Université de Montréal

Enigmatic *-*nt*-Stems:
An investigation of the secondary -*t*- of the Greek neuter
nouns in *-*men*- and *-*r/n*-

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Résumé

Cette étude vise l'explication de l'origine du -t- secondaire qui s'insère en grec ancien au thème oblique des neutres du type *πρᾶγμα, πράγματος* et *ἧπαρ, ἥπατος*. Après une courte exposition des données grecques, et du contexte indo-européen, les hypothèses déjà proposées sont évaluées, démarche qui nécessite une exposition de l'éventuel suffixe *-mentom*, des thèmes animés en -n- dotés d'un élargissement ou d'un suffixe -t-, du suffixe ablatif en -tos, du -t- final de certains neutres *r/n*-sanscrits, de l'« ergatif » hittite et de l'apophonie des participes en -nt. Certaines questions phonologiques font également l'objet de développements. La plupart des hypothèses déjà formulées pour expliquer les données grecques datent du dix-neuvième siècle; celles-ci sont réévaluées à la lumière de travaux plus récents, notamment sur les classes apophoniques du proto-indo-européen. Sont également prises en compte certaines hypothèses du vingt-et-unième siècle, selon lesquelles les données grecques relèvent d'un problème plus large du proto-indo-européen.

Le présent mémoire ne cherche pas à expliquer l'origine de la flexion *-r/n- ni du suffixe *-nt- du proto-indo-européen. L'auteure se contente de démontrer que la plupart des phénomènes dans d'autres langues, y compris le proto-indo-européen, ne peuvent être directement liés à la situation grecque. Elle conclut que la meilleure explication de la flexion grecque suppose une refonte analogique. Ont servi de modèle les formes neutres du participe actif athématique ainsi que les adjectifs en *-nt- (surtout ceux en *-went-).

Mots-clés : grec ancien, indo-européen, morphologie, neutres, flexion nominale, extension -t-, thèmes en -n-, hétéroclites, thèmes en -nt-, linguistique historique

Abstract

This paper aims to provide an explanation of the secondary *-t-* found in the oblique stem of ancient Greek neuters such as *πρᾶγμα, πράγματος* and *ἧπαρ, ἥπατος.* After a brief overview of the Greek data, and a survey of the relevant nominal classes in Greek and Indo-European, previous hypotheses are evaluated. To this end, several problems of nominal morphology are discussed, including the existence of a PIE suffix *-m(e)ntom*, the secondary *-t-*s of certain animate nouns, the ablatival suffix *-tos*, the Hittite ergative; and the ablaut of neuter active participles. Certain phonological issues are also addressed. Since the majority of hypotheses formulated to explain the secondary *-nt-* inflection of Greek neuters date from the nineteenth century, attempts are made to re-evaluate their conclusions in the light of more recent research, particularly that related to ablaut classes. Also considered are a number of twenty-first century works which purport to explain the Greek data as part of a larger Indo-European phenomenon. This paper makes no attempt, however, to explain the PIE origins of either the *-r/n-*, or of the *-nt-* stems. It concludes that the best explanation of the Greek declensional pattern is to be found in the analogy between stems in *-nt-* and those in *-mn-* or *-r/n-*.

Keywords : Ancient Greek, Indo-European, morphology, nouns, neuter, *-t-*extension, *n*-stems, *nt*-stems, historical linguistics, *r/n*-stems, heteroclitics

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*: reconstructed (not attested) form

>: develops into

<: develops from

→: is replaced by

₀: syllabic consonant

¯: long vowel

˘: short vowel

#: word boundary

=: is identical to

˜: is comparable to

C: any consonant

H: unspecified "laryngeal" consonant

h_1: laryngeal one

h_2: laryngeal two

h_3: laryngeal three

R: any "resonant" i.e. /r, l n m j w/

T: any occlusive

V: any vowel

List of Abbreviations

Abl: ablative

A: accusative

adj: adjective

adv.: adverb

Alb.: Albanian

aor.: aorist

Arm.: Armenian

AV: Atharvaveda

Av.: Avestan

D: dative

f: feminine

cf: *confer*

du.: dual

ft.: future

G: genitive

Gr: Greek

Goth.: Gothic

Gmc: Germanic

Hitt.: Hittite

Hom.: Homeric

I: instrumental

i.e.: *id est*

IE: Indo-European

Il.: Iliad

In.Ir.: Indo-Iranian

Lat.: Latin

Lith.: Lithuanian

L: locative

m.: masculine

ME: Middle English

MHG: Middle High German

NHG: New (Modern) High German

NE: New English

nt.: neuter

N: nominative

n.: noun

OCS: Old Church Slavonic

OE: Old English

OHG: Old High German

OIr.: Old Irish

ON: Old Norse

OSax.: Old Saxon

part.: participle

PIE: Proto-Indo-European

pf.: perfect

pl.: plural

pr.: present

q.v.: *quod vide*

RV: Rgveda

Skt.: Sanksrit

sg.: singular

str.: strong

Toch.: Tocharian

V: vocative

w.: weak

YAv.: Young Avestan

Introduction

To describe a Greek noun such as *ὄνομα, ὀνόματος* as an *n*-stem noun requires, at least from a synchronic standpoint, some explanation. It does not take a great deal of linguistic acumen to notice that there is no -*n*- in the paradigm, nor to observe the quite prominent -*t*-. Nevertheless, the comparison of *ὄνομα* and other similarly declined nouns with the numerous cognates in other IE languages, (e.g. Lat. *nōmen,* Skt. *nāman-,* Goth. *namō,* (G *namins*) OCS *imę* (G *imene*), O Ir. *ainm,* (NA pl *anman*) Arm. *anown*[1] Hitt. *laman*[2]) led researchers very early to the conclusion that the Greek forms must indeed be traced to an original *n*-stem, and to propose various theories to account for its non-appearance in Greek. Bopp, for instance speculated that the *-*n*- of the *-*mn*- suffix developed phonologically into the -*τ*- of *ὄνοματ*- (1833, 719).

Once, however, it was understood that the -*α*- of the suffix was the regular development of interconsonantal **n̥,* and that it was in fact the *τ* that was unexpected[3], the situation became considerably clearer, and explanations were not slow to be proposed. Four main hypotheses were advanced in the late nineteenth century. None can be said to have gained majority approval, but neither have newer suggestions supplanted them. The bulk of this paper, therefore, will be devoted to examining each of these proposals in turn and attempting to determine to what extent the new, and at times also the old, evidence can be said to support or call into question their premises, as well as to determine what modifications might be made to them to bring them in line with a more recent understanding of the history of

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[1] <ow> for /u/. Armenian word internal *m was lenited or lost in certain positions, but the details of the change remain disputed. See (Olsen 1999, 292–93).

[2] In spite, if not because, of the abundance of cognates, the PIE word for "name" is not straightforward to reconstruct. Difficulties include the length of the root vowel (long in Latin and Sanskrit, short in Greek), and the initial laryngeal, which is generally reconstructed as *h₁-. A base form of *h₁neh₃-men- is usually accepted, but the ablaut and accent remains disputed, For an exhaustive collection of forms and literature, see Neri's article, which in the end opts for an acrodynamic neuter singular **h₁nēh₃-mn̥*/ *h₁neh₃-mn̥*, and an amphidynamic collective **h₁éhmn̥*/ *h₁n̥h₃-mn̥-,* as well as an amphidynamic adjective used as the second member of a compound *-*h₁neh₃-mon*/-*h₁n̥h₃-mn*- (2005).

[3] A discovery first published, if not necessarily first made, by Brugmann (1876).

PIE and Greek. Doing this leads naturally to an investigation of a number of morphological issues of Greek and PIE, and a few phonological ones as well, which have possible implications beyond the immediate question of the Greek secondary *t*-stems.

It would be false to suggest that no attention has been given to the question since 1900, or that new solutions have not been proposed. The past two decades have seen an increase in interest in the much broader problem of the interchange of **t-, *n-,* and **nt*-stems in PIE, and a number of these studies have direct implications for the Greek data. This research will therefore be considered as well, but it must be stated at the outset that this paper makes no attempts to account for all secondary *t*-stems, in PIE or even in Greek, still less to propose an ultimate origin of the **nt*-declension or the **-r/n*-declension. It merely attempts to offer a plausible explanation of the origin of the Greek declension types *-μα, -ματος* and *-αρ/ωρ, -ατος.*

Very briefly, the competing theories may be summarised as follows. Theories directly concerned with Greek are:

1) The irregular seeming (ὄνο)-*μα,* *(ὄνο)-*μνος,* was remodelled on the pattern of neuter *μέλι, μέλιτος* to give the more symmetrical paradigm (ὄνο)-*μα,* (ὀνό)-*ματος* (Kieckers 1923).

2) The *t*-stem arose from a fusion of thematic forms in **-m̥tom,* plural **-m̥ta* and athematic forms in **-mn, *-mna* (Brugmann 1879, 221 ff.).

3) The *-t-* originated from a reanalysis of the PIE ablative suffix **-tos* as the genitive singular of a *t*-stem **-t-os* after the genitive assumed the function of the ablative in Greek, allowing a form such as *πράγμα-τος* (ablative singular) could be reinterpreted as *πράγματ-ος* (genitive singular) (Fick 1880b).

4) The *-t-* originated in the NA sg. of *r/n*-stems, where it appears in certain forms such as Skt. *yakr̥t, yaknos,* and was extended throughout the declension, whence it spread to the neuters in *-μα, -ματος* as well (Curtius 1869, 173–75; Fick 1880a).

5) The *-t-* arose by analogy/confusion with the *nt*-stems, either with the active participles, or adjectives in **-ϝεντ-* (Schmidt 1889, 185–88; Kretschmer 1925).

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To these five main competing theories, all of which view the question as a purely morphological matter, should be added the recent suggestion of Anghelina:

6) The appearance of the *-t-* is in fact due to a phonological development, originating in the dative plural, where the sequence *-mn̥-si > *mn̥t-si*, somewhat similarly to the development *anros > ἀνδρός* (Anghelina 2010).

Equally briefly, the theories primarily concerned with PIE which have the most direct implications for the Greek forms include:

1) A proposal that PIE *nt*-stems developed phonologically from an epenthetic *-t-* which was optionally inserted after a final *-n.* This *-t-* could be inserted be after phonemes other than /n/ as well, and would therefore also account for *t*-extensions attached to other stem types. (Oettinger 2001).

2) A variant of Fick's theory above, according to which, however, the conflation of the ablative suffix *-tos* and the genitive *-os* is of PIE date and not confined to Greek.

3) The proposal that PIE *n-, *nt-,* and *t*-stems were originally in complementary distribution to one another, and that phonological developments, and subsequent morphological reorganisation can derive all these stem classes from an original *-nt-* (Olsen 2000, 2004).

Before one begins examining solutions, however, it is worthwhile to take a moment to consider the problem. On one level, it is quite a simple one. Neuter *m(e/o)n-* and *r/n*-stems have developed, without exception, (excluding for the moment those original *r/n*-stems such as *πῦρ, πυρός* which no longer, in Greek, follow a heteroclitic declension at all) an oblique stem in *-ατ-.* This stem is to be found in all historical dialects, beginning with Mycenaean. On another level, the problem is significantly more complicated, involving as it does the intersection of several different stem classes, specifically *n*-stems, and especially neuter *me/on-* and *-r/n*-stems, *-nt*-stems and *-t*-stems, which include not only substantives[4], but also adjectives and participles. The first section of this paper will therefore be devoted to an

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[4] As is common in IE linguistics, this paper uses the term "noun" to refer to both nouns proper and also adjectives. When necessary to distinguish between them, the terms "substantive" and "adjective" are used.

examination of the neuter *n*-stems in IE other languages, and an overview of the relevant Greek data, before embarking on an examination of potential explanations thereof.

Greek Secondary -*ατ*-

Neuter *men*-stems.

Overview

The plural of *schema*, in modern English as in several other European languages, is *schemata*. Similarly, the plural of *stigma* is *stigmata*. The source of this eccentric plural, one is most likely to be told, is ancient Greek. This is, of course, true. It is not true, however, that this was always the case within the prehistory of Greek, and certainly not within Proto-Indo-European[5]. While the Greek forms clearly reflect a stem -*ατ*-, even a cursory comparison with other IE languages serves to demonstrate that this cannot have been the original form of the suffix[6]. Instead, an ablauting suffix *-*men* must be reconstructed.

Table I.   Selected *-*m(e/o)n*- neuters in IE languages

Greek	Latin	Germ	Sanskrit	O. Ir.	Arm.	OCS	Hittite
-ματ-	-men-	-min/ man/ mn-	-m(a)n-	-men-	-mn /man-	-męn-	-m(a)n-
ῥεῦματ-	sēmen	Goth. *samō*[7], *samins,*	manma	sruaimen (NA pl.)	sermn, sermnan	G *semene*	laman,
σπέρματ-	termen, terminis		bhūma	céimmen (NA pl.)	kołmn, -man	G *vremene*	

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[5] In this paper, Proto-Indo-European (PIE) is used to designate the unattested, common ancestor of the Indo-European languages at any stage of its development, and not specifically an early form thereof. PIE here is therefore equivalent to some authors' use of Indo-European. Here, Indo-European will be used of the attested daughter languages, and a further distinction between early and late PIE will be drawn, when necessary (and where possible.) In general, PIE reconstructions based solely on direct comparison will reflect a late stage of PIE, while those based on internal reconstruction are likely to reflect early-PIE, or even, in some authors' terms, pre-PIE. As a result, one must be aware of the potential danger in combining the two, and hence projecting early PIE forms into late PIE, or even into the prehistoric stages of the daughter languages. This issue will be raised again in the discussion of accent ablaut classes.

[6] In addition to the table below, cf. the cognate forms of "name" in the introduction.

[7] The *ō* of the nominative singular is a problem. The expected form would be *-ņ* > *-un*. Jasanoff traces the ending, which is found throughout Germanic, to the old "collective", but the phonology is also complicated. See (Jasanoff 1980, 2002; Ringe 2006, 73, 272)

Neuter *m(e)n-stems in other Indo-European Languages

All the forms in the above table are neuter, or are traceable to original neuters, and all except the Greek form can be regularly derived from an ablauting suffix *-m(e/o)n-. This suffix is, as might be surmised from the preceding examples, is well established for PIE and quite well preserved in most of the attested languages.

Latin

In Latin one finds a number of neuters of the form *-men, -minis,* many of which have clear cognates in other languages (Leumann et al. 1977, 1:369–72; Perrot 1961). The Latin form could be derived either from an e-grade *-men,* or from a zero-grade *-mṇ.* In view of the evidence of other languages, one may safely assume the latter, at least for the NA sg[8]. In Latin, there are frequent doublets of the kind seen in *strāmen, strāmentum.* By and large, there is no clear distinction in meaning or function. The *-men* suffix was not productive in Latin except in the creation of stylistic variants of forms in *-mentum*[9]. Latin also contains a few nouns that seem to continue a simple suffix *-n-,* including *unguen, pollen,* and *gluten.* At least some of these are likely to be secondary, but *unguen* is a more complicated case, as it may very well have cognates in other IE branches, i.e. OHG *ancho,* OIr. *imbe,* all of which could be derived from PIE *$h_2óṇg^w$-ṇ, *$h_2ṇg^wén$-s*[10]. Latin does not have any adjectives in *-men* of the type seen in Greek εὐδαίμων or Vedic *á-brahman-.*

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[8] Sihler wishes to trace most neuter *-n*-stems to hysterokinetic *-on*-stems, in which case the Latin paradigms have undergone considerable refashioning (2008, 298) Surely, it is simpler to assume, as do Schindler and Meier-Brügger, a proterokinetic pattern which is, at least potentially, continued almost directly in the Latin suffix. e.g. strong: *-mén > -men,* weak *-mṇ- > *-men- > -min-* (Schindler 1975b, 323; Meier-Brügger, Fritz, and Mayrhofer 2003, 208)

[10] For the PIE form, and particularly the laryngeal see (Rix and Kümmel 2006; Stüber 1997, 84)

Sanskrit

In Vedic, the neuter *-men* stems appear regularly as -*man*- (NAsg. -*ma*) (Debrunner and Wackernagel, Jakob 1930, III.1:264–77; Wackernagel and Debrunner 1896, II, 2:755–60; MacDonnell 1910, 206–10; Lanman 1880, 522–42). The accent is consistently on the root. In the weak cases, the suffix usually appears as -*man*-, e.g. NA sg. *dhā́ma, dhā́manas,* but forms such as *dhā́mnas* occur as well. Many of the neuter *man*-stems in the RV have obvious cognates, but several others are confined to Indic, e.g. *ádman*- "*Speise*" (v. *ad*- "*essen*") *dárīman*- "*Zerstörung*" (v. *dṛ*- "*bersten*"). Nearly all of these are formed to synchronically-attested verbal roots. The suffix does not appear to be any longer productive by the classical period, but a good many of the older forms continue in use. Only two de-adjectival forms appear, one of which, *váriman*- "*Weite*", Wackernagel considers inherited. There are a number of masculine/neuter doublets such as *bhū́man*- nt. "earth" *bhūmán*- m. "plenty." When used as the second member of an adjectival compound, e.g. *á-brahman*- ""lacking devotion"*,* they may also modify feminines. The dative formed with this suffix, i.e. -*máne* to verbal roots, functions as an infinitive, e.g. *dhámane.*

Germanic

In Proto-Germanic, *n*-stems were the only large class of consonant stems (Ringe 2006, 260, 275–76). All three genders occur, but the neuters are relatively few, and include only three directly inherited from PIE (Jasanoff 2002, 35). The inflection of the masculine and neuter differ only in the NA. The three inherited *n*-stem neuters are Proto-Germanic **namo* "name", (stem **namin-/ *naman-*) **sēmo* "seed" and **ank^wo* "butter". The NA sg. nt. and N m. sg. reflect P Germ. * -*o* < PIE * -*ō* [11]. This ending was preserved in the NA nt. in Gothic, but in West Germanic only in the masculine N sg., with the result that the three inherited neuters became grammatically masculine. The NA sg. of the innovated neuters is difficult to reconstruct because of extensive analogical levelling in the daughter languages. In general, both masculine and neuters seem to have had an oblique sg. stem in *-*in*- , and *-*an*- in the other cases. Inherited neuters show traces of a zero-grade suffix *-*n*- in the plural.

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[11] See note 16.

Only in Old Norse do neuter *n*-stems appear to have been an open class of substantives, containing a number of apparently secondary forms, mostly words for body parts, (Kroonen 2011, 39) which were already frequent among *n*-stems in other Germanic, and indeed IE languages.

A more unusual development took place in the case of *n*-stem adjectives. These became in Germanic the so-called "weak declension" used for the most part only if the adjective is governed by a quantifier, or determiner. However, certain exceptions to this syntactically determined distribution of weak and strong (vowel-stem) forms suggest that the original function of the weak inflection was essentially that of adjective plus definite article, and should be related to the PIE "individualising" suffix *(*e/o*)*n* (Krause 1968, 175; Jasanoff 2002, 40). This phenomenon will be discussed in more detail later, in connection with other applications of that suffix.

Celtic

Neuter *-men-* was continued in both British and Goidelic Celtic. At least in Goidelic, the complex suffix *-smen-* was more productive than the simple suffix. When the neuter gender was lost in MIr., *n*-stem neuters were mostly transferred to the feminine declension, although in some cases they appear as masculine as well. In British, which lost the neuter gender much earlier, they were redistributed between the masculine and the feminine. In Irish, the neuter suffix *-(s)men-* became highly productive in the specialised role of forming verbal nouns such as *maidn* "breaking" to *maidid*, "breaks" or *ceimm* to "*cingid*" "steps" (Welsh *cam.*). Like Latin, Celtic appears to possess a few old neuters with a simple suffix *-n.* These include the aforementioned O Ir. *imbe* "butter," O Cornish *ymen-yn,* as well as OIr. *Gein* (P. de B. Stempel 1999, 102)[12]. Stempel argues that O Ir. preserves traces of suffix ablaut, using these last two forms as examples, and deriving the NA sg from *ηg-$^w \eta$* and *ς'en-η* and the G from *ηgw-én-s*, *ς'en-én-s*.(P. de B. Stempel 1999, 102) Without directly referring to ablaut, Thurneysen argues the same for the *-men* stems: the nasalising palatal final consonant is traceable to *η*, but the genitive sg. *-e* < *-ēs* < *-en-s,* as *η-s* > *-a* (Thurneysen 1946, 212).

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[12]. Thurneysen simply lists *gein* as the verbal noun formed to *ga(i)nithar* « is born » (1946, 463).

Armenian

In Armenian, as in Germanic, *n*-stems make up the largest class of consonant stems (Meillet 1913, 53–58, 1936, 77–81; Schmitt 1981, 101–4; Olsen 1999, 115ff, 839ff). The vast majority of these are formed by specifically Armenian suffixes, of which the most frequently occurring is *-owtʰiwn*. Nonetheless, a few PIE nt. *-men*-stems can be identified with certainty. These include in addition to the already cited *anown, sermn* "Saat, Same," and *ǰermn* "Wärme". Olsen suggests that *ordn* "worm" may also reflect a PIE *-meṇ*-stem cognate with Latin *vermen*. The inherited neuter *n*-stems in Armenian are inflected with *-n* in the NA sg., and *-an* in other cases. Of particular relevance to our topic is the suggestion that this *-an*-reflects *-mṇ*- not *-mn*- and that the syllabic nasal is preserved even before vocalic endings, because in proto-Armenian, as in Greek the suffix may have taken the form *-mṇt*-(R. Stempel 1990; Olsen 1999, 837–38).

Balto-Slavic

In Slavic, PIE nt. *-men*- stems are preserved as consonant stems (Pronk and Steer 2014, 206 ff, 2014). In Baltic, which lost the neuter gender, the sole representatives of the nt. *-men*-stems appears to be Old Prussian *semen,* although masculine stems in *-men* exist. However, Pronk has recently argued that a number of stem-types which form abstract nouns in both Baltic and Slavic can be traced to a neuter *-mn-h₂,* abstract or collective(Pronk and Steer 2014). She further argues that Baltic nouns in *-mē* e.g. Lithuanian *plėnė̃* "membrane" are at least in part direct continuations of neuter *men*-stems with a lengthened grade based on an innovated ablaut pattern.

Hittite

In Hittite, *n*-stems are common, and the majority of them are neuter. Unlike in the other IE languages, however, the suffix *-men*- does not predominate. Anatolian, in opposition to the rest of Indo-European, developed the complex *r/n*-stems into a highly productive category, including several with the suffix *-mer/men*-.

The variation between NAsg. in *-(m)an*, G in *-(m)nas* seen for example in *laman, lamnas,* does not reflect original ablaut, as both forms continue a zero grade. The NA reflects *-n̥# > an#,* while before a vowel, *n* is unchanged.

Greek

In Greek, the suffix neuter suffix *-mn̥-,* in its refashioned form *-ματ-,* became one of the most productive nominal suffixes in the language, and is indeed attested in only slightly altered form from the Mycenaean period to the present surviving in Modern Greek as *-μα, ματου.* While Risch's (1974, 49–51) list of Homeric forms in *-μα* contains seventy-five items, including compounds, Buck and Pedersen's Index (Buck 1945), which includes all words up to the beginning of the Byzantine period, lists approximately 3600. The majority of the nouns in *-μα* can be classified as verbal abstracts, or more specifically as *nomen rei actae,* though as both Chantraine and Buck note, this does not in fact provide a particularly good description of the Homeric set, a few of which are not connected verbal roots at all, and many of which are concrete (Chantraine 1933, 298; Buck 1945, 216). In explaining, in part, the productivity of this class, Buck notes the predilection of both philosophy and drama for neologisms of this type.

In pre-classical and classical Greek, the root usually shows an *e*-grade. During the *koine* period, there is a tendency to shorten the root syllable, leading to newer variants such as *θέμα* for *θήμα. πόμα* rather than *πώμα* occurs once in Pindar, but is subsequently confined to *koine* texts.

The accent is recessive. Already in Homer, one finds a few adjectives in *-μων* next to a substantive in *-μα* e.g. *μνήμων, μνῆμα,* and in this became a productive formation, particularly in the case of compound adjectives, with a second element in *-μων* (Buck 1945, 216).

PIE

An ablauting suffix *-m(e)n-* formed in PIE neuter substantives. One can suppose from its continuation in virtually all branches of IE, that it must have been relatively productive in the parent language, though in fact, its productivity in the individual languages makes it harder

to discern which formations should be taken as inherited. The formal characteristics of the nouns so derived are relatively clear. A proterokinetic accent/ablaut class is generally assumed (Schindler 1975a, 1975b, 263; Meier-Brügger, Fritz, and Mayrhofer 2003, 208; Beekes 2011, 179), with an accented *e*-grade of the root and zero-grade suffix and ending in the strong cases, and a zero-grade root and ending with an accented e-grade suffix in the weak cases. By late PIE, there was already a tendency to generalise the e-grade suffix throughout the paradigm. The zero-grade form of the suffix which appears in the oblique cases in many languages must also be secondary, and post-date the simplification *-CmnV-> *-CnV* (e.g. Vedic. m. G *aśnas* < * *aśmnas*) since such simplification is never found in neuter forms (Schindler 1975b, 264; Cowgill and Mayrhofer 1986, 1:159).

