', from which a noun *δράκος* could eventually be derived. This amounts thus to a veritable reversal of the established pattern of derivation; here we should again remind ourselves that the compound adjectives also give rise to some compound verbs in *-έω* (type *ἀφραδής* → *ἀφραδέω*) and, importantly, that they play a major role in the creation of simple s-stem adjectives of the

type ψευδής. These are not inherited from PIE but represent an inner-Greek and indeed post-Homeric creation. Other contributing factors in this connection are the need to mark as an adjective a word that while formally a noun could semantically serve almost as an adjective, and the reinterpretation of plural forms like ψεύδεα 'false things'.

It appears thus that precisely these adjectives and not the nouns should be regarded as the central type of s-stem formation in Greek from which other types (nouns, simple s-stem adjectives, and verbs) are derivationally dependent. Certainly, they are very firmly established in very many registers, and their productivity has repeatedly been stressed. It is almost ironic then that the adjectives, which were far more numerous than the nouns, died out or were transformed completely, while s-stem nouns, much smaller in number and largely unproductive, survive until the present day. The disappearance of the adjectives can be attributed to a combination of morphological factors, in particular the growing tendency to mark gender overtly in adjectives, combined with the creation of new suffixes and their expansion in Koine Greek, and phonological factors such as a *rapprochement* between the 1st declension and the s-stems on the one hand and itacism on the other which caused the merger of s-stem adjectives and i-stem formations of various sorts in substantial parts of the paradigm.

In a wider context, the conclusions presented here lead to a revised view of the nature of the morphological relationship between the individual s-stem suffixes (from a Greek point of view). The deverbative derivation of compound adjectives shows that what, from a PIE perspective, was one suffix has in Greek developed into two: a nominal one (type γένος) and an adjectival one which is no longer dependent on the noun. As the compound can serve as a basis for simple formations like δράκος we could even speak of a new mini *Suffixverband*.

This inevitably leads to a re-evaluation of 'Caland's Law' and its significance for Greek. Examples like the one just given can be used to argue that the traditional notion of Caland must be broadened. But there are other issues at stake here too. It is clear that the central Caland observation, 'replacement' of a variety of suffixes with compositional *-*i*- is very fragmentary. Even though not all adjectives in

question can be traced back to PIE and one might thus suspect that this replacement became productive, the evidence for this is limited. It is noteworthy that διει- in διει-πετής 'flowing vigourously' (transmitted mostly as διιπετής, probably by association with the many compounds with the dat. of Zeus as the first member) shows a Caland form in what looks very much like a deverbative s-stem adjective, i.e. a word certainly created within Greek; this word stands every chance of being a poetic formation, perhaps analogical after the semantically comparable pair *ἀργρός : ἀργι-. There is no evidence to suggest that what could synchronically be regarded as a morphological replacement ever became a word formation rule of any generality at any stage of Greek.

In another sense, the Caland notion needs to be narrowed, and for this we need to return to our deadjectival nouns in -ος. We have seen that there are significant limitations as to their formation: βράχος and βράδος only come into existence very late in the history of Greek, for very specific reasons, and they are not simple nominalizations of the adjective. Put another way, stems that from a formal point of view look identical such as ταχύς and βραδύς and that share a number of other features such as the formation of the comparative and superlative behave very differently here. Their noun formations are different; τάχος can be called a 'Caland noun' because its formation from ταχύς is entirely regular and predictable. By the same token, βραδύτης could equally be called a 'Caland noun' as its formation is no less predictable. Of course, a noun in -της can be formed from non-Caland adjectives as well. In an number of instances, -τητ- competes with other suffixes (κακότης : κακία) while in others only one type is possible (only νεότης,* νεία being impossible). A semantic differentiation can exist as a tendency: κακότης usually refers to moral baseness, κακία to material badness—but both can be used in the meaning of the other as well. It would then be open to us to group βραδύς and νεός together as, say, 'neo-Caland' adjectives. However, from a formal point of view, this is hardly a profitable route. Rather, it is evident that the nominalization depends on the semantics of the stem concerned. This means, then, that, despite it being described as a closed set, the Caland system of suffixes does not provide direct evidence for derivation being paradigmatic; arguably, our data comes closer to the view that regards a word as a *morpho-*

logical object, constructed out of morphological 'atoms', i.e. in themselves meaningful morphemes, by concatenative processes of affixation and compounding, and only certain atoms combine with others.[3]

For the study of 'Caland's Law' for the parent language, this must be a warning signal. The proof that a word like βράδος is a very late development and must not be projected back into PIE may seem like a trivial correction. That διπετής, too, is hardly old, may be puzzling. In fact it is much worse. In a field constantly beset by the lack of reliable evidence a collection of such trivialities may turn out to matter more than one might expect at first sight. In addition there are the general points indicated above. They all lead to the same fundamental question: what do we actually mean by Caland, i.e. what sort of phenomenon do we think we are reconstructing? It has emerged that in Greek the link between u-stem adjectives and s-stem nouns cannot be defined solely in morphological terms; this has not even been considered for the parent language but it is not clear that we are already in a position to exclude this. More poignantly, it is not clear that we would still speak of a 'Caland system' if it turned out that the different formations that take part in it are in fact nothing other than a collection of particularly old suffixes all with different but well-defined meanings.

Whatever the true state of affairs concerning 'Caland's Law' in PIE, it seems clear that if we want to put the study of word formation in Greek on a more firm footing it is of pivotal importance to start from Greek and not from the parent language. We must be prepared to take into consideration, at the same time, a multitude of different facts and motivations, from entirely regular, productive, and rule-bound formations to bold poetic licences created for effect, by conscious imitation or maybe just owing their existence to metrical necessity. As a result, we must be painfully aware of how much more needs to be done before we can come to a complete understanding of the formation of the nominalization of adjectives. To give just one example, the relationship between -τητ- and -ία still awaits a proper evaluation.

[3] This view was argued for by di Sciullo and Williams (1987).

Our aim has necessarily been limited, but if there is one lesson to be learned here it is a fundamental one: that morphology and semantics are inseparable. As to the details, much more needs to be done. *μέγα βιβλίον, μέγα κακόν* the grammarian Callimachus is supposed to have said, and maybe rightly so. If it follows from this that *μικρὸν βιβλίον, μικρὸν κακόν*—rather than *μέγα καλόν*—then this is all I can hope to have done.

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For abbreviated references see 'Abbreviations, Conventions, and Texts Used' at the beginning of this book.

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