At a basic level, the semantics of the suffix are also fairly straightforward. The majority of the attested forms can be classified as verbal abstracts, though as Buck notes (Buck 1945, 298) several of these must have already taken on a concrete meaning in the parent language, and in a few cases, such as our first example the word for "name," an underlying verbal root is not evident. A number of scholars have attempted to refine this broad characterisation. Haudry developed the term "noms instrumentaux," to describe the neuters in *-men*-since none of the usual categories of primary derivation seemed to cover the group as a whole (Haudry 1971). He did not, however, claim that *men*-stem neuters were the only source of "noms instrumentaux". Perrot, in examining the meaning of the Latin suffix *-men-*, described it as yielding "une substantivation de la notion verbale caracterisée par une représentation moyenne ou subjective du procès" (Perrot 1961, 248). Mawet expanded this observation to apply to the PIE forms, emphasising both their "réprésentation moyenne" and the "charactère résultatif" previously noted by Debrunner (1979, 81). *-men-* also serves in several language groups to generate nominal forms closely related to the verbal system, e.g. the Vedic dative infinitive type *-mane, -μεναι,* and the Celtic verbal nouns represented by OIr. *céimm.*

IE *-r/n*-stems

In addition to the neuter *-men* stems, which are, at least superficially, a relatively straightforward category, IE languages also preserve clear traces of a much more atypical

paradigm, in which the NA sg. is formed with a suffix ending in -*r*, but all other cases are from an *n*-stem. This class is well preserved only in Anatolian, where in fact it has been expanded. It is relatively well attested in Greek, in the form -*r*, -*at*, and to an extent in Indic. In OIr., only one stem is usually considered to show a genuinely heteroclitic inflection, but Lambert makes a case for there being a number of others which, though usually treated as separate stems, are better understood as a single heteroclitic paradigm (Lambert 1978). In other language groups either the -*r*-, or the *n* stem has been levelled throughout the inflection. Proto-Germanic seems to have preserved the original inflection in the case of the word for "water," which can be reconstructed as PGerm. NA sg*watōr* G sg.*watiniz*. Similarly the contrast between the Gothic *n*-stem *fon*, and OE *fȳr*, OHG *fuïr* seems to imply a Proto-Germ *-r/n-* meaning "fire" (Ringe 2006, 276–77). In Latin, the peculiar inflection of *iecur, iecinoris*, (with the several variants thereupon,) and *iter, itineris* must result from the conflation of the two stems.

The apparently archaic, and certainly unusual, character of this inflexion type has fascinated scholars, and numerous theories have been propounded to account for it. The most influential investigation of the question is undoubtedly Benveniste's, *Origines de la formation des noms en indoeuropéen* (Benveniste 1935). However, in many cases, the investigators have been somewhat over enthusiastic in their identification of "heteroclitic" inflections. The simple co-existence of forms containing an -*r*- and -*n*- cannot in and of itself prove an original *-r/n*-stem[13]. In particular, although the relationship of the "Caland" system (which is also archaic, at least in appearance) and the heteroclitic declension is not fully understood, pairs of thematic adjectives in *-ro-* and *-no-* belonging to Caland roots are probably *not* indicators of an original heteroclitic.

Theories concerned with the origin of this declension type tend to trace it to a period of early PIE, or even pre-PIE, before regular system of nominal inflection was established. At this stage, the *-r* would represents the *casus rectus*, and the *-n* the *casus obliquus*, or

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[13] Cf. Probert's comments: "While I do not wish to deny that thematization was available in the Indo-European parent language and may even have been the ultimate origin of certain thematic suffixes such as -*ro*- and -*no*-, it is now generally accepted that Benveniste went too far in postulating athematic pre-forms to account for words that are more easily regarded as derived directly by means of a thematic suffix such as -*ro*- or -*no*- (see e.g. Wachter 1997 esp. 5–6)." (Probert 2006, 12)

alternatively both *-r and *-n would be originally derivational suffixes in a pre-inflexion stage of the language (Benveniste 1935; Pedersen 1893; Adrados 1991). A connection to the locative in -r and in -n is also often adduced: one version being that the oblique stem suffix -en is simply the postposition "in", to which case endings were later added. Furthermore, a possible connection to the alternation between r and the n found in the 3rd person perfect of the verb has been suggested. Sihler seems to be alone in arguing that this may imply an early PIE phonological interchange of /r/ and /n/ (Sihler 2008, 301).

Leaving aside the question of its origin, it has been frequently observed that many of the heteroclitic nouns which can be safely reconstructed for PIE seem to belong to a quite basic level of vocabulary. Friedman's (1999) analysis of PIE words containing only the simple suffix *-r/n- pointed to a preponderance of words for body parts and for divisions of time. Other "core" vocabulary would include "fire" "water," already mentioned.

Alongside the simple *r/n-suffix, complex forms in *-ter/ten-, *-wer/wen-, * -ser/sen- and *-mer/men- are also found, though this latter seems to be relatively rare. In Hittite, it is these complex suffixes which are productive, and highly so (Sihler 2008, 300). The question of accent and ablaut is, unsurprisingly, complicated, but in general Schindler's assumption of three types, a proterokinetic pattern for the singular of those forms in complex suffixes, an acrostatic pattern for the singular of words with simple suffixes, and a holokinetic pattern for the collective/plural is still accepted (Schindler 1975a).

It has usually been assumed ever since Schmidt's masterful investigation (1889), that PIE neuters did not originally form count plurals, but rather a collective, an assumption which accounts among other things for the singular form of the verb in constructions of the τὰ ζῷα τρέχει, an agreement pattern found obligatorily in Hittite, and sometimes in older Indo-Iranian. In the case of *r/n-stems, this collective was, like the NA sg., formed to the r-stem, e.g. ὕδωρ. In some cases, this form developed into a true plural, while in others, as in the case of Greek ὕδωρ, the collective displaced the original singular and a new plural was formed to the oblique stem.

Simple neuter n-stems

As mentioned above, a small number of neuters in IE languages seem to be built with a simple suffix *-n*. Since there are very few correspondences across languages, and the number of such forms is few, several scholars deny the existence of such a class altogether. Others simply argue that it was small. One bold proposal was that of Stüber, who not only argues for the existence of such a class, but that the PIE word for "name", which she analyses as *$h_1$nom-ņ,* belongs to it (Stüber 1997). However, since, apart from Stüber's *$h_1$nom-ņ*, none of the potential candidates for the simple *n*-stems occur in Greek, we need not consider the question further.

Masculine and feminine *n*-stems

Although in the foregoing sections we considered only the neuter n-stems, it must be remembered that PIE possessed numerous animate *n*-stems as well, both masculine and feminine. Some of these words were formed with a simple suffix *-(e/o)n*, others with the suffix *-m(e/o)n*. Greek preserves all of these categories to a greater or lesser degree. *-r/n*-stems are, of course, exclusively neuter. The ablaut pattern of the masculine and femine *n*-stems was hysterokinetic and, as in the case of the *r*-stems, the N sg was characterised by a long vowel in the suffix, and no ending[14]. This resulted, both in PIE and in Greek, in a marked difference between the neuter and animate paradigms.

N-stem adjectives

PIE simple *n*-stem adjectives, if they existed at all, were extremely rare. The Greek ἄρσην -εν "male" may be an inherited form (Sihler 2008). On the other hand, the evidence for adjectives, especially compound adjectives, formed to a stem in *-m(e/o)n*- is more secure. It is reasonable therefore to wonder whether the neuter forms of these adjectives followed the ablaut pattern of the masculine adjectives or that of the neuter substantives. Already in 1933 Pedersen noted that masculine and neuter forms of certain athematic adjectives appeared to differ in their ablaut and accent pattern. Widmer makes a strong argument in favour of an acrostatic paradigm for neuters

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[14] Likely due to PIE loss of the *-s* and compensatory lengthening, i.e. "Szemerényi's Law". In fact, it is possible that the final *-n* was also lost in PIE and analogically restored in Greek. (Cowgill and Mayrhofer 1986, 1:159)

in *-*e/on* as opposed to the animate hysterokinetic pattern, or the collective amphikinetic one (2002, 135–54).

Greek secondary -*t*-stems

Prehistoric "secondary" -*t*-stems

Having thus presented a brief overview of the PIE background of the noun classes with which we are concerned, we must move on to the discussion of the secondary -*t*-*s* of Greek[15]. Classical Greek has a large number of noun types in which the stem finishes with a secondary -*t*-. The majority of these are neuter, but masculine and feminine secondary -*t*-*s* occur as well. The stems did not all acquire this -*t*- at the same time. The two groups with which we are concerned (perhaps better considered as two subgroups of a single category, "neuter *n*-stems") are unique in that the -*t*- is ubiquitous from the earliest records onwards, and except for isolated relics and derived forms, has entirely displaced the earlier *n*-stem. Before considering the prehistory of this -*t*-, it is worth giving at least an overview of its history.

Mycenaean evidence of the -*t*-

In original *mn*-stems, a number of Mycenaean forms such as NA sg. *a-mo,* (/armo/ or, less likely, /harmo/) NA pl. *a-mo-ta*, (/armota/) (cf. ἄρμα, ἄρματα), confirm that the -*t*- was already well established in the second millennium[16]. No forms of the type *armna* occur.

The same situation has been claimed for the **-r/n*-stems, but in this case the Mycenaean evidence for the -*t*- is confined to a single form, D sg. *a-re-pa-te,* i.e. /aleiphatei/. The catch here is that it is far from certain that word in question is a **r/n*-stem. In alphabetic Greek, both ἀλείφαρ and ἀλείφα are attested as the NA sg. of this word. The former appears first in Hesiod, but only at verse ends, where the final -ρ is never metrically guaranteed. Although the word has been frequently hailed as a genuine *r/n*-stem, the process which would

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[15] Of direct relevance to this topic would be the dissertation of Jennifer Forster, *The History of t-stems in Greek* (1967). Unfortunately, it was never published, and there no longer appears to be an copy extant in the UCL library system.

[16] For further examples of this inflection see *Handbuch des mykenischen Griechisch* pp. 242-243 (Bartoněk 2003) For the Mycenaean development **n̥ > o* after labial consonants, see *Grammatik des mykenischen Griechisch* (Risch and Hajnal 2006) pp. 212-213.

replace ἀλείφαρ with the synchronically isolated ἀλείφα remains obscure, and there is a strong case to be made for the -r- being a secondary addition to bring the form into line with an admittedly small, but at least existent, class of nouns (Schwyzer, Georgacas, and Brugmann 1939, 1:520). Szemerényi explains ἀλείφα as a substantivized neuter participle of ἀλείφω (1967, 23–24). This solution is attractive, if one is willing to assume quantitative ablaut of thematic participles. More recently, Nussbaum has interpreted the form as an *mn-stem with a simplification of $*b^hm-> *b^h$ (2014, 234).

To my knowledge, the only indisputable r/n-stem attested in Mycenaean is N sg. *u-do* i.e. /hudor/, I pl. *u-do-pi* (Py 246)[17]. The latter form could represent /udopᵖʰi/ with assimilation of the *-t- >-p- (cf. I pl. *po-pi* "with feet" which must represent /popᵖʰi/ < *pod-bʰi). But it could equally well be read as /udopʰi/, without the secondary -t-. In the absence of direct evidence for the *t*-extension in the *r/n*-stems in Mycenaean, the likelihood of their existence depends on the process by which one believes they were created, and the issue will therefore be discussed further in the context of specific theories.

Greek evidence of the *n-stem

Despite the omnipresence of the -t- in attested forms, there can be no doubt that at one point in the prehistory of Greek, the oldest stratum of these words did at one point end in *-n. Beyond the comparative evidence, which is very strong, Greek itself has preserved traces of the original stem. One finds numerous denominative verbs in -αίνω < *-n̥-ye/o-, formed to -μα neuters and original *r/n-stems, e.g. ὀνομαίνω, ὑδραίνω. Similarly, one finds adjectives in -μων formed to such nouns. In Homer, these adjectives are largely compound, e.g. ἀκύμων beside κῦμα, κύματος. Both -μαίνω, -μων were productive in Greek, and continued to form verbs and adjectives long after the original -n stems which gave rise to them had vanished. One also finds traces of the *-n- in a few isolated forms such as νώνυμος "nameless,

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[17] The interpretation *ka-ra-a-pi* and a number of related forms is an extremely complex one, and outside the scope of this thesis. Nevertheless, it seems fairly certain that the Mycenaean forms do not on any immediate level represent an *r/n*-stem. For a thorough investigation of the issue, see *Head and Horn in Indo-European* (Nussbaum 1986), especially pp. 195ff.

inglorious," (in which the negative prefix *n*- has developed to *v*- before a vowel by regular sound change without the analogical interference seen, for example, in ἀνήδονος. The Homeric nt. pl. βέλεμνα, may be a direct survival of the original inflection NA sg. **belemn̥*, pl. **belemna*, to which a thematic singular βέλεμνον was later created (Schwyzer, Georgacas, and Brugmann 1939, 1:520).

A number of questions also arise as to the actual prehistoric forms from which the attested paradigms developed. Most of these will be discussed in more detail later, but it does not seem out of place to raise them at the outset, even if a solution must wait. Whether the -*t*- appeared at any point in the NA sg., or was confined to the oblique stem, cannot be deduced from the attested forms, since a form **-mn̥t#* would have been simplified to **-mn̥* when all final stops were lost. Once again, therefore, the question cannot be resolved separately from that of the origin of the -*t*-. Even if the -*t*- did not appear in the NA sg., one may wonder if the -*t*-was affixed to the suffix while the syllabic nasal was still in place, so that there did exist at one point a suffix **-mn̥t-* > *-ματ-,* or if, instead, the development **-n̥* > *a* had taken place first. Anghelina points to the unity across dialects of the -*t*-, compared with the dialectal variation apparent in the treatment of syllabic nasals. He argues that the -*t*- must date to Common Greek, while the vocalisation of the syllabic consonants came later (2010).

This view, though logical, rests on an oversimplification of the situation. The beginning of dialectal divergence does not automatically put an end to shared innovation. Indeed, Mycenaean itself provides evidence to justify this statement. Although certain features of Mycenaean, such as the -*o*- vocalism of resonants and the change of **-ti* > *-si*-, preclude its identification with Common Greek (*Urgriechisch*), they also provide direct evidence that a number of changes common to all Greek dialects have not yet taken place (Colvin 2007, 9). These include the loss of intervocalic **y* and the insertion of a -*t*- into the flexion of the perfect active participle. As will be seen later, there may be a case for assuming the nasal was already vocalised at least by the time the dental inflection had become general.

This -*t*- later found its way into a number of other neuter noun classes, such as the two *u*-stems γόνυ *and* δόρυ which already in Homer show extended forms such as δούρατος alongside -*t*-less ones (e.g. δουρός) and the neuter *s*-stems, where, however, the -*ατ*- forms are not attested until post-Homeric Greek.

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Historic secondary -*t*-s[18]

Secondary -*t*-s appearing in Homer

The perfect participle active

In all forms of alphabetic Greek, the masculine and neuter forms of the perfect participle active appear to be based on a suffix -ϝότ- yielding forms such as εἰδώς, εἰδότος. However, the feminine stem, e.g. εἰδυῖα cannot possibly derive from a *t*-stem, and in fact must reflect *-*us-ya.* That the -*t*- of the masculine and neuter is a secondary addition is made relatively certain by its complete absence in Mycenaean. As Szemerényi demonstrated, such a scenario is in fact in better keeping with the comparative evidence of other IE languages, as well as with the Greek data, than was the previously postulated *s/t*-declension (Szemerényi 1967).

Variants with secondary *t*-stems

In other cases, one finds words for which two variants of the stem are attested, one with a -*t*- and one without. In the Homeric epics one finds:

γόνυ, G γουνός, but also γούνατος etc.;

δόρυ G δουρός but also δούρατος etc.;

χρώς, G χροός and χρωτός A χρόα and χρῶτα[19];

καρα, G κρᾱατός, κρᾱατί etc[20].

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[18] For a discussion of all -*t*-stems that first appear during the historical period of Greek, see *Variation with Intrusive -t- in Ancient Greek* (Anghelina 2004).

[19] χρῶτα occurs twice, χρωτός once. All three are in passages Chantraine qualifies as "récents." (1958, 211)

[20] The case of the word for "head" is significantly more complicated, as it is far from certain what the underlying form is, but in any case, the -*t*- cannot be original. On the other hand, one does not find alternative oblique cases without the -*t*-, and it is possible that preceding α may reflect a nasal, so in some ways the word has more in common with the "prehistoric" category. For a thorough discussion of these and related forms, see Nussbaum (1986)

Post-Homeric -*t*-s

   The largest group of neuters to receive a secondary *t*-inflexion in the classical and post-classical period were the set of neuters in -ως and -ας (Buck 1945, 450). Of these, κέρας seems to lead the way, with a genitive plural κεράτων attested in a fragment of Pindar (Meissner 2006, 123).

Night is to day as honey is to blood? Single word analogies

Kieckers' analogy: *μέλι, μέλιτος* : *αἷμα αἵματος*

In a single page note, Kieckers (1923) proposes that forms such as *αἵματος* to *αἷμα,* developed by analogy with *μέλι, μέλιτος* (nt.), where the *-t-* genuinely belongs to the stem, (cf. Goth. *miliþ*). He dates the working of the analogy to proto-Greek, after the loss of final stops. It is not entirely clear, due to the brevity of the article, whether *αἷμα* is merely an arbitrary example, or if Kieckers may be in fact suggesting that the analogy began with *αἷμα,* and spread from that word to the rest of the nouns in *-μα* and from thence to the *r/n*-class as well. If so, *αἷμα* is perhaps chosen as being, like *μέλι,* a dissyllabic name of a liquid, and that his laconic "entsprechend *σώματος usw.*" (184) is intended to suggest that the forms spread first to semantically related words, body parts etc. It is just as likely, perhaps more so, that *αἷμα* is an example chosen more or less at random, and that the point is simply that the *-t-* forms began in neuter *men*-stems on the analogy of neuter *t*-stems and spread from there to the *r/n*-declension.

The weakness of this theory is obvious and has been frequently commented upon, namely, that it depends on assuming that a single word, *μέλι, μέλιτος,* which is unparalleled in its declension, exerted sufficient influence to refashion the whole of a large and productive noun class. Though this is not by any means impossible, and certainly cannot be disproven, it does leave one searching for alternative explanations. Schwyzer, who favours Kieckers' explanation, includes *γάλα, γάλακτος* as a second model (1939, 1:520). Clearly, the analogy is less exact, but "milk" and "honey" together form the entire class of reconstructable original neuter *t*-stems in Greek, so there are not many options available.

Thurneysen's analogy: *νυξ, νυκτός* : *ἦμαρ, ἤματος*

The idea that a single word might be sufficient to influence the entire declension was not, in fact, Kieckers' own. He is merely providing what is, in his view, a more acceptable single-word starting point. His theory is offered as an alternative to Thurneysen's, which suggested that the origin of the *-t-* was to be found in *νύξ, νυκτός* (Thurneysen 1921). Since the *-t-* of the stem no longer appeared in the nominative singular, the endings in this word could

be analysed as -τός, -τί etc. The declension of the heteroclitic ῆμαρ "day" would then have been refashioned to "match" the declension of "night," yielding ἥματος, ἥματι, etc. From ῆμαρ, ἥματος, the -t- then spread to the oblique cases of the other r/n-nouns, and thence to the neuter men-stems as well. To support his argument, Thurneysen offers several examples of words that have altered their inflection patterns based on semantically closely related words. Among other examples, he cites several examples given by other scholars of cases where the form of a word has been influenced by that of another closely related word. Fraenkel (1910) sees parallelism with τὸ φῶς as the explanation for the post-Homeric appearance of τὸ σκότος as a neuter. Schmidt considers the word for "summer" to be originally neuter, as it remained in Old Norse, and attributes the masculine forms found in the other Germanic languages to the influence of the originally masculine "winter" (1889, 207). More directly parallel is the explanation of the ending, as well as the gender, of OHG *tages* by the model of *nahtes* (Grimm 1831, 3:133). But in none of these cases did the influence then spread to other semantically unrelated words of the declension. In fact, it is precisely because the words so influenced have remained somewhat anomalous that the influence can be detected. There may, of course, be similar instances in which the transformation did spread to the rest of the declension, but if so, the starting point has been obscured, and they cannot any longer be adduced as parallels. Also, it could be argued that, despite the close semantic link, ῆμαρ (nt.) and νύξ (f.) differ more widely in form than do the pairs of words that Thurneysen adduces as examples of mutual influence[21].

       Furthermore, the segmentation νυκ-τός etc. proposed by Thurneysen is doubtful. Surely, the endings of the consonantal declension would have been familiar enough units that, however one accounted for the absence of a -t- in the nominative singular, the endings would be kept distinct. This supposition appears to be confirmed by the presence of numerous derivatives in νυκτ- (e.g. νύκτερος, νυκταυγής, νυκτῆμαρ), versus the complete absence of forms built to a root νυκ-. In fact, since the loss of the -t- in the nominative was a purely

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[21] In spite of this, Szemerényi accepts the idea that νυκτός lead to the creation of ἥματος, but does not see this as by any means a complete explanation for the entire class: (1967, 20). Overall, Szemerényi favours the idea that analogies between individual words may gradually accumulate until a new class is formed. See, for example, his explanation of *hibernus* (1959).

phonological development, it is possible that speakers would have been by and large unaware of, or at least uninterested in, the fact that they were not pronouncing the word *νύκτ-ς, though among literate speakers, the spelling would tend to call attention to it.

Given these difficulties, Kieckers' suggestion of *μέλι, μέλιτος* is in many ways a more promising starting point. *μέλι* is neuter, and the *-t-* does properly belong to the stem. Furthermore, although there are (by definition) no nouns in *-μα* which end in an *-i-,* the N sg. does at least end in a vowel. However, *μελι-* has no strong semantic connexion to any of the nouns in *-μα,* and the starting point of the analogy is yet more unmotivated.

Thematic versus athematic (athematic wins)

An alternative explanation is provided by Brugmann (Brugmann 1879, 221 ff.). Brugmann argues that forms such as ὄνομα, ατος point to an originally thematic neuter *ὀνόματον, with a zero-grade suffix *-ματον cognate with Latin -mentum, as in cognomentum, or stramentum. He argues that in Greek, too, there must have originally existed thematic and athematic doublets of the kind seen in Latin cognomen, cognomentum, augmen, augmentum, or segmen, segmentum. Later in Greek, the two paradigms were fused into one. Athematic endings were attached to a stem which had incorporated the -t- of the thematic forms. Brugmann notes that the case endings of the NA and G pl., as well as those of the G and D du., are the same for both the athematic and thematic declensions, and hypothesises that it was in these cases that the merger originally took place. The thematic plural ὀνόματα could as well be interpreted as belonging to a stem ὀνοματ- with NA sg., ὄνομα as from a thematic *ὀνόματον.

This theory has several attractive features. In the first place, it allows one to relate the -t- found in the Greek athematic forms to that found in the stem of closely related cognate forms. It removes the necessity of explaining the entire declensional patterns as the result of analogy with a single word, and it offers a reason why the -t- should have appeared in this particular class of words and not another.

However, several difficulties remain. One criticism that has been levelled at Brugmann's hypothesis is that Greek does not possess any nouns in *-ματον (Anghelina 2010 among others). Brugmann himself, however, acknowledges this fact, and incorporates it into his argument, positing not the mutual influence of two coexisting paradigms, but rather their conflation. The thematic declension would have been entirely replaced by the athematic in the same way as the simple *mn-suffix was replaced by *-mn̥t-.

Another objection is that it would be more natural for the athematic nouns to have been thematicised than vice versa. This is undoubtedly true, as Brugmann himself admits. As an example of a similar "dethematisation", Brugmann points to the fluctuation between dative plurals προβάτοις and πρόβασι, the latter censured by Herodian, as

evidence of a later but similar process whereby the ambiguity of the declension pattern of *πρόβατα* led to the creation of secondary athematic forms. The difficulty of this parallel is the fact that the declension *πρόβατα, πρόβασι* is almost certainly based on the model of *ὀνόματα, ὀνόμασι*. Without such a model, exemplified in a large declensional class, it seems unlikely that the form *πρόβασι* would have been created. Indeed, this is implicit in Herodian's comments, which Brugmann cites:

> ἔτι ἁμαρτάνουσιν οἱ λέγοντες τοῖς πρόβασιν, ὡς ἅρμασι, τὴν δοτικὴν πτῶσιν,
> σφαλλόμενοι τῇ ὁμοιότητι. ὡς γὰρ ἀπὸ τοῦ ἅρματα, τῶν ἁρμάτων, τοῖς
> ἅρμασιν, οὕτως φασὶ καὶ ἀπὸ τοῦ πρόβατα, τῶν προβάτων, τοῖς πρόβασιν,
> ἐννοήσαντες ὅτι ἄνομοιά εἰσιν αὐτῶν τὰ ἑνικά.[22]

A more serious difficulty with Brugmann's explanation, however, is a certain degree of *petitio principii*. Although it is true that several forms of **ὀνόματον* and *ὄνομα* would overlap, this only becomes true once the *-t-* has already been attached to the athematic stem. Once the *-t-* was to be found in both stems, it is very easy to see how any given noun might fluctuate in its declension, or even how one paradigm might replace the other entirely. What is less clear, however, is how the two original paradigms supposed by Brugmann would generate forms such as the attested G sg. *-ματος* in the first place. The paradigm **ὀνόματον, *ὀνομάτου* seems regular, stable and not particularly susceptible to modification, and the *t*-less athematic forms are sufficiently different from it (especially if one reconstructs the phonological simpler *ὄνομα, *ὄνομνος* in place of the "Sievers" type variant G sg. **ὀνόμανος* which Brugmann favours) to be unlikely to exert strong influence on the thematic declension.

Table II.   Brugmann's two overlapping paradigms

	Athematic	Thematic	Attested
NA sg.	*-μα*	**-ματον*	*-μα*
G sg.	**-μ(α)νος*	**-ματου*	*-ματος*
NA pl.	**-μ(α)να*	*-ματα*	*-ματα*
G pl.	**-μ(α)νων*	*-ματων*	*-μάτων*

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[22]   *Αἰλίου Ἡροδιανοῦ περὶ ἡμαρτημένων λέξεων, apud* Brugmann op. cit. p.223.

One can, however, consider the question slightly differently. One can assume not that the thematic stem was remodelled based on the athematic, but that due to phonological developments the oblique cases G sg. *ὄνομνος, D sg. *ὄνομνι etc. no longer appeared clearly related to the NA sg. ὄνομα. The already existing, synonymous, thematic forms, *ὀνόματα, *ὀνομάτων seem to relate at least as well to ὄνομα as do the inherited athematic forms *ὄνομνα, *ὀνομάτων. One can, therefore, imagine them replacing the athematic forms, and a new athematic *t*-stem being created to complete the paradigm. But in order to explain why the *t*-forms of the oblique cases might reasonably be attached to the NA sg., one is forced to return to Kieckers' analogy with the *t*-stems, and to confront the fact that *t*-stems are, in early Greek, very few in number. However, assuming one accepts the possibility of their influence, this then leaves one only with the question of why, of the now-overlapping declensions, the athematic prevailed in the end. Unfortunately, Brugmann does not provide an answer.

In his study of Homeric word formation, Risch essentially recapitulates Brugmann's explanation, (though not without reservations: "Nicht restlos erklart ist im Griech. die Flexion als -ματ-Stamm") (Risch 1974, 49). To Brugmann's observations, Risch adds the fact that the -*t*- of the stem is already present in Mycenaean. He also notes, without giving precise numbers, that leaving aside αἷμα, which for obvious reasons is nearly always singular and occurs very frequently in the Homeric epics, plural forms of these nouns outnumber the singular (1974, 50). The significance of this observation is presumably that, since the G pl. as well as the NA pl. could be derived from singular *-μᾰτον, the forms which might directly continue a thematic declension outnumber those which could not.

The dative plural: < *-μᾰτ-σι or *-μᾰ-σι?

Risch further observes that the dative plural of nouns in -μᾰ is always *-μᾰσι, never *-μᾰσσι < *-μᾰτ-σι, and interprets this fact as evidence that the -*t*- originated in the NA, G pl. i.e. in the cases that overlap with the thematic declension (Risch 1974, 51). Risch is not alone in stressing the absence of forms in *-μᾰσσι. Schwyzer and Brugmann

had already noted the fact and extrapolated from it that that the -*t*- was never affixed to the stem in the D plural (Brugmann 1879; Schwyzer, Georgacas, and Brugmann 1939, 1:522). Despite the weight of authority behind it, this conclusion seems inherently improbable. Whether or not the -*t*- had its origin in the NA, G pl., one would expect that at some point, by the time it had become thoroughly incorporated into the declension, appearing in the D and G sg, as well as in denominative verbs and compounds, the desire for morphological regularity would lead to its incorporation into the D pl. as well.

Furthermore, the evidence against a form **μᾰτ-σι* is not as strong as it might at first appear. In the Attic-Ionic dialects, as in Doric and Northwest Greek, **-μασσι* would be regularly simplified to -*μασι*, and the final form, therefore, is uninformative. In the Aeolic dialects, however, **μᾰτ-σι* should have resulted in **-μασσι*. It is unclear, however, that -**μασσι* is necessarily the form one should expect to find in the Aeolic dialects. Lesbian, Thessalian and Boeotian all have a remodelled dative plural ending **-εσσι,* which is found throughout the athematic declension, with the exception of -*s*-stems (Morpurgo Davies 1976). In the case of the *r/n*- and *μα*-stems, this would result in a dative plural in -(*μ*)*ατεσσι*. This form is entirely absent from Homer. In fact, nouns in -(*μ*)*ατ*- are the only class in which the ending -*εσσι* never occurs (Warncke 1900, 5). Schwyzer is almost certainly right in noting that this distribution is unlikely to be accidental. Following Brugmann, he suggests that the apparent absence of -*t*- in the dative plural shows that it was first affixed to the NA and G pl., where it would overlap with a thematic **-ματον* and only gradually spread to the other cases (1939, 1:522). There is, however, a simpler explanation. Given that the great majority of nouns in -*μα* contain either a long vowel or a diphthong in the root syllable, a dative in -*εσσι* would yield a Cretic (e.g. *δωμᾰ́τεσσι*), inadmissible in hexameter. Indeed, of Risch's list of Homeric -*μα* nouns, only *ὄνομα* (with a lengthened first vowel) would yield an acceptable form: **οὐνομάτεσσι*.

Furthermore, outside of hexameter, dative plurals in -(*μ*)*ατεσσι* are indeed attested. Pindar has several: *σωμάτεσσι* (Pyth. VIII, 80) *παλαιματέσσι* (Pyth. VIII 35) *κυμάτεσσι* (fr. 65, 1) *ὀππάτεσσι,* the last of which is found in Sappho as well. Inscriptions yield several more, e.g. from Delphi *δογμ]άτεσσι* (CID 4:2 400-375), *σαμάτεσσι* (CID 1:9 400-350) *περάτεσσι* (FD III 4:137 c. 321), from Corcyra *ἀρματεσσι* (IG IX,1 694) from

Locris *χρήματεσσι* (IG IX,1 267, 268) and from Larisa *χρειμάτεσσι,* (IG IX,2 513) *γραμμάτεσσι* (Inscr. Gr. Centrale 9,1).

The foregoing attestations are, of course, later than the Homeric epics. However, given that the forms in question not only do not, but could not, appear in hexameter, one cannot argue from their absence in Homer that they are a later creation. Furthermore, there is some indication that such forms were in existence in the Homeric period. This is to be found in *κτεάτεσσι,* which occurs several times in the Iliad and Odyssey, and also in Pindar. The word itself appears only in the dative plural, in the form cited, until the Hellenistic period, when a nominative singular *κτέαρ* appears in poetry. Despite the late attestation of the singular, it seems best to interpret the word as a genuine *r/n*-neuter **κτη-ϝαρ, κτήϝατος,* as do Frisk and Chantraine (Chantraine 1968, 590; Frisk 1991a, 2:32). The nominative/accusative plural *κτέανα* would continue the original *n*-stem, reinterpreted as a thematic form, to which a singular *κτέανον* was subsequently created. The fact that in early Greek, the word appears confined to the plural could in part account for the preservation and reinterpretation of *κτέανα,* since in the absence of a familiar *r*-stem it would not be immediately recognisable as a heteroclitic form. The only other possible singular one might posit for *κτεάτεσσι* would be **κτεάς,* and this possibility is precluded by the fact that no neuter *s*-stems have yet acquired a secondary *-t-* in Homeric Greek. It seems, therefore, safe to conclude that, from an early period on, the *-t-* extension of the original **r/n-* stems was to be found in all cases besides the nominative/accusative singular. True, *κτεάτεσσι* is the only dative plural of an original *r/n-* noun to be found in early epic, but there is no reason to believe its declension should be exceptional. Nor is there any reason why the *-t-* should have found its way into the dative plural of heteroclitic stems, but not into that of *men*-stems. It seems safe, therefore, to conclude that the dative plural was indeed built on a *t*-stem, but that subsequent phonological and morphological developments have largely obscured its presence.

A suffix *-m(e)ntom?

Brugmann/Risch's theory depends crucially on the assumption that Greek did once possess thematic nouns of the *cognomentum* type. This is where the reasoning risks becoming slightly circular, since the only evidence for the **-ματον* forms, within Greek,

is in fact the existence of the *-μα, -ματος* type nouns which they are being invoked to explain. However, the difficulty is not serious if one can also argue, based on comparative evidence, for the existence of a IE *-m(e)nton* suffix. Brugmann and Risch do indeed both make this argument, and many others adhere to it.

Italic

Nonetheless, the evidence for the existence of such a suffix in the parent language is less strong than one might initially suppose. The suffix *-mentum* < **mn̥tom* is well attested in Latin; indeed, it remained productive, while neuters in *-men* were created only as literary variants to stems in *-mentum,* e.g. *fundāmen,* versus *fundāmentum* or *vēlāmen,* beside *vēlāmentum* (Leumann et al. 1977, 1:330). Where doublets exist, there is no clear distinction in meaning, as the examples cited above illustrate. In the other Italic languages, evidence for a suffix *-mn̥tom* is limited to the Oscan Abl. sg. **tristaamentud** (vett. 141), which could be an independent formation, but could equally well be influenced by, or even directly borrowed from, Latin (Perrot 1961, 24). This is slim evidence on the basis of which to reconstruct a proto-italic suffix, if such a formation is not assumed to be inherited from PIE. On the other hand, evidence outside of Latin for Italic athematic neuter *-m(e/o)n-* suffix, or indeed for animate *n*-stems is also quite limited, and these are certainly inherited categories (Perrot 1961, 24).

The antiquity of the Latin formations in *-mentum* is also called into doubt by the presence of early feminine forms of certain of the words. In particular, Rovai (2012) points out that feminine *caementa, fulmenta, lamenta* are attested significantly earlier than the corresponding *caementum* etc. and that the feminines *armenta, ramenta* occur in early writers, alongside the neuters which later replace them, and are thus likely to be the original. He demonstrates persuasively that these words, along with several other thematic neuters, are in fact original feminines, which were subsequently reinterpreted as neuter plurals to which singular neuter forms were then. This reinterpretation presupposes the iambic correption which resulted, in Latin, with a feminine nominative singular in *-ă,* not *-ā,* identical to the neuter nominative and accusative plural, and would provide some explanation of why such a formation is abundant in Latin and virtually non-existant elsewhere.

Germanic

Outside Italic, the evidence for a suffix *-mentom* is also scanty. The frequently cited correspondence between Vedic *śromata,* and OHG *hliumunt,* both apparently directly from PIE **kleumn̥to-* is striking. Nonetheless, the equation is, for various reasons, less clear-cut than it has at times been made out to be. *Hliumunt* is frequently attested from the OHG period on[23], surviving as NHG *leumund.* Karg-Gasterstädt distinguishes two base meanings "*Kunde, Gerücht, Gerede*" and "*Guter Ruf, Ansehen, Ruhme Leumund.*" Occasionally, it is also used in the negative sense of "*infamia*" (Karg-Gasterstädt, Frings, and Große 2007). As evidence for a neuter *-mento-* suffix, the first difficulty with these words is that there are no unequivocally neuter forms. *Hliumunt* appears with both masculine and feminine modifiers, but never with neuter ones. Unequivocally masculine forms are more common than feminine ones; however, in the majority of cases, the gender cannot be determined. The Vedic form may be either masculine or neuter[24]. It is perhaps possible that the masculine gender of *hliumunt* is secondary, and the form reflects an original neuter, but there is no evidence of this.

Alongside these two apparently thematic formations one finds an athematic *n*-stem continued in Gothic *hliuma* (w.m.) and Y. Av. *sraoman-* (nt.). Once again, the genders do not agree. In this case, at least, it is difficult to argue that the masculine form is secondary, as there is little evidence for the transfer of neuter *n*-stems, to masculine in Germanic, where the two declensions are kept relatively distinct (Kroonen 2011, 35).

To further muddy the equation, there are other possible interpretations of the suffix of *hliumunt,* besides the thematic one under discussion. At least on phonological grounds, *hliumunt* could also be the reflex of an athematic *nt*-stem[25] . Many originally

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[23] For meanings and OHG attestations v. the entry in *Althochdeutsches Wörterbuch* (Karg-Gasterstädt, Frings, and Große 2007).

[24] Mayrofer designates *śromata-* as neuter without explanation (Mayrhofer 1986); Schwyzer does likewise (1939, 1:520). Cf. however *Altindische grammatik,* vol. II, 2 pp. 753–54 (Wackernagel and Debrunner 1896).

[25] In fact, Grimm first interpreted the form as consonantal, and connected it to a number of nominal ON, Goth., and OE formations which contain the form *-nt-*. His segmentation, into *hlium-und* is, at least

participial forms came in Germanic to be used as masculine substantives, e.g. Goth. *nasjands,* OE *nerian* "saviour", OE *waldand,* OHG *waltatant "dominator,"* *wīgant* "warrior." Of these only *friunt* "friend" and *fiant* "enemy" maintained in OHG the consonantal declension, N.A pl. *friunt, fiunt.* The others were declined entirely after the model of the *a*-stems, (N. A. pl -*a*)[26]. Even in the case of *friunt* and *fiunt,* the *a*-stem type plurals *friunta, fiunta* also occur. It is impossible, therefore, on the basis of purely formal considerations to determine whether *hliumund* represents <*mnto,* or <*mnt-*. On the other hand, a non-participial *nt*-stem is unusual and *hliumunt* is clearly not directly analogous to *wīgant* or any of the others cited above. However, a thematic -*mnto*- is in fact almost as isolated a suffix as *-mnt-* and the possibility that we are dealing with a reflex of the latter cannot be excluded *a priori.* Occasional occurrences of a D pl. ending -*in* suggest a m. *i*-stem, while the feminine forms can only represent an *i*-stem (Karg-Gasterstädt, Frings, and Große 2007). It is not uncommon for an original consonant stem to be declined as an *i*-stem but would be more unusual in the case of an *a*-stem (Braune 2004, 214–15). On the whole, however, this explanation probably causes as many difficulties as it solves.

Two other High German forms appear with a similar suffix -*mund* or -*munt*. An analysis of these forms may indicate a more promising alternative explanation of *hliumunt.* The strong feminine *wahsmunt, -munde* (*i*-stem) "Fruchtbarkeit," formed from the familiar IE root *$*h_2weks$-* (Pokorny 1959, 84; Rix and Kümmel 2006, 288; Wodtko, Irslinger, and Schneider 2008, 288) is not attested until the Middle High German period. Nonetheless, the OHG derivative *wahsmuntigi* (f. -*ī*) seems to presuppose the existence of the adjective *wahsmündic,* also not directly attested until MHG, and therefore of the

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diachronically, untenable. From a synchronic standpoint, however, such an analysis would bring the form in line with certain abstract feminines such as OHG *jugund "pubertas", "iuventus",* and *leidunt, "abomination",* and account for the occurrence of the adjective *hliumhaftig* alongside the regularly formed *hliumuntig, hliumuntlih* 'Deutsches Textarchiv – Grimm, Jacob: Deutsche Grammatik. Bd. 2. Göttingen, 1826.', 343, accessed 22 June 2016,
http://www.deutschestextarchiv.de/book/view/grimm_grammatik02_1826?p=361.

[26] Wilhelm Braune and Walther Mitzka, *Althochdeutsche Grammatik.* (Tübingen: Niemeyer, 1967), 214–15.

feminine *i*-stem *wahsmunt* from which the adjective must be derived. Alongside these forms, OHG also possesses a masculine *n*-stem, *wahs(a)mo,* Old Frankish *wahsmo. Wahsmunt* seems therefore to represent a *-ti* formation, built on the *n*-stem, of the kind seen in OHG *jugund* (fem. *-i* "Jugend, Mannbarkeit") and Skt. *yuvati-* (f. and adj.)*,* though in Sanskrit, the feminine noun has developed a probably secondary, concrete meaning "*Jungfrau*" to *yúvan-* m. and adj.*,* and possibly also in Lat. *sēmentis* formed to *sēmen*[27]. MHG *vrastmunt* (f. *-i*) appears to be formed in the same way. Although no cognate *n*-stem **vrastmo* is attested, *vrastmunt* seems clearly analysable as the reflex of an original *-mn̥-ti-(s).* The OHG *vrastmunti,* (either a f. *ī-,* or a nt. *ja*-stem,) which occurs as a gloss on *secretum,* appears to guarantee the antiquity of the MHG form.

In view of these parallels, as well as of the forms *tugund, iugund,* one may be inclined to suspect that it is in fact the feminine *i*-stem declension of *hliumund* which is original, and that the masculine forms, though more numerous, are secondary. They may have been the result of conflation with the simple *n*-stem **hliumo* which would correspond to the Gothic *hliuma* m., or have originated by analogy with the monosyllabic masculines in *-und,* i.e. *mund, sund, kund* and their numerous compound forms, though neither of these explanations seem a hundred per cent satisfactory. It is also possible, however, to argue the reverse, namely that the masculine declension of *hliumunt* is the *lectio difficilior* and liable to be original, while the feminine forms are the result of analogy with *tugund, iugund* and the like. The question does not at present seem susceptible to definite resolution, certainly not in this thesis. Here, the relevant observation is simply that *hliumunt* does not *necessarily* represent the reflex of **-mentom*, and hence its value as evidence for this suffix is lessened.

Outside OHG, but still within Germanic, there is the Gothic adv. *sniumundō,* "μετὰ σπουδῆς," and its comparative *sniumundos "σπουδαιοτέρως."* Lehmann explains the base *sniumund-* as reflecting a PIE **-mn̥to-* and offers Lat. o*rnamentum,* OHG *hliumund,* Skt. *śromata-* and, by a common sleight of hand, Greek pl. *πράγματα,* for comparison. That the base represents a thematic **-mn̥to-* seems relatively certain. The

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[27] Leumann sees as more likely the possibility that *sementis* is a reworking of an original **sementum,* as a result of the influence of *messis* (v. 1977, 1:345 with references)*.*

adverbial comparative suffix -os corresponds to the adjectival comparative -oza, which is added only to a-stem (thematic) adjectives (Krause 1968, 205). However, as the last observation implies, surely it is better to follow Perrot (1961, 20) in interpreting *-m̥to-, in this case, as an adjectival, not substantival formation[28] . If there is a comparison to be drawn, it must be with other adjectives, such as the Greek θαυματος.

Despite the existence of alternative explanations, the possibility remains that OHG does indeed preserve an archaic thematic *-m̥to-, and that this formation corresponds directly to the Vedic form śromata-. If this is the case, the appearance of hliumund as a feminine must be explained by the analogy of the -i-stem feminines cited above. If so, there is still no direct evidence that this masculine is based on an original neuter, and therefore the exact equivalent of the Latin nouns in -mentum, and a potential starting point for the t-inflection of the Greek men-stems. In short, it is certainly possible to explain hliumund as something other than an archaic thematic formation in *-m̥to-, specifically as a -ti- feminine formed (either within Germanic or OHG itself) to an original n-stem. Based on analysis purely of the Germanic material, this explanation seems preferable. However, the hypothesis of a thematic formation cannot be conclusively ruled out. If one assumes a thematic starting point, then the argument would simply be reversed. The feminine -i-declension is secondary, resulting from analogy with wahsmund and the other forms cited above. One is still left without any direct evidence of a neuter *m̥to-suffix, however.

Indo-Iranian

It is necessary, therefore, to turn to the Indic forms, and see if these will shed any light on the matter. If they are not susceptible to any explanation other than the conservation of an archaic thematic suffix, it is perhaps preferable to assume an equation with the OHG form, and be left with only one, not two, anomalies to explain.

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[28] If there were strong reasons for insisting on a nominal base, one could argue that the ending of the positive form -o, being originally a fossilised ablative, could be attached to substantives as well as adjectives. However, of Krause's examples (1968, 205), all others are formed to adjectival bases.

In post-Vedic Sanskrit, the patronymic *sauśromateya* appears once in the *Śatapatha-brāhmaṇa* at 6.2.1.37[29]. Wackernagel-Debrunner cites the form as an example of a patronymic formed with the suffix *-eya* to **su-śromatā* (1896, II, 2:505). Why the underlying form should be an *ā*-stem is not explained. In the case of a personal name, however, it is tempting to see the base as an adjectival formation, with the *-mant-* variant of the more common *-vant* < **we/ont-* suffix after the original labial element of the root **k'leu-*. The name would therefore mean "one who possesses renown." Arguing against this interpretation is the formal consideration that the patronymic *-eya* suffix is usually added to stems in *a-, ā-, -i, or -ī*. There are, however, exceptions such as AV *rāthajiteyí* from AV *rāthajít-* (Wackernagel and Debrunner 1896, II, 2:505). An alternative would be to accept an *a*-stem base, to account for the suffix, but to interpret the *a*-stem as an adjective, similar to that which must underlie Goth. s*niumundō*. Although **-to,* (Skt. *-ta*) as an adjectival suffix occurs predominantly with verbal forms, a suffix **-to-* (whether or not this is in origin the same suffix as the deverbative one) does also serve to create adjectives from nouns, with a base meaning of "provided with x", e.g. *án-apta*, "waterless" *vyādhita- "*afflicted with sickness"(Wackernagel and Debrunner 1896, II, 2:588)

An apparently related consonantal *śrumat-* is given by Panini in a list of proper names from which patronymics can be derived by means of the suffix *-ya* (Pāṇini 1987). In this case, at least, the form must be adjectival[30]. Following Panini's derivation, *śrumat-* should yield a patronymic **śraumatya.* This form is nowhere directly attested. However, again, according to Panini's derivational method, the plural of **śraumatya* should be

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[29] TITUS Text collection: YVW White Yajur-Veda Text: SBM Śatapatha-Brāhmaṇa Mādhyandina-Recension On the basis of the edition by Albrecht Weber, The Çatapatha-Brāhmaṇa in the Mādhyandina-Çākhā with extracts from the commentaries of Sāyaṇa, Harisvāmin and Dvivedānga, Berlin 1849 / Repr. Varanasi 1964 (Chowkhamba Sanskrit Ser., 96) entered (books 1-11, 13-14) by H.S. Anantanarayana (supervisor W.P. Lehmann), Austin, Texas, 1971; reedited by J.R. Gardner, Iowa, 1998; book 12 entered by Makoto Fushimi, Kyoto / Harvard 1999; corrections by Matthias Ahlborn; TITUS version by Jost Gippert, Frankfurt a/M, 31.1.1997 / 28.2.1998 / 21.6.1998 / 14.10.1999 / 1.6.2000 / 7.12.2008 / 21.4.2012

[30] Attempts to relate this form directly to *sauśromateya* has lead to a certain degree of confusion. For instance, Böhtlingk and Roth cite the *Śatapatha-brāhmaṇa* for *śraumatya* rather than *sauśromateya*.

śraumata (the *-ya* suffix is deleted in the plural, and the simple *a*-suffix, which Panini considers to be implicit in the singular as well, surfaces.) The form *śraumata* is attested once, in the *Āśvalāyana Śrautasutra* (12.14.3).

Debrunner considers Panini's *śrumat-* to be an *ad hoc* creation of the grammarian, created to explain *śraumatya* and *śraumata* since *śromata-* had been forgotten[31]. This is possible, though one wonders how thoroughly forgotten any Vedic form can have been. It is equally possible, however, to assume that while a thematic adjective *su-śromata* underlies *sauśromateya,* a similar consonant-stem adjective explains *śraumatya.* This distribution would be partly explained by the fact that denominative adjectives in *-to-* seem to be more common with compound stems. Simply because the consonant stem is not attested in surviving texts does not mean that it could not have been familiar to Panini, and it does seem a little odd that out of only seven examples given in the sutra, one would have been invented. In short, post-Vedic Sanskrit does not provide clear evidence of a thematic, nominal formation *-matam* < *-mṇtom*, although it does potentially preserve traces of an adjectival *-mṇ-to-,* at least in compound forms.

We are left, then, with the four occurrences of *śromata* in the Rgveda. The forms which appear are[32]:

ádhi naḥ śrómataṃ dhāḥ. (7.24.5d)

kéno nú kaṃ śrómatena ná śuśruve/ janúṣaḥ pári vṛtrahā́ (8.66.9cd)

úd aśvinā ūhathuḥ śromatāya kám (1.182.7.d)

nṛvát ta indra nṛ́tamābhir ūtī́/ vaṃsīmáhi vāmáṃ śrómatebhiḥ (6.19.10ab)

From these forms, it is clear that one is dealing with an *a*-stem. The questions that remain, therefore, are: a) is there is any way of determining whether the word *śrómata* is masculine or neuter, and b) is it possible to interpret the word as originally adjectival? Since neither of these questions can be answered on the basis of formal considerations, attempts must depend to a certain extent on what can be inferred about the meaning in

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[31]   *(1896, II, 2:754)*

[32] List taken from *Wörterbuch Zum Rig-Veda* (Grassmann 1873).

context. Unfortunately, none of the passages permit a particularly fine analysis of the meaning. Sayana connects the word (accurately) with the verbal root *śru.* In fact, the passage in mandala 8 may be a deliberate *figura etymologica*. The poet asks, "*kéno nú kaṃ śrómatena ná śuśruve/ janúṣaḥ pári vṛtrahā́.*" ("Indeed, by what fame (*śromatena)* has the *Vṛtra*-smasher not been famed (*śuśruve)* from his birth?")[33]

In the first Mandala, the poet praises the Asvins for rescuing Bhujyu and "*ud ...ūhathuḥ śromatāya.*" Sayana explains *śromatāya* here as *kīrttimattvāya* "for the possession of fame." Jamison, however, translates simply "You carried him up, O *Aśvins* for (his story) to be heard." [32] In theory, one could also interpret the dative as a substantivized masculine, "to/for the renowned one." But since references to the Asvins' rescue of Bhujyu occur elsewhere, and there is nowhere a suggestion that he was carried to or for anyone in particular, this possibility is probably to be discarded.

In Mandala 7 the poet asks Indra: "*ádhi naḥ śrómatam dhāḥ*" (7.24.5d) *"*Set your hearing in us" (clarified in Jamison's and Brereton's commentary as "presumably the 'hearing' that gods extend to men's hymns"[34]) but in view of the simile *divī́va dyā́m* "as heaven upon heaven" the translation "set renown in us" might be preferable. The image of fame heaped upon fame seems, on the face of it, more comprehensible than that of hearing. It also might be a better fit with the request for *vásūnāṃ* "goods, benefits" in the first half of the line (7.24.5.b). Furthermore, although *śrávas "*Lauter Ruf...Lob...Ruhm," according to Grassmann, occurs more frequently with a complement meaning "brightness" "adornment" or something similar, it also appears several times as the object of *adhidhā*. The phrase would therefore be very similar to the request with which 3.19 concludes: "*ádhi śrávaṃsi dhehi nas tánūṣu*". In this case also, a substantive sense seems necessary, and is well in keeping with the frequent use of neuter *men*-stems as deverbative abstracts.

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[33] Translations given here are, unless noted otherwise, taken from *The Rigveda: the earliest religious poetry of India* (Jamison and Brereton 2014).

[34] Stephanie W Jamison and Joel P Brereton, 'Rigveda Translation: Commentary – Indra Hymns of VII', 14, accessed 16 August 2016, http://rigvedacommentary.alc.ucla.edu/.

In mandala 6, the poet prays, "*nṛvát ta indra nṛ́tamābhir ūtī́/ vaṃsīmáhi vāmáṃ śrómatebhiḥ*" (6.19.10ab). Jamison and Brereton again favour a base meaning "*hearing*," that is, Indra's hearkening to the hymns, and translate "Manfully, with your most manly help, Indra, we should win what is worth winning *through your attentions*." Gelder gives "*Nach Männerart möchten wir mit deinen mannhaftesten Hilfen durch die Ruhmestaten Gut gewinnen*" (1923). This translation is, for better or worse, more in keeping with Sayana's gloss *śrótavyair yaśobhiḥ* "with glory worthy of hearing". If *śrómata* were in fact, at least in origin, an adjective with a base meaning of "heard, worthy of being heard" one could imagine the neuter being used to mean both, "what is heard or said" of a person, i.e. their reputation, i.e. fame, glory, and "a thing worthy of hearing" i.e. a glorious deed. If one assumes a purely substantive formation, "Ruhmestaten" seems like a slightly free translation. As in 1.182, *śrómatebhiḥ* is only loosely connected syntactically, and could be omitted entirely from the phrase, which makes determining its sense and use slightly more difficult.

The reason we have been arguing that all four passages can be interpreted as meaning at base "fame, reputation" is that, while it is not too difficult to imagine this meaning developing from a substantivized adjective, "heard," the transition from such an adjective to a *nomen actionis* is harder to accept. One advantage of assuming an original adjective is that, whereas Sanskrit does not, apart from this single form, possess a nominal *mata*-suffix, it does possess certain denominative adjectives in -*to*-, probably including the subsequently substantivized *parvata* from *parvan*. Such adjectives are perhaps to be reconstructed for Indo-European as well. One fact that does not seem to have been considered in the discussion of *śromata* and its cognate forms is that *hliumunt* and Goth. *hliuma* are not strictly speaking synonymous. The word *hliumunt,* as mentioned earlier, means "*reputation, rumour, report*" (whether good or ill), but not simply "hearing", whereas *hliuma* means "hearing" and does not have the expanded sense of "what is heard." Similarly, Y. Av. *sraoman* means "hearing, the capacity for hearing," whereas *śromata*- sometimes or, we would argue, always, has as its base, "fame, reputation". This difference in meaning provides some motivation that might account for the creation of a second form based on the *n*-stem, and distances the words

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somewhat from the Latin doublets in -*men* and -*mentum,* which appear to be genuinely synonymous.

All of the passages cited above are compatible with the sense one would expect from a neuter *n*-stem formed from the root *śru.* They also admit of the interpretation of a neuter adjectival form, used, at least in 1.182 and 7.24, as an abstract substantive. The analogy Grassman draws between *parvan-, parvata* and **śroman* (Y. Av. *sraoman-*), *śromata* would suggest an originally adjectival formation, if one accepts the theory that *parvata* itself was originally an adjective meaning "having crags or elevations." The masculine form *parvata* gains a concrete sense, while in this case the neuter would be essentially synonymous with the original form. This might account for the latter's disappearance, but it also makes any attempts to decide whether one is dealing with a substantive or adjective, based on the sense, rather futile. The semantics of *śromata* do not appear as complicated as those of *parvan-*.

In summary, one must conclude that a search for an extra-Latin nominal suffix *-n̥tom* yields very little fruit. The most convincing, and indeed the only, direct parallels are OHG *hliumund* and Ved. *śrómata-*. Although these forms *could* represent a genuine archaism, this is not the only possible explanation. In the first place, even if both nouns are taken as reflexes of an original **-m̥to-*, that original may very well be a masculine **-m̥tos*. The Vedic forms could be either masculine or neuter, while the OHG forms are sometimes masculine, sometimes feminine, but never unambiguously neuter. Secondly, the two may not continue the same original form. The Gothic form could be an original feminine *ti*-stem, subsequently transferred to the masculine declension. The Vedic form could represent a secondary thematisation of the underlying athematic adjective in -*mant*- preserved in the personal names cited by Panini. Conversely, *śromata-* could represent a substantivized adjective formed to the *n*-stem preserved in Av. *sraoman* (the only actually attested neuter in the case), similar to the derivation of *parvata* from *parvan-*. No matter how one derives the forms, they remain quite isolated (though *parvata* and MHG *vrastmund* f. and *vriemund* f. do provide close parallels). Even if we assume, for parsimony's sake, that it is preferable to have only one unusual form to explain rather than two, and choose therefore to argue that the Vedic and the OHG mostly likely go back to a single original, and if we further assume, on the basis of Lat -*mentum,* that this

form was probably a neuter, *kleumṇtom,* we are still left with the impression that this form was already more or less isolated within (at least) late PIE. Furthermore, without more evidence for an at least moderately well-preserved class, or indeed any class at all beyond the single form, and without any direct evidence that even this individual form was preserved in proto-Greek, it seems unreasonable to accept the existence of the original concurrent class of thematic nouns in *-mṇtom* posited by Brugmann as the source of the *-t-* in Gr. ὄνομα, -ατος, and the like.

Thematic -(*men)-to*

There are, however, also possible traces of a secondary substantive suffix *-to-.* Most of these nouns are built to an original in *-men-,* which makes them particularly interesting to the present discussion. Within Indo-Iranian, one finds:

sīmanta- m. (AV) has the meaning *"*boundary line, line parting hair," whereas *sīman-* f. (AV) means "border, limit."

hemantá- m. RV,[35] beside YV *héman "*im Winter" (locative only).

vasantá- m. RV *"*spring". This case is more complicated. There is no simple *n*-stem variant. However, *vasar-* which occurs only as the first element of the proper noun *vasar-hā* may reflect an *r/n*-stem (cf. OCS *vesna* f.) (see Wodtko, Irslinger, and Schneider 2008, 357–67 for more information about this very productive root).

It is clear that none of these forms provide a direct parallel to *śrómatam*. In the first place, they are masculine, not neuter, and in the second, they show a full grade of the *men-* suffix, as is expected in an animate amphikinetic noun. Nonetheless, they do represent nominal formations in *-to-* to an *-n*-stem, and as they are frequently cited in discussions of the neuter forms (e.g. Brugmann 1879; Oettinger 1982), they deserve a brief examination.

The first of these, *sīmanta-* m. appears to be cognate with Greek ἱμάς ἱμάντος, ὁ "rope, strap." In addition to *sīmanta-* Sanskrit also possesses a closely related *n*-stem

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[35] Wackernagel p. 589 cites *hemantá-* as first occurring in the AV (1896, II, 2:589). However, *hemantān* (A pl.) is also to be found at 10.161 4a of the RV.

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sīman, which can be either masculine or feminine. The *n*-stem *sīman-* appears first as a masculine noun in the Atharveda with the meaning "part (of hair)." Later, it is also used to mean "boundary, boundary stone, boundary line," in which sense it is feminine (except for one occurrence when it appears to be neuter). In other languages, cognates have continued a sense similar to that of the Greek, e.g. ON *simi* (w.m.) and OS *simo* (w.m.), both meaning "rope," as well as O. Ir. *sim* "chain."[36]

An alternative possibility, that *sīmanta-* in fact represents a compound *sim(a)-anta,* was suggested by the Indian grammarians. The classical Sanskrit form *sīmānta* could lend support to this interpretation, or conversely and more probably, could be the result of it. Although this suggestion has the look of a (false) folk etymology, Debrunner, at least, appears to give it serious consideration. Although it seems fair to say that the history of these forms is not well understood (Risch qualifies the origin and formation of *ἱμάς* as "unklar" (1974, 27) and Mayrhofer's entries (1976, 3:475; 1986, 732–33) are liberally interspersed with question marks), assuming some connection between *ἱμάς* and *sīmanta* appears less problematic than rejecting it

The existence of *n*-stems in both Greek and Sanskrit (*sīman-* and the derivative *ἱμονιά*) leads one to suspect that the -*t*- in both languages is a secondary addition. Although this agreement between the two languages is striking, there remain formal complications. While the Sanskrit can be easily derived from a full-grade suffix, the

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[36]Mayrhofer is sceptical of the relationship between *ἱμάς* and *sīmanta*, because of the difference in meaning between *sīmanta-* and its proposed cognates (1976, 3:475). The difference in meaning does not, however, appear to me to represent an insurmountable obstacle. The transition from "cord, rope" to "line" to "boundary line" seems plausible. Pokorny (1959) postulates a verbal root **sī* "to trace a straight line" in order to account for *sīmanta* as well as for *sīta-* "furrow" *sīmā,* and *sīrā*. Mayrhofer, whose overall conclusion seems to be summed up as "Schwierig" repeats, with reservations, this possibility, giving the root in the form **s(e)i̯H/*siH*. Such a root, if it existed, would seem to have been confined to Indic, and is not continued by any verbal form. Mayrhofer also considers a possible connection with the Skt. root SĀ "to bind" which he derives from**seh₂/ *sh₂-ei̯* , and sees a possible connection with Hit. *išhima(n)-* "Strick, Seil, Linie" (1986, 732–33). Frisk adopts a similar solution, deriving *ἱμάς* and *sīmanta* to a PIE verbal root "bindan," the exact form of which he does not specify, but which he sees as having derivatives in several language groups, including Skt. *syati,* and *sinati* (1991b, 1:724–25). The LIV explicitly rejects the notion of a PIE **seh₂(i)-* "binden" rejects the existence of such a root for PIE (Rix and Kümmel 2006, 520).

Greek form is less straightforward. It belongs to a relatively small group of words in words ending in *άς, -άντος* that seems to have a variety of origins, a number of which have not been entirely satisfactorily explained. Some are likely of non-Greek origin. However, Beekes (1973) derives *τάλᾱς, τάλαντος-* from *$talh_2ent$-* in order to account for the long vowel of the N sg..

One straightforward difference between *sīmanta* and *ἱμάς* is that *sīmanta* is thematic, and *ἱμάς* is not. It is, of course, possible to dismiss this difference and argue that the thematisation is secondary. On the other hand, *hemanta-* is also thematic, as is *vasanta-*, and it seems worth considering at least the possibility that one is not dealing with a form *sīmant-a* but rather *sīman-ta-*.

Nussbaum (2014) argues that not only *-h_2 but other "genitival" or possessive suffixes, including *-*to*-, could form essentially equivalent collective or "delibative" derivatives. If one accepts this theory, the forms under discussion could reflect such a use of *-*to*- .

The two season names are particularly interesting for our purposes insofar as they have clear cognates in other languages. The similarity between Ved. *hemantá-* (m) and Hit. *gimmant-* c. over and against the *n*-stem found in Gr. *χεῖμα, χείματος; χειμών, -ῶνος* (m.) and Ved. *heman-* has been frequently discussed. Fick wished instead to connect it directly to the *-t-* in the stem *χείματ-,* despite the different grade of the suffix (1880b).

Hittite *gimmant-* is, however, one of a number of common gender nouns in *-ant-* (the final vowel seen in transliteration *-anza* is purely graphic, since the cuneiform syllabary could not easily represent the final consonant cluster, and does not imply a thematic formation) which occur in Hittite, and in fact all the Anatolian languages, alongside *t*-less neuter *n*-stems. These forms have generated considerable discussion[37]. Neuter *r/n*-stems are frequently the base of such formation, but all classes of neuter consonant stems can fulfil this role e.g. *uddant-* from the *r/n- uttar, uddanas, "*word;" *taruwant-* (*GIS-ru-wa-an-za*) from *taru* "wood;" *nepisant-* from *nepis-* "sky" *siwatt-*

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[37] Mayrhofer, Rieken

siwattant-[38]. The three pairs of season names, **hamesha-,* (G *hameshas*) and *hameshant-, zenas* and *zennant-, *gimma-* (G *gimmiyas*) and *gimmant-* appear to belong to this class as well. In a number of ways, however, they are not quite parallel to the others, and will be discussed separately below. A few *-ant-* formations built to common gender nouns, such as *tuzziyant-* to *tuzzi-*, may or may not bear a direct relation to *uddant-* and the like.

Anatolian "ergative" *-ant-*

In 1962, Laroche first noted the peculiarly complementary syntactic distribution of the neuter and common gender nouns, namely that the common gender nouns in *-ant-* were virtually restricted to clauses in which they appeared as the subject of a transitive verb, whereas neuter nouns never occurred in this function (Laroche 1962). Laroche hypothesised that the suffix served originally to create a common gender noun that could serve as the subject of a transitive verb, since a neuter noun could not fill this role directly. Laroche termed this suffix "ergatif" because of its similarity in function to the ergative case found in other language groups. He did not, however, consider it to be a true ergative case form. He interpreted *-ant-* as a derivational, not morphological suffix, which served to create a common gender noun. It's function, however, was syntactic; the purpose of creating a common gender noun was in order that it could be employed it as the subject of a transitive verb.

This interpretation has generated considerable controversy. Further investigations have confirmed Laroche's claims for the syntactic distribution, and identified a related phenomenon in Lycian, in addition to the Hittite and Luwian evidence which was the basis of Laroche's original investigation (Carruba 1982). What conclusions should be drawn from these observations, however, has been more disputed. Laroche's own interpretation, that of a derivational suffix with a purely syntactic function, is a linguistic oddity, apparently unparalleled in any language. However, rejecting the primarily syntactic role of *-ant-* requires dismissing as meaningless coincidence the overwhelming evidence of such nouns' usage in all Anatolian languages, and looking for a semantic

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[38] Emmanuel Laroche, 'Un "ergatif" en Indo-Européen d'Asie Mineure', *Bulletin de La Société de Linguistique de Paris* 57 (1962): 25.

distinction between the doublets which is not at all easy to discern from the attested uses[39]. Alternatively, one could argue that -*anza* is not a derivational suffix at all, but rather a true ergative case form, incorporated into the paradigm of neuter nouns. Garrett makes a strong case for this interpretation (Garrett 1990). The question continues to be debated, though, primarily because one finds what are, or certainly appear to be, common gender nominative adjectives modifying the "ergative" neuter nouns. Although Garrett provides a possible explanation of how a form identical to the nominative common gender could be used to fill the need for a neuter ergative case in adjectival paradigms, his explanation is not entirely satisfactory, and no better one has been forthcoming. Furthermore, while neuter plural subjects of intransitive verbs govern a singular verb in Anatolian, as in PIE, "ergative" plurals govern a plural verb, as a common gender plural subject would do. Again, this is not an insurmountable obstacle to the existence of the ergative as a true case, but it does weigh somewhat on the other side.

A PIE "ergative" ?

Of those who accept Laroche's conceptualisation of *ant*- as a derivational morpheme which "animatises" inanimate nouns, thereby permitting them to function as the actor or of a transitive verb, some have drawn much wider ranging conclusions than Laroche's relatively cautious claims. Lindeman's theory (Lindeman 1986b), largely accepted and continued by Neu (1989) is particularly ambitious. Lindeman saw, in the "animatising" -*ant*- suffix, a PIE process which would account not only for the Anatolian forms, but also for the mysterious -*t*- which appears in, for example, Skt. *yakr̥t,* as well as the -*t*- of the oblique stem of *τραῦμα, ατος* and the like. Laroche attributed, on the strength of the coincidence of Luwian and Hittite, the suffix -*ant*- to the common Anatolian period. It is true, however, that nothing in Laroche's observations precludes a PIE date. Lindeman assumes one. He further posits that the syntactic constraints observed in Anatolian, namely that in order for a neuter to fulfil this role it had first to be transferred to an animate class, reflects PIE syntax, and he argues that *-ent*- was a suffix

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[39] Josephson's attempt to combine semantics and syntax by uniting the notions of individuality and agency results, it seems to me, in an argument which is not particularly compelling, or motivated by the evidence under discussion on either front (2004).

of choice for this purpose. Building on Pedersen (1893) and Benveniste's (1935) suggestions of an early PIE two-case system with an oblique stem in *-en-*, Lindeman analyses *-ant-* as the oblique case *-an-* of the base noun, and a suffix *-t-*[40]. He then proceeds to construct hypothetical common gender nouns such as **druwant-* which would differ from neuter **doru-* only in being able to function in the role of agent. In order to account for forms such as τραῦμα, ατος (neuter, zero-grade suffix) as opposed to *taruwant-* and its ilk (common gender, full grade suffix) Lindeman assumes that, once the restriction on neuter agents was no longer in force in "core" PIE, some of these animate agents were reinterpreted as neuters, and inflected accordingly. The coexistence of the extended *-ant-* forms is also supposed to account for the final *-t-* of *yakr̥t* and the like.

Although the explanatory power of this hypothesis is alluring, Lindeman presents only the broad strokes of his theory. Attempts to work out in more details the mechanisms he proposes are less satisfactory. Neither is concrete evidence for the Indo-European origin of either the suffix, or the syntactic role it fulfils, particularly abundant.

Moreover, Lindeman's starting point (his interpretation of Laroche) is an unfortunate one. Although Laroche's terminology of *noms animés* and *noms inanimés* is potentially ambiguous, Laroche is clearly referring to concord classes, that is, to grammatically common-gender versus grammatically neuter nouns, not to a semantic or conceptual distinction between things regarded as endowed with life or volition, and things inert, or lifeless. Lindeman suggests that Schwyzer offers further support for this syntax-based distinction, paraphrasing his opinion as follows: "On ne rencontre que très rarement des nom. acc. neutres sujet de verbes transitif-actif dans les plus anciens textes de l'indoeuropéen classique, (*Gr. Gr. II 64.*)*"* This is not however, what Schwyzer says. Schwyzer states very clearly that "*leblosen Maskulina, Feminina, Neutra*" are in general restricted to acting as the subject of "*stativ-fientiven Instransitiven*" while "*belebte (oder belebt gedachte) Maskulina, Feminina und Neutra (so* τέκνον, **auch Kollektiva** *wie* στράτευμα)" (emphasis mine) also serve as the subject of transitive verbs. In other words,

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[40] That PIE possessed such an oblique stem outside of the *r/n*-declension is doubtful. It is not, however, critical to Lindeman's argument, since, if one wishes, it is possible to assume that *-en-t-* originated in this declesion and was subsequently reinterpreted as a single unit and added to other stems as well.

Schwyzer is not speaking of concord classes, neuter, versus masculine and feminine, but rather of semantically-based lexical classes.

Neuter agents in Homer

One could, of course, argue that Schwyzer was misinterpreting his own data. But *τέκνον* does indeed, as we shall see, occur once as the subject of a transitive verb in the *Iliad*. If one goes looking for other animate neuter nouns which might fulfil such a role, the scope is limited. Schwyzer's other example, *στράτευμα* is not attested until Isocrates[41]. Although many masculine or feminine nouns denote objects, the reverse is not true: the number of neuter nouns that refer to living beings is small. Diminutives in -*ιον*, are not Homeric, so that *παίδιον*, for example, does not occur in any form. One does, however, find *τέκος* as well as the previously mentioned *τέκνον*. The form *τέκος* appears exclusively as a vocative.

The singular *τέκνον* is similarly restricted in use. The form occurs 16 times in the Iliad, always as a vocative, by parents to their own child. The plural *τέκνα* has a different, though still quite restricted sphere of use. It occurs 25 times in the *Iliad*. Of these, nineteen are accusatives and two are vocatives, and therefore irrelevant to our present investigation. This leaves one with four occurrences of the N pl. *τέκνα* to consider. In 2. 311, it is the subject of *ἔσαν*: "*ἔνθα δ' ἔσαν στρουθοῖο νεοσσοί, νήπια τέκνα.*" In 870, *τέκνα* does come very close to being used as the subject of a transitive verb. In "*τῶν μὲν ἄρ' Ἀμφίμαχος καὶ Νάστης ἡγησάσθην/ Νάστης Ἀμφίμαχός τε Νομίονος ἀγλαὰ τέκνα,*" (870-871) it is in apposition to the two names, which are the subjects of *ἡγησάσθην*. The fact that the names are included explains why the verb is dual, and not singular as one might expect with a neuter subject, and perhaps reinforces the feeling that *ἀγλαὰ τέκνα* is not exactly the subject. Also, *ἡγησάσθην* is not strictly speaking transitive, as its complement is in the genitive, not accusative. In 2.136, "*αἳ δέ που ἡμέτεραί τ' ἄλοχοι καὶ νήπια τέκνα/ εἵατ' ἐνὶ μεγάροις ποτιδέγμεναι· ἄμμι δὲ ἔργον,*" *ἡμέτεραί τ' ἄλοχοι καὶ νήπια τέκνα* is the subject of the intransitive verb *εἵατ'* and logically, the *νήπια τέκνα* seem to be included as subjects of the participle *ποτιδέγμεναι*, though it is feminine in form. Also,

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[41]Based on a search of the TLG.

although *ποτιδέγμεναι* appears to require an object *ἡμας*, this is unexpressed, and must be supplied from the context.

In 18. 514, however, "*τεῖχος μέν ῥ᾽ ἄλοχοί τε φίλαι καὶ νήπια τέκνα ῥύατ᾽ ἐφεσταότες*" does not admit of any such ambiguity: *νήπια τέκνα* is clearly conjoined with *ἄλοχοί τε φίλαι* as the subject of *ῥύατ᾽* and *τεῖχος* is the object. The verse draws its power precisely from the fact that the *ῥ᾽ ἄλοχοί τε φίλαι καὶ νήπια τέκνα* who have elsewhere, repeatedly been presented as the passive, helpless victims of the war, are now driven by desperation to become active participants. Clearly, at the time of the final composition of the Iliad, it was grammatically *possible* for a neuter noun to function as the subject of a transitive verb. Whether it was in some way unusual for one to do so is a more difficult question to answer.

However, one can argue that the case of neuter nouns which refer to animate subjects is itself unusual. Even assuming that there is no direct overlap between grammatical gender and semantics, there is an indirect one, via the derivational suffix. Neuter *-o-* and *-os*-stems do not normally refer to living creatures, let alone human beings. One could, therefore, argue that there must, or at least might, be something inherently inanimate, objectified or passive in the semantics of words formed with such suffixes. (Diminutives, such as *παίδιον*, or *mädchen* which are frequently neuter in form, might be seen as a different case, since the suffixes do in fact usually refer to humans, but as already noted, such forms do not occur in Homer.) A degree of objectification seems possible, for example, in the case of *τέκος* and *τέκνον*, both of which have the literal sense of "the thing born," a meaning which is reinforced in certain cases by the proximity of the verb *τέκω* e.g. 2. 313 "*ἀτὰρ μήτηρ ἐνάτη ἦν ἡ τέκε τέκνα*." Several masculine synonyms, e.g. *παῖς, υἱός*, and patronymics, would be available if these carried more active connotations were desired.

One can imagine a two by two grid:

1) inanimate intransitive	2) animate, intransitive
3) inanimate transitive	4) animate transitive

Of these four categories, only category 3 is in doubt. Examples of the others are abundant, and not particularly informative. If, however, one considers that the relevant distinction may not be "Lebloskeit" (animacy), but rather grammatical gender, one must further subdivide each cell, obtaining the following 8 categories

1a) inanimate, neuter, intransitive

1b) inanimate, masculine/feminine, intransitive

2a) animate, neuter, intransitive

2b) animate, masculine/feminine, intransitive

3a) inanimate neuter transitive

3b) inanimate, masculine/feminine, transitive

4a) animate, neuter, transitive

4b) animate, masculine/feminine, transitive.

If grammatical gender is the relevant criterion, cells 3a and 4a ought to be empty. However, 2a and 4a are already marginal categories, as the number of neuter nouns with animate referents is quite small. On the other hand, if animacy is the relevant parameter, 3a and 3b ought to be prohibited, except perhaps in clearly magical or personifying contexts, while 4a should present no problem, except for the limited number of potential words.

In either case, cell 3a) inanimate, neuter, and transitive, ought to be empty[42]. It is not. Schwyzer provides several passages where a neuter, inanimate object, usually a weapon, functions as the subject of a transitive verb.

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[42] Or, following Hovdhaugen's reasoning, it should at least be very nearly empty (1969). If, at the time of the composition of the Iliad, it was in fact ungrammatical for a neuter noun to function as the subject of a transitive verb, this category would necessarily be entirely empty. If, on the other hand, neuter agents had become admissible during the development of the epics, one would expect to find it used only in later passages, and therefore likely, though not necessarily, relatively infrequently overall. Hovdhaugen's argument, though, seems to be that once a structure which was formerly prohibited becomes grammatically

These include a) *βέλος*:

τὸν δ᾽ οὐ βέλος ὠκὺ δάμασσεν, (5.106)

ἦ μάλα σ᾽ οὐ βέλος ὠκὺ δαμάσσατο πικρὸς ὀϊστός· (5.278)

ὡς δ᾽ ὅτ᾽ ἂν ὠδίνουσαν ἔχῃ βέλος ὀξὺ γυναῖκα (11.269)

βέλος δ᾽ἔτι θυμὸν ἐδάμνα (14.439).

b) *ἔγχος*:

ἀντικρὺ δὲ παραὶ λαπάρην διάμησε χιτῶνα/ ἔγχος· (3 359-60)

ῥῆξεν δ᾽ ὀστέον ἔγχος, (16 310)

Nothing in these lines suggests that the subjects are being in any sense personified.

One is left, therefore, with the impression that Homeric Greek, or at least the *Iliad*, simply reflects the relatively common cross-linguistic situation in which transitive verbs tend to imply deliberate, agentive action, and therefore to occur more commonly with animate subjects, rather than reflecting any hard or fast grammatical restriction on inanimate subjects of such verbs, when the semantics appear to warrant it. (Such is in fact to a certain extent the case in English. "The branch whacked me on the head," does suggest the possibility of malice aforethought, whereas, "The branch fell on my head," does not. "The branch fell and whacked me on the head," seems to reflect middle ground.

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acceptable, it will at first be used only infrequently, and conversely, that the rarity of a given structure may, sometimes, be taken as evidence that the structure was previously considered ungrammatical. Specically, Hovdhaugen' argument rests on the assumption that if the earliest stages of IE languages use inanimate nouns as agents only occasionally this may be taken as evidence that such a construction was prohibited in PIE. This assumption is debateable. Even if were accepted in its general form, it does not necessarily follow that Homeric Greek follows closely enough upon late PIE to represent such a case. (A perhaps more plausible refinement of this hypothesis would be that a structure which has been prohibited in a given language will at first be used principally in lower registers of the language, and only later spread to more formal contexts. The use of "they" as a gender indeterminate singular pronoun might be an example of this phenomenon. Though widespread in informal speech, it continues to be eschewed in writing.) None of this, however, is directly relevant, in so far as there is no evidence that inanimate nouns used as the subject of a transitive verb are in any way rare or unusual in Homer. The question of what it would indicate if they were is therefore moot.

In other contexts, however, a similarly constructed sentence, such as, "The bullet penetrated the lung," does not imply any degree of personification of the bullet.)

None of the foregoing guarantees that PIE did not restrict the use of inanimate and/or grammatically neuter subjects with intransitive verbs. Our observations merely suggest that such a usage is not reflected in historical Greek. Hovdhaugen attempts to argue on the basis of the evidence of a variety of Indo-European languages that the proto-language must have prohibited neuter agents of transitive verbs (1969). Whether or not one wishes to draw a distinction between deep and surface structure, and therefore, as Hovdhaugen (Case and Gender in PIE) does, invoke a "subject transformation," or simply a nominal subject, the fact remains that in all attested I. E. languages besides Hittite, and perhaps the other Anatolian branches, neuter nouns do serve as the subject of transitive verbs, as Hovdhaugen himself acknowledges. More concretely, however, Hovdhaugen does provide evidence of the phenomenon noted by Schwyzer, and in a wider variety of languages: namely, that neuter subjects of transitive verbs, though attested, are relatively rare. This leaves us once again in the position of having to decide whether this situation reflects the lingering effects of an older outright prohibition of such structures, or merely the continuation of a tendency for transitive verbs to imply a degree of volition and agency on the part of the subject, and therefore to occur more naturally and frequently with animate subjects. A prohibition at some point in the prehistory of the proto-language, perhaps up to and including the point at which Anatolian separated, would account for the Anatolian data. It would also account, at least in part, for the identity of the nominative and accusative cases of neuter nouns, since there would never be occasion to employ a neuter accusative and a neuter nominative in the same construction. If a neuter appeared with an intransitive verb, it would be necessarily the subject, while if it appeared with a transitive verb, it would be the object; an animate subject, expressed or implied, must then be construed as the subject. Such a scenario is possible and is sometimes assumed (e.g. Beekes 1985; Luraghi 2011; Tichy 2007) though decisive evidence is hard to come by.

An Anatolian origin for the "ergative" *-ant-*

However, even if one accepts the hypothesis that there was, at some point in the development of the proto-language, a prohibition on the use of neuter nouns with transitive verbs, this still does not imply that the "ergative" / "animatising" *-ant* suffix is inherited. Indeed, if Garrett's explanation is correct, it *must* represent an Anatolian innovation, since the starting point would be the specifically Anatolian ablative ending **-anti* (Garrett 1990). Garrett chooses this form as a starting point, rather than the more common derivational suffix *–ant-* plus the nominative ending *-s,* in part precisely because it is an uncommon form, and therefore susceptible to reinterpretation, but also because of phonological considerations. In most circumstances *-*anti* and **-ant-s* would both yield *-anza* (/ants/) at the end of a word. However, before the enclitic *–(y)a -anza* regularly becomes /antsts=a/ with the gemmination of the final consonant, rather awkwardly written as *–anzass=a.* By contrast **-anti=ya* ought to have appear as *–anzi=ya* and this form is indeed attested, once in an ablative function, GUB-*anzi-ya*, and once in an ergative one, *i-da-a-lu-wa-an-zi-ya.* Garrett interprets both of these forms as archaisms, and explains the ergatives in *–anzass=a* as the result of analogy with the functionally similar, and in other environments phonologically identical nominatives in *–ant-s.* In point of fact, it hardly seems necessary to invoke analogy. If the synchronic form of the ergative was /ants/, it is presumably this form which would naturally be combined with the clitic, especially as there could be no other case forms to preserve an underlying stem different from the usual ending. The variants in *–anzi=ya* could only be the result of the direct preservation of the larger unit, rather than a synchronic formation[43].

Garrett's final piece of evidence for an **-anti-* as the original form of the ergative seems more problematic. He notes that of the two possible vocative forms of *n*-stems, *-anta,* and *-anti,* the latter seems to appear specifically with "ergatives" while the former is characteristic of true *nt*-stems. This is confusing on two levels: in the first place, it is difficult to see how one can have a vocative of an ergative. If the ergative is a true case form, then the ergative and the vocative ought to be mutually exclusive. In fact,

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[43] Garrett (p. 273) does however note that there have been alternative explanations offered for the forms in *-anzi=ya* which do not presuppose a starting point **-anti.*

the correlation between "ergatives" and the vocative form, if genuine, would seem to speak strongly in favour of interpreting –*ant*- as a derivational (animatising) and not a morphological suffix. Secondly, if **anti#* > *anza#* (/ants/) by regular sound change, there seem to be two possible explanations of the vocative in –*anti.* Either the vocative was created after the sound change ceased to be effective, or else its phonological starting point was not –*anti.* If the former possibility were correct, -*anti* could perhaps have been reintroduced to ergative vocatives (however that is to be interpreted) on the analogy of a few forms, such as the examples cited above, in which the –i was exceptionally preserved. However, if that were the case, is it still unclear why a) the *i* was restored only in the vocative, and b) why one finds –*anti* rather than -*anzi.* If the latter possibility, namely that –*anti* has a different historical origin from the ergative –*anza*, is true, as seems more likely, it is hard to see how the vocative can bear on the original ergative form.

Whether or not one accepts Garrett's explanation, in all or part, of the Anatolian ergative, the fact remains that there is little extra-Anatolian evidence for a PIE "ergative" suffix -*ant*-. Lindeman hypothesizes that, once the morphological/syntactic function of the suffix became obsolete, i.e. once neuter nouns could stand as the subject of transitive verbs, it became conflated with the common neuter suffix -*man*-, and that this conflation could result in the etymologically unexpected, or at least unexplained, -*t*-s which appear most often following a nasal suffix in a variety of forms.

Lindeman's explanation is, however, quite vague on details, and when one tries to fill them in, one runs almost immediately into difficulties. Without some evidence for the existence of a PIE suffix –*ant*- added to neuter nouns, one might reasonably be hesitant to invoke it to explain forms that do not in fact show this formation. And if one searches for possible direct evidence of such a suffix, one is left essentially only with, possibly, the season names of winter and spring.

PIE *-*ent*- (take two)

The only actual example which Lindeman adduces for a PIE suffix –*ent*- is the word for spring. However, there are difficulties with every step of his proposed development. His starting point is an -*r/n*- neuter **wes-r/n*-. This form was first

reconstructed by Brugmann (Grundriss 580) and has been frequently assumed since (NIL refs. p. 359), although not directly continued in any attested language. More problematic is Lindeman's suggestion of a full grade suffix *wesen-* in the oblique cases. Nouns with a simple *-r/n-*suffix follow an acrostatic paradigm, with a zero grade of both suffix and ending, except, perhaps, in the locative (Schindler 5, 6). A second, less well-attested type presents a lengthened grade in the nominative singular of the root. (Schindler p. 6 Kloekhorst strongly disagrees). It is true, however, that this acrostatic paradigm seems at times to have been transformed into the proterokinetic patterns found in the complex suffixes -Cer/n, so Lindeman's *wesen-* may be accepted as a subsequent development.

The next difficulty with Lindeman's proposal comes with his analysis of the "ergative" -*ant-* suffix into this oblique stem -*en-* plus an "élargissement" -*t-*. Were this analysis correct, alongside forms such as Hittite *eshar,* genitive, *eshan-as* one ought to find an "ergative" *esshan-t-s*. The attested forms are *esshan-anza/ ishan-anza*. In the same way *wes(en)-* should yield **wesen-ent-*. Among the numerous formations to which the root *(h₂)wes-* gave rise, none derive from such a form.

In order to account for the attested Hittite forms, Lindeman takes a detour. Citing Meillet (1903, 311), he argues for a suffix -*en-* which appears not only in the oblique forms of *r/n-*stems nouns, but also of neuters in -*eu-* and -*es-*. A significant difficulty with this argument is that, unlike *r/n-*stems, which are attested in only mildly refashioned form in several languages, the other "alternances," postulated by Pedersen (1893) and taken up enthusiastically by Meillet (1903) and especially by Benveniste (1935) , are much more elusive. Several accounts (e.g. Szemerényi 1996; Meier-Brügger, Fritz, and Mayrhofer 2003) eliminate them altogether from the list of stems types of the parent language. Beekes allows for one *l/n-*stem, that of the word for "sun", but no others (2011, 187). This word does indeed appear to be a special case. No other *l/n-*stems can be adduced, and no other satisfactory explanation of the attested forms of the word "sun" has been found. Other discussions overtly refute the notion of heteroclitic types other than -*r/n-* (Adrados 1991; Álvarez-Pedrosa Núñez 1990, 1991).

The evidence in favour of reconstructing such paradigms falls into two categories: the first, a collection of roots that show, in different branches of Indo-European, different

stem forms, usually including an -*n*- stem that is taken to reflect the original oblique stem. The objection to this way of proceeding is obvious: by such means one could easily make a case, not only for the existence of the types proposed, but equally well for almost any pairing of stem forms one chose e.g. one could assemble several roots from which both *i*- and *s*-stem forms are attested, and on this basis, reconstruct a category of, for instance *i/s*-stems. (This same failing applies also to some of the specific *r/n*-stems proposed by Benveniste and others. Although the fact that a *r/n*-class can be assumed does lend a higher degree of plausibility, the mere fact of the same root serving as the base of both *r*- and *n*-stems in different languages is very weak evidence for the existence of an original heteroclitic (Wachter 1997). The case of simple neuter *n*-stems is slightly different, in so far as the evidence for a non-heteroclitic neuter suffix -*n*- in PIE is itself very weak.)

The second category of evidence, no more compelling than the first, is based on nouns which show an *n*-form sometimes or always in some or all oblique cases, but where this –n- appears only in a single language. In most of these cases, the language in question is Vedic, and this extension of –n- into the oblique forms of other stem classes is better interpreted as a specifically Vedic innovation, in some ways parallel to Greek's numerous secondary –t- stems. Adrados, argues in favour of a type -Ø/n- gives *ás, ās-doṣ doṇás [sic=doṇás ?] yūṣ, yūṣṇás* as well as gr. kara, *kraatos, ous, ouatos* (p.13). Neither of the Greek forms require, nor indeed benefit from analysis as an ø/n stem. The other examples are, of course, all Vedic. To this list, Adrados adds the putative --*i/n*-stems *ásthi, asthnás, dádhi, dádhnas, sákthi, sakthnás*. Pedrosa argued convincingly that the –i- in all these stems is traceable to a final laryngeal, belonging to the root, so that the structure is in fact -ø/n-. However, once again the evidence for the -*Ø/n*- alternation is confined to Vedic.

Even if we admit, for the sake of argument, that there may once have existed the declension types –*s/n*-, -*eu/n*- etc. that Lindeman assumes, we still encounter difficulties. The next step in Lindeman's argument is that to such a stem, a suffix -*t*- could be added, followed by the nominal -*s*- and yielding a new animate noun, synonymous with the original neuter but which could serve as the agent of a transitive verb. For instance, to a neuter **wesar, wesen-,* "spring" could be formed an animate **wesen-t-s*. Traces of such a

formation would be reflected in the Vedic adverb *vasántā* "in the spring." This stem would then have passed to the thematic declension, yielding the attested masculine *vasanta-*. The same stem would have survived in proto-Celtic **vasant- < *vasṇt-* yielding O Welsh *guiannuin*, O Cornish *guiaintoin*. (Lindeman does not explain why the animate form, which occurred originally only in the nominative, should display varying ablaut grades.) This example works quite nicely, because there is indeed evidence for an animate stem in **-ent-/ -ṇt-* alongside, probably, a simple neuter. (The relationship of Hittite **gimmant-* c. to these forms is complicated.) It is, however, virtually the only example in which this is the case, and the only one either Lindeman, or Neu, who takes up Lindeman's theory, bring forth.

In other cases, Lindeman argues, the original pairing of a neuter with oblique cases in *-en* and an animate form in *-ent-* has been obscured by subsequent refashioning after the syntactic prohibition of neuter agents ceased to be in effect. Thus, he argues, besides the neuter *-r/n-* **wódṛ* (his reconstruction) there existed an animate **udént-s/ *udṇ́t* (apparently using Vedic *pitúh* as a parallel for the accented zero-grade suffix). Later, an animate noun no longer being required for syntactical purposes, the *-t-* extended form reverted to the neuter gender and thereby became a simple variant of the original form. This theory does indeed provide an explanation of why in Vedic, and possibly in Armenian, the *-t-* appears only in the NA. What it does not explain is how this *-t-* comes to attach itself to the *-r-* stem. It would be simple enough to imagine an originally animate NA sg. **yekʷent-,* or **yekʷṇt-* (which presumably lost the ending *-s* when it became incorporated into the neuter paradigm, replacing **yekʷṛ* beside genitive **yekʷn-es*, but it is harder to see maintaining the *r/n*-variation, while adopting the *t-* from the *n-* stem.

At this point, Lindeman returns to Hittite forms. He points to GIS-*ru-wa-an-za* **darwant-s* beside the locative singular *tarui,* which he interprets as *darw* + ending <**dṛw-*. He argues that the form should be analysed diachronically as **dṛwen-t-s*, but that since Hittite lost the *n*-stem of the oblique cases, it was reinterpreted as containing an ending *-ant-s*. It is however, by no means certain that the *n*-suffix seen in the Sanskrit genitive *drunas* is original. The secondarily abstracted suffix *-ant-* then replaced the original *-t-*, leading to the attested Hittite forms *ishan-anz, c.* beside *ishar, eshan-* or *u-i-*

te-en-an-za /widanenz/ c. N sg. Next to neuter *watar, witen-*. One notes that the very Hittite form which was the starting point of the entire theory, namely the animate/ergative suffix *–ant-s-*, is now argued to be a secondary, analogical development, while the proposed original forms are nowhere directly attested, (though GIS-*ru-wa-an-za* comes closest.)

Although the broad scope of Lindeman's theory is attractive, offering as it does to connect the *–t-* of the Greek *–n-* and *–r/n-* neuters, the final *-t-* of Skt. *yarkrt* etc., the Hittite "ergatives" and a variety of other *t-* and *nt*-formations, there is too little direct evidence to support it, and too many doubtful assumptions required to preserve its coherence. That some stage of early PIE prohibited neuter agents of transitive verbs is possible, though quite speculative. But when one goes searching in the non-Anatolian languages for traces of an "animatising" / "ergative" suffix parallel to the Hittite forms, the only case of an animate form in **-ent-* next to a neuter is the possible example of **wes-ant-* (as continued in Celtic) formed to **wesr / *wesen-*. There is no evidence that **wes-ant-* fulfilled the syntactic purpose of the Hittite forms, and in order to equate **wes-ant-* with, for instance, *ishan-anz,* one has to assume that the latter form, the only clear instance of the formations under discussion, has to be considered as later analogical reworkings. One must therefore dismiss any direct connection between the Hittite "ergatives" and the *-mat-* which is our concern.

Other PIE heteroclitic declensions

The issue of other possible heteroclitic declension classes requires a little more comment. In particular, Lindeman is by no means the only one (e.g. Pedersen 1893; Meillet 1903; Chantraine 2002, 96; Benveniste 1935) to wish to connect the *-n-* of Skt. *janu-* and *dru-nos* with the *–at-* of the Greek forms such as γόνυ, γόνατος, δόρυ, δόρατος, and extrapolate therefrom an original *-u/n-* declension. The first thing which should be noted about this proposed alternance is that it is not strictly parallel to the *r/n*-stems. The *-n-* of the oblique cases does not replace, but merely extends the stem of the NA sg.. It would in fact be more accurate to speak of an *-u/un-* alternation. The same holds true of the proposed *-i/n-* and *-Ø/n-* types. A second difference is that while the existence of non-heteroclitic PIE neuter *r*-stems is debatable (they occur in Hittite, where Sihler considers

that they represent a PIE class (2008)) and a simple neuter *n*-suffix is equally elusive, neuter *u*-, and *i*-stems, though far from common, have clear reflexes in all the daughter languages. If assumed for PIE, the *-u/n*-stems must be treated, as *per* Pedersen, Benveniste and others, as relics of an earlier systems, or as a subclass of neuter *u*-stems (which perhaps comes to much the same thing, synchronically), or else as an being already an optional variant in the parent language.

γόνυ and δόρυ

The evidence for such a *u/n*-class comes principally from Vedic and Greek. The difficulty, is that, were one analysing either the Greek or the Vedic evidence separately, one would certainly conclude that the -n- forms were an innovation. In Homer, and indeed in the *Iliad*, one finds:

Table III.   Forms of γόνυ occurring in the Iliad

	Singular	Plural
Nominative/ Accusative	γόνυ	γοῦνα, γούνατα, (γούνατ᾽, γούναθ᾽)
Genitive	γούνατος, γουνός	NA
Dative	NA	γούνασιν, γούνεσσι(ν)

In any given case, a digamma would yield a metrically equivalent form.

The relative frequency of *-t-* and *t*-less forms varies from case to case and word to word; no clear preference is apparent. Since none of the variants are metrically equivalent, one has to assume that whatever the origin of the doublets, the poet took full advantage of the metrical opportunities they offered.

After Homer, from Hesiod on, the unextended forms vanish almost without a ripple until they are revived by the Alexandrian poets[44]. The Attic and Ionic extended

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[44] After Homer, the next t-less form is Eudoxus' *γοῦνα* (fragment 70, 7). A plural *γούνατα* occurs in line 1 of the same fragment. Eudoxus also uses Attic forms. Theocritus employs a startling variety of forms: *γούνασι* 13, 53; *γονάτεσσι* 16,11 *γούνατι* 24, 76;

forms occur more or less as expected, i.e. in prose, Ionic writers, and writers in an Ionic-influenced genre[45], use the lengthened forms, and Attic writers use the short vowel forms. In drama, the long vowel forms occur as well, either as a deliberate epic colouring, or perhaps purely for metrical convenience (Euripides three times ends a line with a G plural *γούνατων* inadmissible in hexameter but very convenient in iambics.) Tyrtaeus uses *γούνατ᾽* (Fragment 10. 19). Alcman has *γούνατα* (fr. 85).

Table IV.   *δόρυ* and *γόνυ* in the Iliad and Odyssey

δόρυ (59 attestations)		γόνυ (5 attestations)	
δουρός (19)	δούρατος (1)	γουνός (2)	γούνατος (1)
δουρί (134)	δούρατι (2)	-------	--------
δοῦρε (13)	(*δούρατε 0)	------------	---------
δοῦρα (20)/ δοῦρ᾽ (2)	δούρατα(8)/ δούρατ᾽ (9)	γοῦνα (13)	γούνατα (13) γούναθ᾽ (11) γούνατ᾽ (31)
? δούρεσσι (2)	δούρασιν (1)	γούνεσσι (2) / γούνεσσιν (1)	γούνασι (13)/ γούνασιν (5)
δούρων (2)	(δουράτων (0))	----------	-----------

However, whatever conclusion one might be tempted to draw from the distribution of the forms of *γόνυ* are severely undermined by the attestations of *δόρυ*. The Attic *un*extended forms (i.e. *δορός, δορί, δόρα*) are liberally attested.

Table V.   Forms of *δόρυ* occurring in the Iliad

	Singular	Dual	Plural
Nominative/ Accusative	*δόρυ*	*δοῦρε*	*δοῦρα* *δούρατα* (*δούρατ᾽*)
Genitive	*δουρός* *δούρατος*	NA	*δούρων*
Dative	*δουρί* *δούρατι*	NA	*δούρασιν* (<*δορϜατσιν*) *δούρεσσι*

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[45] Herodotus, early philosophy, Empedocles, Hippocrates and the Hippocratic corpus.

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Hesiod uses *δουρί, δοῦρα* as well as *δούρατ' δούρατι, δούρασ'*. Archilocus has *δορί* as well *δούρατ'*. The reasons for the lack of lengthening in *δορί* are unclear. Tyrtaeus uses both *δουρὸς* and *δούρασί*. In Alcman *δουρὶ* is once attested, as also in Anacreon. Pindar has as a dative singular both *δορί* (twice) and *δουρὶ* but a genitive singular *δούρατος*. In drama, the dative singular *δορί* genitive singular *δορός* are by far the most frequent forms. A dative singular *δόρει* also appears. A nominative, accusative plural *δόρη* is twice attested, apparently on the analogy of the *s*-stems. A G sg. *δόρατος* occurs once in Aeschylus. Simonides uses *δούρατι* and *δουρὶ* once each. The unextended forms are not confined to verse. Thucicdides uses *δορί* as well as *δούρατος*. Herodotus has *δόρατά, δόρασι* but also *δουρὶ*. Sophocles has *δόρατος and δόρατι,* once each, but the unextended forms are much more frequent. The situation in Aristophanes is similar. The unextended genitive and dative singular also occur in various fragmentary historians. When one comes to Xenophon, by contrast, one finds only extended forms. Plato also has only extended forms. In the orators, the extended forms predominate, but one also finds *δορός*, e.g. Lycurgus, *in Leocratem* 100.134. Aristotle uses only the extended forms. However, in the Hippocratic corpus, which uses only forms of the *γούνατος* type one finds not only *δόρατι, δόρατος* (without vowel lengthenning) but also, *δόρι. (*De semine, de natura pueri, de morbis IV. 24. 18.)

The unextended forms reappear in Theocritus, who uses both types, always with lengthened vowel. Callimachus and Apollonius of Rhodes exploit the full range of Homeric forms, while Lycophron uses the Attic (i.e. short vowel), unextended forms. Unlike in the case of *γόνυ,* however, such forms seem to be simply archaic, rather than truly obsolete. One explanation of the difference between the attestations of the two words could lie in their use. In the case of *γόνυ* the plural is much more frequent than the singular, for obvious reasons given the demise of the dual. In the case of *δόρυ,* however, the dative of instrument, and genitive singular as in *γέρας δόρος, μάχη δόρος* etc. are extremely frequent, especially where war is the subject, in varying degrees of literalness or metonymy. One could argue that the simple frequency with which the forms, *δορί, δορός* were used helped ensure their preservation. Unextended plural forms are relatively rare, and the use of nominative, accusative plural *δόρα* could be explained by its clear relation to the singular. What this does not explain is why, starting with Homer, there is

such a marked preference for the unextended forms of the dative, and to a slightly lesser extent, of the genitive singular. In the *Iliad* alone, δουρί is used 134 times, δούρατι twice. The situation is less extreme for the genitive, but still, there are 19 occurrences of δουρός, to 2 of δούρατος. One explanation would be that the *t*-extension began in the plural, and only partially spread to the singular forms. This is what Brugmann and others argued was the case with ὀνόματα and the like, since only in the plural did the thematic and athematic endings overlap. (As we have seen, there are difficulties with this hypothesis.) But even if such reasoning is correct, it does not seem to transfer to δόρυ.

From such a distribution, it appears that the variants in *-at-* become the regular forms in post-Homeric Greek. Combining this trend with the fact that the *t*-extension in the oblique cases of neuters is gradually extended to more forms in which it was certainly not original, e.g. neuters in *-ασ-*, which in Homer inflect as pure *s*-stems, the natural conclusion is that in the case of the two *u*-stems also the *at*-forms are secondary, and gradually displace the original forms. It is also worth noting that no derivatives in Greek give any hint of an original *n*-stem such as one finds in ὀνομαίνω. Furthermore, Sappho's use of γόνα and Alcaeus'of γόνασι suggest that the *-ατ-* of the Homeric form may have originally developed within Attic-Ionic (Anghelina 2004, 30). Tyrtaeus uses δουρί and δούρασι, Alcman δουρί.

An alternative would be to assume that the *-t-* did not necessarily make its way into *δόρυ and γόνυ* at the same time. Since the two words form a more or less isolated pair in Greek, (neuter *u*-stem with *o* in root) any change affecting one would likely spread sooner or later, to the other as well. If one examines the attestation of γόνυ in the *Iliad*, one finds that γόνυ appears 5 times, γονός twice and γόνατος once. By contrast, extended plural forms occur 67 times, and unextended forms only 16. One could extrapolate, therefore, a phase in which a *-t-* (from whatever source) had become frequently, if not uniformly, inserted into the oblique stem of γόνυ, but not into that of δόρυ. The parallelism of the words, combined with metrical expediency, ensured a fair degree of cross-contamination. However, since γόνυ was overwhelmingly employed in the plural, it was the plural forms of δόρυ which were the most likely to be remodelled after it, leaving the very frequent oblique cases of the singular most often unchanged. Given their high frequency, the forms δορί, δορός resisted in large measure the growing popularity of the

at-extension. However, a second element may have come in to play, which would be the model of *s*-stems, but only after Homer.

Sanskrit Neuter *n*-stems

Such a scenario, namely that the extension of the oblique cases of *γόνυ* is earlier, and that *δόρυ* was remodelled to match, would fit well with the observation that body parts seem to frequently show an -*n*-/-*nt*-/-*at*- extension in the oblique cases. Not only do names of body parts, and related words, comprise a significant portion of the -*r/n*- stems, a number of other words, such as Skt. *akṣi, akṣin*- Gr. *οὖς, κάρᾱ,* also show, at least in some languages, an *n*-extension in the oblique cases. One wonders, then, how the Vedic/Indo-Aryan evidence might strengthen or weaken such a case. (However, even if one comes to the conclusion that Greek and Sanskrit developed separately the extension of the two *u*-stems, and indeed that the Greek -*at*- was not introduced until after the vocalisation of the nasal in the *men*-stems, and so, in the case of *δόρυ, γόνυ* does not continue a nasal, it is still possible, that within the history of Greek, *γόνατ*- was the precursor and basis for *δόρατ*-).

In Sanskrit the situation is complicated by the fact that the -*n*- does not spread with equal speed or persistence to all case forms. Furthermore, like the Greek -*at*-/-*t*- which spreads to a wide variety of forms where it cannot originally have been at home, particularly in neuter nouns, and particularly where the original form would lead to hiatus or contraction, a non-etymological -*n*- appears in a large range of Sanskrit forms, mostly neuter, apparently primarily as a means of avoiding hiatus. As early as Bopp. it was noted that this -*n*- did not seem likely to be inherited, insofar as it was relatively rare in the Vedas, and became increasingly prevalent in the later language (Debrunner and Wackernagel, Jakob 1930, III.1:3). However, the identification of the -*at*- of the Greek forms as the reflex of *-*n̥t*-, partially reopened the question. A further complication, in Sanskrit, is the fact that an -*n*- comes increasingly to characterise the flexion of all neuter *u*- and *i*-stems. The early stages of this process are already at work in the Rigveda, and it is complete by the classical period.

The classical declension of neuter *u*- and *i*-stems substantives is as follows. Neuter adjectives may be declined either after the pattern of substantives, or with the exception of the NAV of all numbers, be declined identically to the masculine.

Table VI.   Classical Sanskrit neuter *u*-stems

	Singular	**dual**	**plural**
Nom. Acc.	madhu	madhunī	madhūni
Instrumental	madhunā	madhubyām	madhubhis
Dative	madhune	madhubyām	madhubyas
Ablative	madhunas	madhubyām	madhubyas
Genitive	madhunas	madhunos	madhūnām
Locative	madhuni	madhunos	madhuṣu

In the Vedas, one finds that, in the singular, the *n*-forms are already present, though alongside *n*-less forms, both with and without gunated (full-grade) vowel of the suffix[46].

Table VII.   Vedic neuter *u*-stems, singular

Singular			
Nom. Acc.	*mádhu* (formed by 68 stems, used 400+ times in RV)	*mádhu*	*NA*
Instrumental	*mádhvā*		*mádhunā* + 14 other stems
Dative	*páśve*	*uráve, viśvāyave*	*mádhune, kaśipune* (AV)
Genitive	*madhvás, vásvas*	*urós, kṣós, gúggulos* (AV), *cāros, mádhos*	----------

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[46] Data from *A Vedic Grammar* (MacDonnell 1910, 294–99).

		(AV), *vásos, vā́tsos*	
Ablative	*madhvás*	*urós, drós, mádhos, sānos, svādós*	*mádhunas, sānunas*
Locative	*sānavi* (9x)	*mádhau, arajjáu, uráu, ghṛṣau, pṛtháu, mádhau, vásau, vīḷau*	*āyuni, sānuni, madhuni, drūni, dāruni (AV)*

The dual is very scantily attested in the Vedas. Besides the nominative *urvī́,* it is attested only by forms of *jā́nu,* and only outside the Rigveda. If the declension of *jā́nu* is in anyway atypical, we have noˊbase for comparison by which to detect the peculiarity.

Table VIII.   Vedic neuter *u*-stems, dual

Dual			
Nom. Acc.	*urvī́*	------	*jā́nunī* (VS)
Instrumental	------	------	------
Dative	------	------	------
Genitive	------	------	*jā́nunos* (AV)
Ablative	*jā́nubhyām* (AV)	------	------
Locative	------		------

The n-declension seems to have made fewer inroads in the plural. *N*-forms are to be found only in the NA and G, in which position an *n*- occurs in the -a stems as well.

Table IX.   Vedic neuter *u*-stems, plural

Plural			
Nom. Acc.	*ṛjú, cā́ru, tri-dh́tu, purú, bahú, mádhu, vásu, vīḷu, sā́nu,*	*urū́, purū́, vásū, vīḷū,* (28x)	*aghāyū́ni, ayū́ṇi, dā́rūni* (+16, 127 times)

	su-dhā́tu, su-hántu (48x)		
Instrumental	*mádhubhis* + 8		
Dative	*sā́nubhyas*		
Genitive	------		*mā́dhūnām, vā́sūnām, yā́śūnām*
Ablative	-----		------
Locative	*urúṣu, vā́stuṣu, śmā́śruṣu, sā́nuṣu, snúṣu* (VS)		

With the exception of the oblique cases of the dual, which occurs solely with *jānu-*, none of the *n*-forms are attested only for one of the nouns under discussion, i.e. only for *jānu, dāru* which though without Greek cognates has sometimes also been included in the proposed **u/n*-class. Nor if one looks at the entire set of neuter *n*-stems do these two nouns seem in anyway atypical. They are not noticeably overrepresented among the *n*-forms or underrepresented among the *n*-less forms. Therefore, there is no basis for assuming that it was in fact these words which gave rise to the *n*-forms. In short, in Sanskrit as in Greek, the evidence suggests that *jānu* and *dāru* originated as regular *u*-stems, and that the consonantal forms are secondary unrelated developments in the two languages. In fact, if one eliminates the connection to the Sanskrit forms, there is no reason to suppose that the Greek forms ever contained an -*n*-. -*at*- may well have been added to the stem as a unit, after the vocalisation of the nasal, as occurred also in neuter *s*-stems.

If these hypotheses seem unsatisfactory, one must consider other explanations. Neither Kiecker's nor Thurneysen's proposal require much more detailed commentary. While neither can be rejected out of hand, accepting the model of a single word as the bases for reshaping an entire declensional class seems a solution only to be accepted if one can provide no other plausible alternative, the more so since neither analogy

proposed, *νυκτός* : *ἤματος*, or *μέλιτ-* : *αἷματ-* is in fact very close. One can easily imagine, though, such forms playing a secondary role in facilitating the spread of -*t*- once it was introduced by some more compelling means.

An origin in the **r/n*-stems? *yakṛt =*ἤπαρτ*

One possible means proposed was to assume that the -*t*- originated not in the nouns in -*μα* -*ματος,* at all, but rather in the *r/n*-stems, such as *ἧπαρ, ἤπατος,* where the -*t*- in Greek is also ubiquitous from the earliest records. The reason for this choice of starting point is that in certain *r/n*-stem nouns, Sanskrit forms show a -*t*- in NA sg. The nouns in question are: *yakṛt, yaknos* and *śakṛt, śaknos.* That the -*t*- might be PIE rather than a Sanskrit innovation is suggested by the Armenian forms *skeard, neard,* and possibly, *leard.* That this last is in fact directly cognate with Skt. *yakṛt,* Gr. *ἧπαρ,* etc. is doubtful.

Attempts to explain the Greek -*t*- by relating it directly to the Sanskrit hinge on two points: the first, whether the -*t*- found in Sanskrit is in fact inherited, and the second, if it is inherited, is there some plausible mechanism by which the -*t*- (which in Sanskrit appears only in the NA sg.) could have found its way into the oblique cases in Greek?[47] (A final -*t* in the NA sg would of course, have been lost through regular phonological development, so there is no need for a specific explanation of its absence.) The first question is the more complicated. However, if the answer to the second is question is "no," the first is no longer of direct relevance to the problem at hand.

At present, it appears that the answer to the second is no. It is easy enough to imagine the -*t*- being carried through the paradigm. The difficult part is explaining why the -*r* was not generalised as well[48], i.e. a paradigm, * *ἧπαρτ,*ἤπνος* could quite easily be refashioned to **ἧπαρτ,*ἤπαρτος,* but a remodelling of * *ἧπαρτ,* ἤπητος* seems highly improbable, and in fact, no one has suggested a means by which it might come about.

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[47] Logically, one should also consider the possibility that the -*t*- originally appeared in all the cases, and that it has somehow been lost from the oblique cases in Sanskrit. However, explaining how the -*t*- could have been extracted from a form such as ***yakṇt-os,* while being retained in *yakṛt,* is not a task which any one, to my knowledge, has wished to attempt.

[48] Pedersen's objection (1893), and Schmidt's (1889, 178).

Instead, Fick tried to account for the *-t-* by assuming that the *-r-* *was* carried through the paradigm, and that ἤπατος in fact reflects *ἤπαρτος (1880a). In support of such a development, he pointed to Cretan πορτι beside Doric ποτί. This suggestion was already, rightly, dismissed by Schmidt, who noted among other things, that πορτι is not the original form of the preposition (1889, 184). When it became clear that *-Cat-* was in fact the regular phonetic development of *-Cnt-* this explanation became yet more untenable, and does not seem to have been revived since. On the other hand, Oettinger, among others, has proposed more indirect means to connect the two problematic *-t-*'s, that of *yakr̥t,* and of ἤπατος, which will be discussed later in the context of his overall theories (1980, 2001).

An ablative -tos? δώμα-τος

In 1880 Fick drew attention to the fact that, in a few forms at least, the *-t-* of the Greek stems under discussion might not be an innovation, but in fact very old (1880b). He noted that the genitive singular *-ματ-ος* would be identical to the ablative suffix *-tos*, found in Greek ἐντός, ἐκτός Latin *intus, caelitus,* Sanskrit *antitas,* Old Irish *acht*. From this starting point, he argued that since the genitive had subsumed the functions of the ablative in Greek, a form such as δώμα-τος "from the house" could be reinterpreted as a regular genitive singular from a stem δώματ- NA δῶμα. He further argued, that since the -t- resulted in a more uniform, phonologically straightforward paradigm, it was then generalised and carried through the other cases. The chief arguments against this explanation are that first, that there is little evidence that the suffix *-tos* was, within PIE or Greek, attached to noun stems and second, that the ablative singular, especially a variant thereof, seems an odd starting point for remodelling the entire paradigm, even if it does result in greater transparency.

The second point does not require any elaboration, but the first is more open to discussion. Certainly, in Latin one finds a number of adverbs including *caelitus, funditus, penitus,* which are clearly formed to nominal stems. Indeed, they significantly outnumber the deabverbial *intus, subtus*. In Sanskrit, one similarly finds a number of adverbs formed with an adverbial *-tas* to both nouns and pronouns, e.g. *mukha-tas, dūra-tas, ta-as*. The

question becomes whether such forms should be treated as secondary. Leumann (p. 500 with refs) suggests that only *entos, as the only form continued in more than one language, should be reconstructed for PIE, and that the use of -tos as a suffix developed independently. He sketches out a plausible scenario by which the suffix might have spread within Latin, first to other prepositions (e.g. *subtus)* and then to nominal bases by means of a series of analogies within the history of Latin. For example, he argues that Plautus' *penitus ēgredī* was directly modelled the synonymous *intus ēgredī* which Plautus also uses. He notes however, that the Romance languages have continued only the inherited *intus, subtus.* This observation could imply that the more widespread use of the suffix was restricted to a higher register of language (although, on the other hand, it seems frequent in comedy.) In Sanskrit, the development would be similar, with the suffix being first attached to prepositions/ adverbs, yielding forms such as *antitas, abhitas.* Avestan *aiwitō,* which is cognate with *abhitas,* suggests that this first phase should be dated to Indo-Iranian. Within the Rigveda, however, one also finds pronominal stems, e.g. *ta-tas, i-tas.* In the later Vedas one finds nominal stems being similarly employed: Rigveda *na antitas, na dūrāt* corresponds to Atharvaveda *dūratas.* Unlike in Latin, the expansion of forms in -tas at the expense of the inherited ablative continued into Middle Indic, where -tas or -tō has become a regular nominal ablative ending. (Delbruck Altindische Syntax 197-200, Brugmann II, 2, 730). In Greek, there is no evidence that *-tos was ever used except with prepositions.

Fick includes *u*-stems such as *δόρυ, δούρατος* as examples of the same development. He does not, however, attempt to explain the final -t in Sanskrit *yakṛt, et sim.* by the same means.

An ablative *-tos (2.0)

In 1980, Oettinger revived Fick's theory in a slightly modified form (1980). Fick had assumed that the confusion of -tos, and -os occurred within Greek, as the genitive subsumed the functions of the ablative. In his contribution to *Serta Indogermanica, Festschrift für Günter Neumann,* Oettinger argued (in the past tense; this article does not represent Oettinger's final word on the subject) that the ablatival suffix *-tos could explain not only the *t*-extension in Greek neuter *n*- and *r/n*-stems, but also a number of

other fluctuations between *t*- and *t*-less stems, particularly in Anatolian, but also in Vedic and other languages. In support of this claim, Oettinger draws attention to a handful of original, or likely original, *n*-stems in languages besides Greek which also show a *t*-*Erweiterung*. Some of these forms agree between languages. Oettinger therefore postulates that the *t*-extension must be of Proto-Indo-European date. He sees it as an optional variant, which that the daughter languages for the most part eliminated, but occasionally retained, or, in the case of Greek, even generalised. As to the source of the -*t*-, Oettinger follows Fick in seeing it as the result of a mistaken segmentation of -*n-tos* into -*nt-os*. However, because he posits a much earlier date for the original confusion, he is able to include in his analysis forms such as *yakr̥t,* which Fick considered a separate issue.

Oettinger's main evidence for a *t*-extension outside Greek, and therefore for a Proto-Indo-European date for its development, is of two types, examined below.

a) Sanskrit forms such as *yakr̥t* which have a -*t*- only in the NA sg., and Armenian forms *leard, neard* which have -*rd*- throughout the declension. These forms contrast, as Oettinger notes, with forms such as Armenian *hur,* G *hroy,* "fire" which have also generalised the -*r*-, but have no dental. Latin *mūscerda, suscerda* which may plausibly be analysed as *mūs-scerd-a, su-scerd-a <*-skr̥t*- should perhaps be included in this category as well.

b) Anatolian, where, Oettinger argues, there are once again traces of a *t*-extension of neuter *n*- and *r/n*-stems. Specifically, he points to cuneiform Luwian, *tummant -n*. "ear," in distinction to the *t*-less Hittite common gender form *istaman/istamen*-.

With respect to a), as noted above, the difficulty with deriving the *t*- in these forms by the same process as the *t*- of the -*men*- stems lies in explaining either how the *t*- of the nominative accusative spread throughout the paradigm, while the -*r*- did not, or else, how the -*t*- became separated from the oblique cases in Sanskrit. Oettinger opts for the latter, but does not in fact supply a solution or even directly address the question. One possible answer would be to argue that the suffix -*tos*, being a derivational, adverbial suffix and not truly inflection, could be added to the nominative stem. There is, however, no direct evidence that this was the case, and if *yakr̥-tas,* or its Proto-Indo-European

equivalent could be analysed as the ablative form from which a stem *yakṛt-* could be abstracted, one would expect such a stem to appear throughout the newly fashioned paradigm, and not become restricted to the nominative, accusative. It seems, therefore, that this set of evidence has no direct bearing on the issue.

With respect to b), despite the difference in meaning, Oettinger takes *tummant* to be cognate with Greek στόμα, Avestan *staman-* (m.) "muzzle", Welsh *safn* "chin," and derives both from *sth₃-mn-t-*. That the words are in fact cognate is debatable. Frisk relates στόμα to *staman-* and *safn,* but separates them from the Anatolian forms, which instead he considers related to the Germanic word for "voice" Goth. *stibna, OHG stimna* etc. Even if *istamen-* is cognate with στόμα, it does not necessarily follow that the etymology *sth₃-mn-t-* is correct. A number of Greek forms, such as στομόω, στόμις, στόμιον, suggest that the *-m* belongs, or originally belonged to the root, and that the *-ma* form is secondary. The Avestan and Welsh cognates do show, however, that an *n*-stem is also old. Given that the Avestan word is masculine, it seems quite possible that the word was originally animate, with a simple *n*-suffix. This does not change the fact that the *-t-* of *tummant-* may very well be secondary. It does, however, distance the Luwian from the Greek, and increases the likelihood that whatever the explanation of the Luwian *t-* it is unrelated to that of the Greek. In fact, Oettinger goes on to suggest that *tummant-* was influenced by the flexion of *dāwant-* n. "eye," which contains not a *t*-extension, but according to Oettinger an *-(a)nt-* extension which may also appear in other words for body parts. Following this argument, it is unclear that the *t-* of *tummant-* can have any direct bearing on the Greek *t-* which concerns us.

Oettinger's second piece of evidence for an Anatolian *t*-extension to neuter *n*-stems is a Hittite word for "thirst", attested only in the dative/locative, *ka(-a)-ni-in-ti.* Oettinger derives this word from an earlier, unattested Hittite *r/n*-neuter *ganer, ganen-* meaning "das sich durstig Niederbeugen" (=sich niederbeugen?). This seems a rather convoluted meaning, and also a distinctly adjectival one for a heteroclitic noun, given that the majority of such nouns refer to concrete objects, divisions of time, or body parts. It would however account for the discrepancy in meaning between the *n*-stem derivative *kaniniи̯a* "sich beugen, hocken" and the *r*-based *kanerwant-* "durstig". Furthermore, according to Oettinger, the adjective *ganen-ant* can mean both "gebückt" and "durstig".

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In any case, the *n*-derivatives *kaninija* and *kanin-ant* seem to indicate that the *t-* is a secondary addition.

Oettinger also argues for a *t*-extension of certain animate Hittite nouns, namely *gimmant-* c. *"winter"* and *ispant-* c. "night". The second of these, *ispant-* appears to have Indo-Iranian cognates, namely the following: a) in Sanksrit, **kṣáp,* f. (from the Rigveda (N pl. *kṣapas* 70,7) onwards. In the Vedas, one finds (I sg. *kṣápā,* G sg. *kṣápas,* A pl. *kṣápas,* G. pl. *kṣápām,* (MacDonnell 1910, 217). Grassman also includes a *ksapā* f. which however, is represented in the Vedas only by the isolated instrumental plural *kṣapábhis* 349,7. That *ksapā* does not truly represent an independent noun, but rather a peculiar inflection of *kṣap*, is suggested by the fact that *kṣíp* f. "finger" has a parallel instrumental plural form *ksipábhis* (RV 809, 57) in place of the expected **kṣádbhis*. Unlike with *ksapā,* however, no other case forms as if from *kṣipā* are attested in post-Vedic literature.

In Avestan one finds *xsap* f., *xsapan-* f., *xsapā* f. (arguing for the reality of *ksapā*) and *xsapar-* nt., all meaning "night." All four words are first attested in the Young Avesta, although the cognates seem to guarantee the antiquity of the first formation, and likely of the third as well. *xsapan-,* which is perhaps closest to the Hittite form, occasionally appears as a neuter, which, given the presence of a neuter *r*-stem as well, has led some to argue for an original *r/n*-neuter. Bartholomae, however, notes that *xsapan-* is only neuter when used in conjunction with the genuine neuter *azan-* "day" and argues for an originally feminine *n*-stem.

Oettinger, in discussing the Hittite form, comments "Es liegt auf der Hand" that *ispant* cannot represent an *ant-* extension to an earlier Hittite **i(sp)-* (1980, 239). Rieken further elaborates; *isp-* is traceable to a zero grade of the root **kʷsep-*. The zero-grade formation- seems to presuppose an accented suffix and, since the ablaut rules which would produce such a form were no longer active in even the earliest stages of Anatolian, the form must belong to the parent language. Since **-ent-* was not a standard PIE substantival suffix, **-é/ón-* seems a good candidate for the original, especially in view of the Avestan *n*-stem. Kloekhurst simply analyses the word as *<*kʷsp-ent-*, containing the suffix *ent-* "which is well known from terms like *zēnant* (beside *zēna-,)* "spring" *hammeshant,* (beside *hammesha-*) "autumn) and *gimmant* (beside *gim(m)-*) "winter."

(2008, 404) without addressing the issue of whether the suffix should be further subdivided.

Oettinger's next example of a secondary *t*-extension is the word for "winter", *gimmant-* c. This is a particularly relevant case for our purposes, since the word has numerous cognates, including χεῖμα, -ματος. The evidence for an original *n*-stem *gimman-* is the denominative verb *gimmanie-mi* "to pass the winter." Oettinger sets out two potential objections:1) that *gimmant-* should be analysed as *gimm-ant-* i.e. an extension in *-ant-* to the root noun underlying the DL form *gi-e-mi* "in winter" and 2) that *gimmanie-* should be interpreted as *gimm-anie-* built on the same root noun. The forms attested are:

a) *gimmant-* c. several case forms

b) g]*i-ma-an* (paired with *ha-me-es-ha-an* "spring") A sg. *gi-em-i, gi-mi, gi-im-mi* loc, sg.

c) *gi-ma-ni-(e)-it* 3rd sg. aor. ind act. (Old Hittite only)

d) *gimmantariye* – "to pass the winter" (New Hittite only, several forms attested.)

The abstraction of a PIE *$g^{h}éy$-om-/ ém-* meaning either "winter" or "snow" seems clear (Wodtko, Irslinger, and Schneider 2008, 162 ff.) The base form yields however, a quite bewildering variety of near but not identical formations in the individual languages. However, it is the *n*-stem forms which interest us particularly. These are in themselves numerous. *Nomina in indogermanischen Lexicon* sets out the following possible forms

1) *? *g'hei-men-*

2) ? *$g^{h}e_i$-món-*

3) ? *ghei-m-n-ont-*

4) ? *ghei-m-en-to-* (p. 162)

From 1) *ghei-men-* would be derived Hittite DLsg. *gimmi* "in winter", Vedic L sg. *Héman,* Y. Av. I sg. *zāena,* and, with the secondary *t-* found in all the Greek neuter *men*-stems, χεῖμα as well the first element in compounds such as χειμά-ρροος. As the

question marks before the entries indicate, the reconstruction of all these forms is uncertain. In the first place, given the absence of any forms without an *m-*, an argument can certainly be made in favour considering all other formations as secondary to the *m-*stem. In the case of 1) this would leave one with **ghei-m-en-* i.e. a neuter *-en-* stem, a class which is at best extremely rare. This difficulty led Tremblay (1996) to posit **gheim-men-* > (still PIE) **gheimen-*. However, given the scarcity of analogous denominative *–men-* stems (Wodtko et al., 165 note 9) it is unclear that this explanation helps in any way.

Alternatively, one can group the forms in 1) together with a set of *r-*stems, and assume a secondary *r/n-*neuter built to the *m-*stem. This is the solution adopted by Rieken, who sees in it the origin of the relatively rare *-mer -men* heteroclitics (1999, 77). Nussbaum (1986 189, 289ff.), by contrast, does not interpret **gheímen > héman* as representing an original *n-*stem at all, but rather as the *m-*stem followed by the post position *-en*. In his view, the locative singular ought originally to have been **gh(i)i̯ém,* and he therefore interprets *gheimen as a vr̥ddhi building.

The question which most directly concerns our topic is whether or not there are grounds to reconstruct a neuter *-men,* or *r/n-*stem to this root and, if so, whether the *t-* found in the animate *gimmant- hemanta-* could have appeared, at least under some circumstances, in the neuter stem as well. If there is justification for positing a PIE **gheimnt-* neuter, or **geimr/n-,* then the Greek χείματ- is potentially not an innovation at all, but rather an inherited form, and ought to be taken into account in considering the origin of the secondary *t-*stems in Greek. Indeed, if χείματ- were inherited, it could potentially have served as the model, or at least a model, for the refashioning of the rest of the μα-, and *r/n-*stems. This hypothesis does not ever seem to have been explicitly advanced. Yet χεῖμα, χείματος, or *χεῖμαρ, χείματος is a much more immediate model for the subsequent development, than is μέλι.

The evidence for an animate (feminine) *n-*stem, with or without a *t-*extension, is quite strong. Evidence for a neuter *n-*stem is essentially limited to Greek χείμα. The co-existence of this word with the masculine χείμων is unusual. While there are several adjectives in *-μων* parallel to neuters in *-μα*, (e.g. αἷμα, αἴμων, μνῆμα, μνήμων) and

indeed in the case of compound adjectives, this became quite a productive type (e.g. *πολυ-πράγμων, ἀ-χρήμων*), there are quite few pairs of substantives in *-μα* and *-μων*[49]. One finds:

θέᾱμα, (Semonides +) *θεάμων, θεήμων* (once in Anthologia Graeca) but adjectives e.g. *φιλοθεάμων* (Plato+), *πολυθεάμων* (Plato)

χάρμων (ὁ Herodian) *μεθυχάρμων* (Manetho) *χάρμα* (Hom. +)

τέρμων ὁ (Aesch.+ rarish, mainly poetic "boundary") many compound adejctives, earliest seems to be *ἀτέρμων* (Aeschylus), *τέρμα* (Hom. +)

μνήμα (Hom. +), *μνήμων* (Hom. + as adjective) *ὁ οἱ*

πνεύμων ὁ (Archil. +) (Iliad + *πλεῦρον*, modified by supposed derivation *πνεῦμα*, compounds in Pindar, Hipp..

ἴχνευμα, (Julius Pollux onomasticon) *ἰχνεύμων* (Aris. +)

γνώμων ὁ (Theognis +), *γνῶμα* (Aeschylus +)

In several cases, the neuter is a relatively common word, while the masculine is quite marginal. For example, *θέᾱμα* appears first in Semonides, and continues to appear in both poetry and prose, while *ὁ θεήμων* is attested only once (*Anthologia Graeca*) and would seem to be a creation of the poet. Its form and meaning, "spectator," are readily apparent, and a variety of compound adjectives such as *φιλοθεάμων*, attested in Plato and onwards serve as a ready model. Similarly, *ὁ χάρμων* is found only in Herodian, although the neuter *χάρμα* is frequent from the Iliad on. In this case, however, the only associated adjective *μεθυχάρμων* is itself a late nonce-word, attested only in Manetho.

In the case of *μνήμα* and *μνήμων,* though both forms occur in the Iliad, the latter is found only as an adjective, both in its simple form and as the base of a variety of compounds. The use of *οἱ μνήμων* to designate the public recorders, found in Aristotle and inscriptions can easily be explained as an extension of the adjective, "those who remember» or «those who remind*."*

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[49] Based on a comparison of the entries in Buck/Petersen's Index, pp. 217-234.

The relationship between ὁ πνεύμων and τὸ πνεῦμα is complicated by the coexistence of πλεύμων as a variant of the former. The LSJ (1996), Frisk (1991b, 1:559) and Chantraine (1968, 991) agree that πλεύμων should be considered the original form, which was subsequently altered by a perceived connexion to πνεῦμα. In this case, the pair of doublets is illusory.

In the case of γνώμων ὁ and γνῶμα, neither form is Homeric. γνῶμα is first attested in Theognis, and γνῶμα in Aeschylus. γνῶμα is not very common, but does occur in both poetry (e.g. Aeschylus, *Agamemnon* 1352; Euripides, *Heracles*, 407) and in prose (e.g. Herodotus, 7.52). γνώμων is significantly more frequent. Though γνώμων is used with a wide variety of meanings, depending on the context, "indicator" and "indication" seem to capture the base meanings of the two words. As in English, the distinction between the two may be blurred when the indicator is inanimate. Aristotle uses γνώμονες, "teeth that indicate the age of a horse or donkey" at 577a.21 but calls the same set of teeth γνῶμα slightly later (577b.3). Despite the wide attestation of the root *gneh₃ in other languages, there are no direct cognates to γνώμων. Frisk offers Old Russian *znamę* as a parallel formation to γνῶμα but notes that in view of the productivity of the suffix in both languages, the words likely represent independent formation.

Part of Oettinger's argument is that names of body parts, which are frequently *r/n* stems or *n*-stems, may occur more frequently in the ablative than other classes of words, and therefore be more susceptible to remodelling based on the *⁻tos* ablatival form. Rix is sceptical that phrases such as "vom kopf ab" would be uncharacteristically frequent (1985, 271). In support of Oettinger's argument, which at first sight does look as if it may have been born of desperation, Oettinger points to the fact that the ablative singular of *udhar, mūrdhan-, akṣan- (i-, in-), āsan-, lóman-, atman- śirṣan-* and *yakṛt-* are all attested in the Rigveda. Two of these, *yakṛt,* and in fact though Oettinger does not mention it, *lóman-,* only occur in the ablative. Oettinger's observation is true, but it does not seem to advance his argument much. One could certainly come up with a similar list taken from a different class of words, not body parts, which are also all attested in the ablative. One can however, verify Oettinger's hypothesis that the ablative is uncharacteristically frequent among neuter *r/n-* and *n*-stems in the Vedas. MacDonnell in

his Vedic grammar lists all the occurring forms by case and declension type. The following table gives the number of different stems by class which form each case. Only the singular is considered, since both Oettinger and Fick appear to envision *‑tos as a concurrent to the ablative singular ending. All genders of stems in -c and neuter stems in ‑is, -us, were chosen at random as comparisons.

Table X.   Number of words by case and stem class in the Vedas

	-an (n.)	-man- (n.)	-van- (n.)	-is-, -us- (n.)	-c- (m. f. n.)
NAV	NA	40	4	25	16
(Accusative)					28
Instrumental	12	24	3	19	13
Dative	4	11	3	11	11
Ablative	8	9	2	8	3
Genitive	9	12	9	13	6
Locative	10	58	6	11	8

Although the ablative of stems in ‑c does appear to be rare compared to the other classes, the foregoing data do not suggest a particular dominance of the ablative, either compared to the other case forms of *n*-stem nouns, nor compared to its use in other classes. The above table does not, however, take frequency into account. A form such as *áhnas* is counted as one item, regardless of whether it is attested many times or only once. It would be possible to imagine, therefore, that a few forms such as *śíranas* were extremely frequent and (in the putative by-form *śíratas*) exerted an undue influence on the declension as a whole. In order to examine this possibility, we considered Oettinger's own list of words for body parts. He notes that the ablative singular is attested for every word. We wished to compare the frequently with the ablative occurred compared to other case forms. Grassman's lexicon contains this information for the Rigveda.

The results were the following:

Table XI.   Frequency of case forms of words for body parts

	NVA	Inst.	Dative	Ablative	Genitive	Locative
mūrdhán, **m.**						
Singular	8	0	0	1	0	12
Dual	0	0	0	0	0	0
Plural	3	0	0	0	0	0
ūdhar, **n.**						
Singular	30	0	0	1	0	13
Dual	0	0	0	0	0	0
Plural	0	0	3	0	0	1
āsán, **n.**						
Singular	0	1	1	3	0	13
Dual	0	0	0	0	0	0
Plural	0	6	0	0	0	0
lóman, **n.**						
Singular	0	0	0	1	0	0
Dual	0	0	0	0	0	0
Plural	0	0	0	1	0	0
ātmán, **m.**						
Singular	15	0	0	1	0	1
Dual	0	0	0	0	0	0
Plural	0	0	0	0	0	0
śīrṣán, **n.**						
Singular	0	3	1	2	1	4
Dual	2	0	0	0	0	0
Plural	5	0	0	0	0	0

Based on these results, it does not appear that any of these words are particularly frequent in the ablative. The case of *lóman* is exceptional. The word is attested only in one hymn in the tenth book of the Rigveda. It occurs twice, both times in the ablative, once singular, once plural. However, *lóman* is simply a later variant of *róman,* n. which occurs five times in the nominative or accusative plural. The hymn, X, 163, in which *lóman* occurs also accounts for the sole occurrence of *yárḳt* in the Rigveda, in the ablative as Oettinger notes. The hymn is a charm for banishing *yakṣma* (illness) from every part of

the body. It principally takes the form, "From the (body part in the ablative) I cast out the sickness…" and runs through a very thorough list of body parts which might need healing. The hymn therefore is a rich source of ablatives of body parts and slightly skews the overall numbers of the Rigveda as a whole, as well as ensuring most body parts are attested at least once in the ablative.

In short, it does not appear that ablative forms, either of *n*- or *r/n*-stems, or of words for body parts, are sufficiently frequent to suggest that a variant ablative form would be prominent enough to reshape the entire paradigm, at least not in Vedic, which is the source of Oettinger's evidence for their frequency. If there are sufficient data to draw any conclusions, it would appear that perhaps the locative is in fact the most frequent oblique case. A further indication that ablative forms were not unusually common *r/n*-stem nouns is the fact that many neuter nouns in -αρ or -ωρ in Greek are attested only the NA singular (Buck 1945, 298). The ablative therefore as a source of the *t*- of the remodelled paradigm remains doubtful.

In summary, there are essentially three distinct elements to Oettinger's argument. He argues that: 1) that some nouns, especially *n*-stems, and especially neuter, already showed a *t*-extension in PIE, 2) that these PIE -*t*- s are to be connected directly with the Greek -ματ- stems, and 3) that the source of the PIE and hence the Greek -*t*- is to be found in the ablatival suffix *-*tos*. We have seen that while 1) seems very likely, and 2) is possible, 3) poses serious difficulties. Oettinger himself seems to have come to roughly this assessment of his argument, since he has since proposed two alternate explanations for secondary PIE *t*-stems.

Phonological Explanations of the *-t-*

The individualising *-n*

Oettinger (Take II) *-nt < -n*

In his 2001 article, "Neue Gedanken über das *nt*-Suffix," Oettinger offers a phonological explanation of the interchange of *n-* and ⁻*nt-* in PIE (2001). This article is not unique in attempting to examine the whole range of *-n-* and or *-nt-* formations in PIE and to determine some underlying function or meaning that would unite the diverse collection of forms. Such an investigation presupposes, of course, that there was, at some stage of PIE a single suffix *-n-/-nt-* which underlay the wide range of adjectival, participial and substantive formations in *-nt-* of the individual languages. Although it is easy to see the attraction of such a unifying theory, it remains an open question how many of the formations for which a PIE *-*nt-* can be reconstructed do in fact share a common origin[50], even before one includes all the *-n-* formations as well. Certainly, such an attempt to trace the origin within PIE of *n-* or *nt-* formations is well beyond the ambition of this investigation, which is simply concerned with the secondary *-t-* of Greek. However, since Oettinger also explicitly claims to have accounted for the *-t-* of the *-μα, -ματος*, nouns, his article is of direct relevance.

Oettinger's argument is two-pronged. In the first place, he argues that *-n-* and *-nt-* are, in PIE, functionally and semantically equivalent, and that their role can indeed be subsumed under a single heading of "individualising", and secondarily, that the *nt*-suffix is a secondary phonological development of an original *-n-*. The idea of an "indvidualising" *-n-* is an idea which goes back at least to Solta's 1958 article "Gedanken über das *-nt*-Suffix" to which Oettinger's "Neue Gedanken über das *-nt*-Suffix" alludes. Under the general heading of "individualising suffixes", Oettinger groups Hittite

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[50] It is easy to imagine the muddle of someone with access only to modern English who attempts via internal reconstruction to trace to a common origin both the *-er* of comparative adjectives (< Germanic *-izon /*-ōzon)* and the *-er* of singer (< West Germanic *-ārjo-z*.) The efforts to unite all PIE nasal formations may or may not be analogous.

denominal and deadjectival adjectives in *-ant-* such as *irman-ant-* *"Krank"* as well as *irman-* n.*"Krankheit"*, or *marsa-nt-* and *marsa-* both meaning "moralisch schlecht." In the same category, he includes secondarily substantivized adjectives, including Hittite *sakkuniyant-* from c. *sakkuni-* both meaning priest, and *$*g'erh_2o-nt-$*. This type, both substantivized and purely adjectival, he argues is also to be reconstructed for PIE[51]. To the general category "individualising *-nt-*", Oettinger adds two further subgroups: kinship terms, such as Hittite *huuhant-* to *huhha-* ("Grandfather" in both cases) and words for time, especially the season words previously discussed, *ispant,* and the somewhat more controversial *$*wittant-$* "year or yearling". In this latter case, Oettinger argues, the suffix *-nt-* can still be considered "individualising," because these words frequently serve as "Handelnde" (agents, actors in a non-grammatical sense.)

For each of these subgroups, Oettinger then adduces similar forms, in some cases cognates, with a simple *n*-suffix. Some of the categories are generally accepted as examples examples of an "individualising" *-n*, including the Germanic weak *n*-stem declension of adjectives and personal names such as *Varro,* to *varus* *"krummbeinig"* or *Στραβών* to *στραβός* *"schielend"*. Oettinger's data is by no means limited to these, however. Alongside a base *individualising* meaning, Oettinger includes a secondary meaning "charakterisiert durch, versehen mit" and by this means traces the possessive "Hoffmann" suffix *-Hn-* to the same origin, "mit voraugehender Instrumentalendung abstrahierte Variante."

By this point, the chief difficulty with Oettinger's argument has become clear. This is the extreme elasticity of the notion of "individualising." The majority of his cases are adjectives, or originally adjectives, and "individualising" seems to mean no more than that the adjective can serve to distinguish one individual from another. It is very difficult to think of an adjective which could not be used in this way. (If by "individual", one means a human being, there will likely be certain semantic restrictions on what adjectives are used to describe him or her. Some, such as "windy" are unlikely to occur. But if one

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[51] Lowe, examining "Caland" adjectives in Indo-Iranian similarly concludes that *-nt-* adjectives, distinct from participles should be reconstructed for the parent language, (2014) Nussbaum (1976)already included such adjectives as part of the Caland system.

includes, as Oettinger does, animals as well as "individuals" such as "spring" or "night," these restrictions are lifted.) Oettinger's own preliminary list of adjectives with a meaning apt to individualise or form nicknames includes *pittalwant-* "unbehandelt," *dannarant-* "leer," and *andarant-* "blau" (p. 302). One could, of course, compile a list of adjectives which *were* in fact used as personal names, nicknames or titles in various languages, and such a list might well include a number of surprising items. But there seems so far, very little *a priori* reason to favour either the meanings or the forms suggested by Oettinger ahead of any other set of adjectives. Nor does Oettinger demonstrate that the *-nt-* forms derived from adjectives, such as *marsa-nt-* from *marsa-* are in any sense more "individualising" than the original adjectives. No more is there any evidence that *huhhant-* "Großvater" is in some way more "individual" or more equivalent to a title or personal name than is *huhha-*. Indeed, Oettinger simply treats the two forms as synonymous. A similar objection can be raised in the case of the names of occupations. While it seems safe to say that such words could be used as titles or substitutes for proper names, Oettinger presents no evidence that the forms in *n-* or *-nt-* (for example Sanksrit *r̥bbv-an-* v.s. *r̥bhu-*, both "kunstfertig, Künstler") are more likely to be used that way than the shorter form.

Similarly, it appears that an "individualising" suffix produces not only adjectives, which can be used to distinguish one individual from another, but also substantives, which may refer to an individual of some sort. In some cases, Oettinger is almost certainly right in assuming a secondarily substantivized adjective, possibly first substantivized in the individual languages. However, in other cases, it is unclear if he is arguing for an original adjective, and if he is, he offers little evidence. If there is reason to believe that *sakunniyant-* "Priester" was originally adjectival, Oettinger does not present it. Similarly, it seems counterproductive to treat personal names such as *Varro* (from *varus* "krummbeinig") or *Στραβών,* (from *στραβός* «schielend») as substantivised adjectives. It seems needlessly convoluted to view the *n*-stem which occurs only as a name, as a substantivised adjective, and therefore originally synonymous with the non*n*-stem adjective, which, however, never occurs as a name.

If Oettinger's notion of "individualising" seems already overstretched, it surely reaches the breaking point when he turns to neuter substantives and includes (without

comment) the Sanskrit *namn-as* (G.) "name" and Hittite *istaman-* "ear" in the same category. By the time he comes to trace *nt*-particples and adjectives in *-w(e/o)nt-*, *-w(e/o)n-* to the same single source, his category seems to have become so broad as to admit virtually any adjective or substantive. Oettinger does indeed seem to backtrack somewhat from interpreting *all n-* and *nt*-stems as originally individualising. In sketching the development of *r/n*-stems, he argues for a root noun **wes-* (for which there is no direct evidence) to which a locative **wes-én* could be built. This locative would then become the oblique stem of the heteroclitic **wes-r/n-* (origin of *-r-* unspecified). A "geschlechtige, individualisierende" (2001, 310) form **wes-on-* could then be created via internal derivation. The newly created animate *n*-stem could then be either interpreted as containing an "individualising" suffix, or in fact be the origin thereof. A *-t-* could then be attached to **wes-on-* by the means described below. Every step of this process is open to objections, but at least it does not involve interpreting all *r/n*-forms as themselves individualising. It is unclear how the neuter *-men-* stems would fit into this picture.

In the absence of a clearly unifying semantic category in which to include *all -n-* and *nt*-suffixes, the lack of fine grain in Oettinger's formal analysis becomes a difficulty in itself. Except for noting that participles are generally inflected hysterodynamically, Oettinger does not attempt to distinguish between different ablaut classes which might well preclude the simple equation of all suffixes. Although the majority of his examples show a simple *-nt- -n-* suffix, he also includes forms such as the word for "name" which appear to be built with a complex suffix. In arguing for the functional equivalency of *-n-* and *-nt-* in various contexts, he does not address the issue of whether, in some functions, either the *-n-* or the *-nt-* predominates.

Having, to his own satisfaction at least, demonstrated the functional semantic equivalency of *-n-* and *-nt-*, Oettinger then sets out to explain the difference in form. His main argument is an analogy between the PIE forms and MHG forms which developed an epenthetic *-t-* in certain environments. Although the *-t-* occurs after /r, s l f ch/ as well as n, the earliest examples appear to follow /n/, leading to forms such as OHG *cinment,* beside *sînamen* (both borrowed from Latin *cinnamonum),* and MHG *niemand, iemand,* < OHG *nie man, ieman.* Oettinger argues that a similar phonological development could have given rise to the PIE *nt*-forms, as well as a number of other *t*-suffixes, or extensions.

Neither Oettinger, nor Metkke (2000, 128–29), which he cites for the MHG evidence, precludes that analogy also played a role in some cases. In invoking a phonological explanation, one would like to be able to specify under what conditions a -t- did or did not arise. However, in the case of MHG, it is at least certain that the -t- forms are secondary, and do derive from the *t*-less ones. Oettinger has not, however, established the same for PIE. In Oettinger's view, the -t- was "fakultativ," and thus languages inherited both *t*- and *t*-less variants. An "optional" phonological development seems hard to accept, except perhaps as a last resort, though it might be possible to sketch out a scenario in which both *t*- and *t*-less forms occurred in a single paradigm, and thus either form might subsequently be levelled throughout[52]. Since Oettinger's theory does not specify under what conditions one might expect to find either a -nt- or a -n-, it does not admit of ready disproof, but neither is it very compelling. When Oettinger gives Sanskrit gen. *namnas* and Gr. *ὀνόματος* as examples of a -n-/-nt- doublet, he is presumably assuming that Greek inherited both stems, (since an *n*-stem must underlie *ὀνομαίνω*) and subsequently generalised the *nt*-stems throughout the declension of the neuter *men*-stems and -r/n-stems. This conclusion would be more persuasive if the earlier tenets of his theory had been more conclusively demonstrated.

Nonetheless, there are cases where the -n- and -nt- do appear genuinely interchangeable, both in individual words, where some sort of analogy seems plausible, but also notably in the apparently equivalent adjectival suffixes *-we/ont- and *-we/on-. In this case, it is certainly tempting to look for a phonological explanation, and

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[52] Both Oettinger and Mettke speak of "epenthesis" to describe the process by which the -t may appear. Mark Hale (personal communication) draws my attention to the possibility that the MHG -t- should be considered the result of external sandhi. MHG -nt# was been simplified to -n# before a following consonant, but the -t- was retained before a vowel, or pause. As a result, final -n before a consonant could represent either n or -nt resulting in the addition of final -t- where they were not etymologically justified. This is a significantly more satisfactory explanation than the apparently unmotivated free variation suggested by Oettinger and Mettke. It is possible to imagine, though difficult to demonstrate, that a similar situation may have existed in PIE. Certainly, in Greek, once all *-nt# >-n, a similar ambiguity came into being. The potential for confusion between Greek *nt*- and *n*-stems is discussed in more detail below.

Oettinger's, though somewhat general, is promising. It does not, however, help us greatly with our immediate investigation.

Olsen: *-n < -nt*

Oettinger is not the only philologist in the past two decades to have shown an interest in the relationship between PIE *n-* and *nt-*stems. Olsen (2004) also tackled the relationship between *-n-* and *nt-*stems, and her conclusions are in many ways similar to Oettinger's. Olsen also argues for a basic "individualising" meaning of the suffix, and for the ultimate identity of *-n-* and *-nt-*. Olsen's conclusions are not, in our view, in any way more compelling than Oettinger's, but her articles do raise a number of issues of direct relevance to the Greek forms that concern us. In order to subsume deverbative and deadjectival *n-*stems into a single category, Olsen opts to assume that apparently deverbative agent nouns in *-n* are in fact derived from root nouns. This is plausible in the case of her first example Av. *spasan-* ("(somebody) watching" according to Olsen), in so far as there is indeed a root noun attested in Av. *spas,* Skt. *śpás* and Lat. (*haru)-spex,* so that the assumption of a PIE noun **spek'* is not a problem. However, Olsen seems to wish to derive *all* such *n-*stems from root nouns, despite the fact that in other cases, such as the examples she gives of Lat. *bibō* "(somebody) "drinking, a drunkard)" and Goth. *un-wita* "unknowing" there is no evidence for the existence of such a root noun, except that it enables her to designate them all as "denominal derivatives denoting individuals characterised by the base word" (2004, 217). In fact, in order to demonstrate the essential equivalence of the *n-* and *nt-*stems, Olsen is willing to derive all active participles from original root nouns as well.

Olsen's definition of "individualising" is tighter than Oettinger's, but since, ultimately, she is analysing the same set of data, this greater specificity is largely illusory. Neither she nor Oettinger address the fact that although, for instance, many *n-* and *nt-* adjectives could describe individuals, so could almost any other set of adjectives, including *i-* and *u-*stems, thematic forms, etc.. Similarly, while it is true that there is some overlap between an agent noun such as τέκτων, and an active participle, there is equal functional similarity between the participle and agent noun in *-s-* or *-r-*, e.g. *-της, -τωρ.*

Like Oettinger, Olsen sees the relationship between the *n*- and *nt*- stems as principally the result of a phonological process. Olsen, however, chooses to derive the *n*-stems, and certain *t*-stems, from *nt*-stems, rather than vice versa. In order to recover what she believes to be an original PIE complementary distribution of -*nt*- -*t*- -*n*-, Olsen proposes a series of phonological developments of -*nt*- in different environments. A few of these are unproblematic, and her examples correspond to cases in which there is strong evidence for an -*nt*- suffix. Several others, though, require significantly rewriting the phonotactic rules of PIE.

A number of Olsen's rules, such as /CntV-/ > /CnV/ or /Cnt/ > /C(nt)/ directly contradict well established developments, and are only necessary to account for the lack of -*nt-, -n*- or -*t*- in forms for which the only evidence of an original -*nt*- is Olsen's own *a priori* assumption that all *n*-stems and most *t*-stems (and even some forms with no ending at all) must be derived from an original *nt*-. For instance, the development of word-final /Cnt/ to /C/ is needed in Olsen's theory to account for the absence of a suffix in root nouns such as **vid-,* (in which there is no external evidence of an -*nt*-) and special pleading is therefore needed to account for the well-attested neuter participles, such as Sanksrit *vacat* < **wek-n̥t-*.

Olsen is aware, of course, that her proposed development is not in keeping with the normal patterns of vocalisation and syllabification proposed for PIE, and therefore argues that -*nt*- must function as a unit "rather than two separate phonemes" (Olsen 2004, 225). However, introducing a new phoneme into the PIE inventory, which is found only as a suffix, would surely create far more serious difficulties than it could resolve. In short, Olsen's account, while original and internally consistent, seems highly implausible, and although it would indeed account for the -*t*- of the Greek -*mn*-and -*r/n*-stems, the solution creates more difficulties than does the original problem.

A Graeco-Armenian -*mn̥t-*?

On the other hand, Olsen does raise certain issues concerning neuter -*mn*-and -*r/n*-stems which are worth addressing. Of most direct relevance is Olsen's claim that, in addition to the frequently adduced final -*d*- of the original heteroclitic *neard,* and possibly

leard, Armenian shows traces of a final *-mṇt-* that would correspond to Greek *-µατ-* . Her example is Armenian *ǰermn, ǰerman,* "heat", which she compares to Greek *θέρμα, θέρματος* and derives from an original **gʷʰer-mṇt-* (Olsen, 222). Such a correspondence would not necessarily imply that the *-t-* was of PIE date. It could, perhaps more plausibly, be interpreted as one of a number of similarities between Greek and Armenian. Whether therefore, the *-t-* arose independently in each language, or whether it was due to contact or even a period of common development might be best assessed in the context of the relationship between Greek and Armenian as a whole.

The idea that Armenian neuter *men*-stems (originally neuter--Armenian does not preserve grammatical gender) might in fact show a suffix *-mṇt-* was first suggested by Lindeman (1986a), and later expanded upon by Stempel (1990). Efforts to evaluate the hypothesis are made more difficult by the fact that the historical phonological developments of Armenian are both more complex than those of many other IE languages and also relatively poorly understood. Between them *n*-stems and *r*-stems have in Armenian subsumed nearly all the PIE consonantal declensions, and although the inflection of the numerous subclasses of Armenian *n*-stems show apparent traces of different ablaut grades, there has clearly been considerable analogical development, and it is very difficult to map the attested patterns onto historical models. In Armenian, "name" has a NA sg *anown* (<ow> = /u/), and an oblique stem *anowan.* Stempel argues that this represents the regular phonological outcome of a NA *-mṇ*, oblique stem *-mṇt-,* via the intermediate stages **(H)nomṇ, > *anuman > *anumn >*anuan* v.s. **Hnomṇt-os, *anuwan> *anuan.* This is a possibility, though it is by no means certain that this is the development such a preform would follow. Armenian does not preserve any *nt*-stems as such, including participial forms, so there is little material for comparison. However, **Hnomṇt-os, > anuman*, or alternatively **Hnomṇt-os, >*anumant-s > anumand*, depending on whether the loss of vowels in final syllables precedes or follows the simplification of *-nt- >-n-*. To further complicate the issue, it is not certain that the change *-nt- > -n-* is itself unassailable. Stempel's examples of the "ganz regelmässig" change (1990, 41 note 10) are all cases of *-nti-*. Schmitt considers that *nt-> -n-* is in fact restricted to occurrences with a following *-i-* and that the development of *-nt- > nd* in *ǝnderkʰ <* entero* and *dr-and* cognate with *antae āntā, ond,* support his claim (1981). In

order for Lindeman/ Stempel's scenario to be plausible, *mṇ* would have to develop to *own* prior to the development of *ṇ > *an.* By the chronology Stempel sets out earlier in the same paper (which he seems to dismiss in his conclusions, though it remains quite persuasive) the *ṇ > *an* must be a relatively early change, but it cannot be dated relative to *-mn-* > *own.* Stempel himself does however refer to the "erst späten" change *-mn-> -un-*. Furthermore, the details of the aforementioned change remain obscure. Although a number of forms, such as *anun* seem to attest to such a development, instances of *-mn-* are numerous. Stempel explains the contrast as reflecting the divergent development of **o-mn-C-,* which was retained - versus **-o-mn #* which became *own*. But the expected reflex *o-mn-bhis > *uman*, does not itself account for the nom sg. in *-umn*. Stempel suggests a stem *-mṇt-* primarily to account for the apparent reflexes of an original syllabic *n* before endings beginning with a vowel. An alternative possibility is that Armenian had generalized a zero-grade ending of the genitive (*-s*). The working of the "Auslautgesetz" would obscure such a levelling in most circumstances.

In conclusion, it seems distinctly possible that Armenian preserves reflexes of a neuter stem *-mṇt-*, but a much more detailed study of the phonological and morphological developments relevant to Armenian *n*-stems would be necessary before definitively accepting or rejecting such a theory. Were one to accept an Armenian suffix *-mṇt-*, it would still not necessarily follow that such a form is PIE. Olsen's attempt to integrate the suffix into the PIE paradigm of *n*-stems are unsatisfactory, and the possibility that it represents a later development of Greek and Armenian deserves to be assessed in the context of other similarities between the two languages.

None of the preceding criticism is intended to deny that there is a subset of *n*-formations which may be legitimately described as "individualising". The personal names are a clear example, while an individualising *n*-suffix is frequently assumed to have played a part in the development of Germanic weak adjectives. Of the *nt*-stems, the count plurals identified by Melchert (see next section) are in a literal sense individualising. But the efforts to subsume *all -n-* and *-nt-* forms into a single category seems, to me at least, to require either a very selective presentation of evidence, or such a loosely defined category as to be essentially meaningless.)

Shortly before Oettinger's 2001 paper appeared, Craig Melchert (2000) also tackled the issue of the *nt*-stems. Melchert's investigation is, however, rather more limited and focussed in its scope than the others we have examined thus far. Melchert's starting point is the Tocharian nominative plural formation in -*nt*-, which he compares with similar Anatolian formations also in -*nt*-. Unsurprisingly, the idea of a connexion between the two sets of forms is not new. In 1935, Benveniste proposed that in both language groups, the suffix served a "collective" function. Although this idea has been repeatedly revived in various forms, it has never been wholly accepted, for good reasons, as Melchert proceeds to demonstrate. Melchert, as he makes clear, is not attempting to find a "one size fits all" explanation of all *nt*-formations. He starts in fact by outlining the numerous Anatolian *nt*-forms that he does *not* view as cognate with the Tocharian ones. These include participles, "ergatives," possessive adjectives, and Luwian plurals in -*nz* , which he derives not from *-*nt*- at all, but rather from the accusative plural ending *-*ns*. (2000, 58 with references.) Having thus narrowed the data with which he is concerned, Melchert turns to several examples in both Hittite and Luwian which provide evidence of a very specific use of a suffix -*ant.* In Hittite, Melchert identifies a number of cases in which -*anta*- has been added to a numeral or number word modifying a neuter plural. Melchert's theory is persuasive, but does not bring us much closer to a solution to the particular problem which concerns us.

**-mn̥-si > *-mn̥-si*: The -*t*- originates in the Greek dative plural

By contrast, the 2010 paper by Anghelina addresses directly the question of how a -*t*- became attached to the -*mn*- stems in Greek. Unlike most other theories which attempt to provide a morphological explanation of the phenomenon, Anghelina's (2010) theory proposes a phonological mechanism, somewhat more along the lines of Oettinger's epenthetic -*t*-s, but situated within Greek. Anghelina suggests that the combination -*mn̥-si*- in the dative plural could have given rise to an epenthetic -*t*- yielding -*mn̥t-si,* and that this t- might subsequently have spread from the dative plural to all the oblique cases.

This theory, though quite ingenious, presents difficulties. To begin with, the dative plural is a very odd starting point for refashioning the entire paradigm, even if the refashioning does result in greater transparency. Furthermore, the ending -*si*- of the dative

plural triggered a number of phonological changes in athematic nouns, some of which were subsequently regularised (e.g. πόλεσι where the -σ- must have been lost intervocalically and subsequently restored), some of which were preserved (e.g. λέουσι), but none of which spread to other case forms. Anghelina's starting point becomes much harder to maintain if one follows Brugmann and Schwyzer in assuming that the dative plural never contained a -t-. Nonetheless, Anghelina himself does accept this assumption, and therefore is obliged to attempt to reconcile the two, and his attempt is not wholloy successful. He explains, "The result was directly an affricate which eventually ended as a fricative. A similar process may have been the passage from *ti* to *si*, where one can posit an intermediate stage *'si*. This can explain why plural has the form in /-*masi* and not in*/-massi*/ (as from */-matsi*/)." (Anghelina 2010, 4 note 13) However, it does not seem possible to avoid the sequence /-tsi/ (three separate phonemes) at some stage in the process. There is simply no way the -t- could have been attached to the stem and carried through the paradigm, without ever having been perceived as an independent phoneme.

Positing an intermediate affricate seems reasonable, but the comparison with the East Greek change of *ti* > *si* is not necessarily helpful. In the case of *ti* > *si*, it seems that the affricate, which almost certainly did occur at a certain stage in the process, remained a single phoneme and ultimately merged with /s/. Of course, Anghelina could argue for a three-step process 1) *-*nsi* > *-*ntsi,* 2) generalise the -t- throughout the paradigm, 3) simplify -*ntsi* > -*nsi*. In this case, one must argue that the /tsi/ and /t͡si/ were not contrastive, and the sequence was analysable at one point in time as three phonemes, and at another as two. This is possible, though there is not a great deal of evidence to support it.

There are, however, other problems with the proposed sound change. Step three seems as if it should entail compensatory lengthening, but if one assumes it took place before the syllabic -ṇ- was "vocalised" perhaps the lengthening might not have occurred. Anghelina's alternative explanation is not a great deal more helpful. He suggests "that */-ss/ eventually ended up as /s/ after a nasal: cf. D.pl. */pherontsi/ > */pheronssi/ > pherousi/." But there is no need to assume the phase with the double /s/, since the dialectal diversity shown in the treatment of *-*Vntsi* suggests a relatively late change,

quite likely later than the merger of the syllabic *ṇ* with *a*, and therefore the result should entail a long vowel *āsi* in Attic Ionic, like *pāsa* < **pantya*.

Nevertheless, as we have seen, it is possible to argue that the "Aeolic" form **-μασσι* may well have existed before being displaced either by the "extended" form *-ματεσσι* or the Attic-Ionic form with single *-s-*, and therefore the difficulties entailed in explaining its absence are not greatly significant. More serious is the implausibility of the development **-ṇsi > *-ṇtsi*. As a parallel Anghelina adduces the epenthetic *-d-* of *ἀνδρός*. Outside Greek, he notes similar developments in Romance e.g. *sembler* from *similare,* and the German cases mentioned by Oettinger (without reference, but with the interesting observation that the dental seems to occur after an *-n* in an unstressed syllable only, which he denotes with a schwa but describes as a syllabic nasal.) Along with *ἀνδρός,* Anghelina might have added *βρότος, ἄμβροτος*. Doing so brings into clearer focus the inadequacy of Anghelina's parallel. The only clear cases of epenthetic consonants in Greek are between a nasal and *r*. The fact that both /s/ and /r/ may be described as continuants does not really help. Clusters of nasal and sibilant do lead to a number of sound changes, but none in any way similar to the one Anghelina posits. One would expect *-mṇsi* to be affected by the first compensatory lengthening (preceding the change of *ā* > Attic Ionic *η*) resulting in the loss of the /s/ and the lengthening of the prevocalic element i.e. by the changes that resulted in aorists such as *ἔφηνα, ἔπηλα* from **e-phan-sa, *e-pal-sa.* Furthermore, although Anghelina may be right not to *assume* that /ṇs/ would show the same reflex as either /Vs/ or /ns/, there are in fact at least a few parallels which seem contradict Anghelina's assumption of a change **mṇsi > *mṇtsi*, in particular, the Homeric aorist *δέδαε *de-dṇs-et* (Rix 1976, 79; Frisk 1991b, 1:338). In this case, *CṇsV* behaves exactly as *CVsV* would do. Before a consonant *ṇs-* yielded **(h)ā* (likely via an intermediate *ṇCC* or *aCC*) as indicated by the development of the pronoun **ṇs-me- > hā-me- > ἡμε-*. In this case the result is once again indistinguishable from an original initial vowel.

Of course, this is not absolutely fatal to Anghelina's theory. One could argue that the *-s-* of the dative plural was lost, *mṇsi*, subsequently restored analogically, still prior to the vocalisation of the nasal sonant, and then **mṇsi > *mṇtsi*. However, apart from Anghelina's own theory, which is, as we have seen, not very plausible in a number of

respects, there is no evidence whatsoever for such a sound change, and it is better to look for an alternative.

Participles

If one phrases the question we are attempting to answer as, "What was the source of the -t- attached to the neuter n-stems?" one answer presents itself quite readily. It came from the -nt-stems. Unsurprisingly, this idea is not a new one. J. Schmidt in his extensive examination of neuter plurals suggested that the -t- of ὀνόματ- and the like was due to the analogy of the active participles. He reconstructs an original zero grade *φέρα(τ), *φέρατος for all cases of the neuter except the nominative and accusative singular, which then served as neat analogy for a neuter -μα, -ματος. He notes that in animate n-stems also, where the nominative in -ων fell together with those of nt-participles such as φέρων, one finds occasional cases of a secondary -t-, eg. θεράπων, -οντος and ἄκων, -οντος where the corresponding feminine forms ἄκαινα, θεράπαινα seem to guarantee an original n-stem.[53] In the neuters, however, where both the nominative and accusative overlapped with the nt-stems, the replacement was systematic.

In 1925 Kretschmer proposed a modification of Schmidt's theory. He agreed that the analogy of the -nt- stems was the best way to explain the -t- of the neuter -mn- stems, but argued that the adjectives in -w(e/o)nt- provided a surer point of comparison than did the participles (Kretschmer 1925). Therefore, he proposed replacing *φέρα, *φέρατος with *χαριϝα, *χαριϝατος in the analogy. His principal reason for doing so was uncertainty that the participles of thematic verbs had ever shown varying ablaut grades, and hence doubt that *φέρα, *φέρατος, could be securely reconstructed.

Although neither Kretschmer nor Schmidt's proposal seems to have generated a great deal of ongoing discussion, neither have they been entirely dismissed or forgotten.

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[53] In Schmidt's view the dative (original locative) plural would have been another point of contact between the two declensions. He relates the Greek ending -si to Sanskrit -su by assuming that the Greek form represents an earlier *swi > -ssi > -si. This aspect of Schmidt's theory cannot be retained, as e.g. *hādu-swi (< *sweh₂du-) > *hādūwi >** ἥδῡι. Instead the dative plural -si was probable influenced by the dative singular -i and the instrumental plural -phi (Rix 1976, 157).

Sihler notes that *nt*-present and aorist participles may have been "one ingredient in the development" of the stems in -*mat*- (2008, 297). Meier-Brügger is yet more cautious. He notes that "der Ausgangspunkt dieser griechische Neuerung is nicht ganz klar," but that it may lie in the reanalysis of the NA sg and dative pl. as a stem in -*at*-, without committing himself to any specific source for this -*at*- (1992, 2:77–78). Rix, however, fully endorses Schmidt's proposal, which he recapitulates very succinctly: "Gr. /t/ für /n/ wohl nach neutralen *nt*-Stämmen auf Grund des vorhistorisch Gleichen Ausagangs im NAV sg.: *u̯esma *u̯esmatos wie *u̯eka *u̯ekatos < *u̯ek'n̥t *u̯ek'n̥tos," with the slight but significant modification of the choice of model verb (1976, 144). Widmer also opts in favour of Schmidt's solution (2002, 117).

φέρα(τ), *Ϝέκα(τ)* or *χάριϜα(τ)*? The ablaut of neuter *nt*-stems.

Like Brugmann's proposed *-*mentom,* Schmidt's theory depends on a reconstructed starting point for the analogy. Neither *-*nt*- nor *-*at*- is directly attested in Greek, where the neuter of -*nt*- stems, both adjectives in *-*went*- and participles, have -*en*- or -*on*- in the NA singular. Therefore, the theory depends crucially on establishing that Greek did indeed at one point possess such forms as *wek'n̥t *wek'n̥tos, or *χαριϜn̥, *χαριϜn̥τος.

While many aspects of the ablaut of participles still remain unclear, the existence of a PIE weak stem in *-*nt*- is uncontroversial in athematic participles. (For the thematic ones, the debate remains much where Bartholomae and Schmidt left it a hundred and twenty years ago. Meier-Brügger comments that it has not yet been decided whether they show suffix ablaut or not). That the NA nt. sg. contained this zero grade does not automatically follow. Indo-Iranian, as represented by Vedic -*at* and Avestan -*at̰*, both derive from a *-*n̥t, as does OCS -*ę*. Hittite -*an* is the expected outcome of word final *-*n̥t, but it could also reflect *-*ont* (Sturtevant and Hahn 1951, 18. 41, 60; Hoffner and Melchert 2008, 108). Similarly, Latin -*ent*- is ambiguous, as it can represent either *-*n̥t or *-*ent* (Leumann et al. 1977, 1:431; Meiser 1998, 226). Only the Greek forms such as *τίθεν, ἔον* cannot be traced back to a zero-grade. They are, however, easily explained as

arising through the influence of the masculine forms. Therefore, the majority opinion seems to be in favour of reconstructing a NA sg. neuter athematic participle in *-n̥t, and also for adjectives in *-we/ont-[54].

Of course, it is not good enough to demonstrate that PIE possessed such forms. There must be some reason to believe, or at least no reason to disbelieve, that such forms were inherited and continued for a time in prehistoric Greek. Despite extensive levelling Greek, does preserve traces of the original ablaut of participles, for examples in the Thessalian feminine forms of the type ϝεκασσα, χαριεσσα, or Messenian εασ(σ)ᾱς and in Heraclean ἔντες, preserving an e-grade versus dative plural ἔντασσιν, a re-characterisation of synchronically opaque *heatsi where however, -ασσιν must originate with a zero grade *-n̥t-si (Morpurgo Davies 1978; Rix 1976, 234). Similarly, Mycenaean o-da-twe-ta /odatwenta/ (KN So 4430 b) "with teeth, toothed" also continues the zero-grade found in Goth. tunþ. Greek may even conceivably preserve direct traces of a neuter zero-grade in hεκα-εργος, < *wekn̥t- or ἕνεκα if Brugmann's interpretation ἕν ϝεκα(τ) is correct (Brugmann and Delbrück 1886, 147).

In order for the analogy with the participles to work, there must have existed alongside a nominative accusative *-n̥t a G *-n̥tos. This also is not a problem. Assuming that the neuters and masculines differ only in the NA, there is relative unanimity in reconstructing a weak stem in -n̥t-. If Widmer's hypothesis of an acrostatic inflexion in the neuter is correct, this would also result in a genitive *-n̥tos. Even if one assumes that the neuters originally followed a proterokinetic paradigm, given that Greek has generalised the zero-grade of the suffix throughout the originally proterokinetic neuter substantives, it seems very likely that the same would apply to the participles, especially since Greek seems in this respect to be following a general late PIE trend. Thus, although Schmidt's choice of a thematic participle was possibly unfortunate, the necessary

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[54] I say "seems to be" because many accounts simply omit consideration of the neuter forms, e.g. Tichy where masculine and neuter participles are simply grouped together (Tichy 2007). Meier-Brügger (1994), Sihler (2008) and Fortson (2004) are equally silent. On the other hand, I can find no dissenting voices. Where the issue is raised, the conclusion is in favour of the zero grade forms (Kuryłowicz 1968, 39; Rix 1976, 63–64; Debrunner and Wackernagel, Jakob 1930, III.1:259–62). More recently, Widmer following a rather different line of investigation, came to the same conclusion (2002, 115–18).

elements of his analogy can be assumed. Nor is there any real need to choose between Schmidt and Kretschmer's proposals since both athematic participles adjectives in *-went- and non-participial adjectives in simple *-nt-, if one allows for such showed the same alternation.

Another necessary condition is, of course, the loss of final stops. Only after *nt#* > *n#* or *Vt#* > *V#* could an *n*-stem be reanalysed as a *nt*- stem. This condition is not a problem since the usual view of the matter is that the loss of final stops was a very early, pre-Mycenean development (Colvin 2007, 12). One reason for this assumption is that final stops are never metrically exploited in early verse[55].

The question remains whether the *t*- was inserted before or after *ņ > a*. Most theories, including those of Kretschmer and Risch, assume it took place afterwards. However, as Anghelina notes, this poses potential difficulties for the relative chronology. Forms such as *a-mo-ta*, *pe-mo-ta* show that the -t- by the time of the Mycenaean tablets, the -t- was already affixed to the suffix. But the same forms, among others, also show a distinctive development *ṃ, ņ > *o* which is found in no historical dialect. This strongly suggests that *ṃ, ņ* were still in existence at end of the Common Greek period. By contrast, the -t-, which is present in all dialects, is most naturally explained as originating in Common Greek. Hence, it seems probable that the -t- was affixed to the syllabic nasal.

Does such a scenario pose any difficulties? Not great ones, perhaps. It does however remove, or lessen, one motivating factor for the remodelling of -mn- stems, namely the apparent irregularity of a declension NA -ma, G -mnos. (Certain authors e.g. Brugmann assume a "Sievers like" genitive in -αν-ος after a heavy root. The parallel brought forward (that of the -an suffix in presents such as λαμβάνω, is better explained otherwise, and the only potential direct piece of evidence for such a "Sievers" variant among the nasals.) On the other hand, the fact that a change is common to all dialects does not guarantee that it took place in the period before the historical dialects began to diverge (in so far as there ever was such a period), hence the distinction between *Gemeinsamgriechisch* and *Urgriechisch*. (For example, see Donald Ringe's Cladistic

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[55] Except potentially indirectly, via the doublet πτόλιν if Szemerényi is correct in his surmise that the initial cluster may result from a false division of *ἤλυθετ πόλιν > ἤλυθε *τπόλιν > *ἤλυθε πτόλιν (1979).

principles and linguistic reality in laws in IE, in which he demonstrate that significant dialectal differences emerged within West Germanic even while common innovation continued (2012)) Given that the Greek dialects never ceased to be perceived by its speakers as a shared language, it is entirely possible that certain early dialectal heteroglosses are in fact later than some of the developments common to all dialects. Alternatively, one can imagine a scenario in which at a very early (*urgriechisch*) period, following the loss of final stops, there begins to be considerable fluctuation between the *n-* and *nt-* declensions, particularly in the neuter, since the accusative, as well as nominative singular can now be interpreted as belonging to either class. At a slightly later period, pre-Mycenaean, but post the vocalisation of syllabic nasals, the relative transparency and regularity of the *-μα, -ματος* inflection compared to the *-μα, -μνος* inflection led, in all dialects, through a combination of independent innovation and mutual influence, to the elimination of the latter in favour of the former. It is worth noting that these considerations are relevant almost irrespective of what one sees as the source of the *-t*. Anghelina's phonological theory is the exception, but in all other scenarios, considerable morphological remodelling and levelling took place, even if one sees it as based on inherited forms. And while such remodelling could have taken place in a perfectly transparent paradigm, it seems far more likely to have done so when the original inflections presented phonological or morphological peculiarities.

So far, in discussing Schmidt/Kretschmer/Rix's theory, we have been considering only the *-mn-* stems. But of course, the *-t-* became an equally obligatory element of the (original) *r/n*-declension. How precisely this came about is not spelled out by the aforementioned authors. (Neither in fact is it by Brugmann or Risch.) It is not too difficult, however, to construct a plausible scenario by which the *r/n* stems would be affected. Except for the NA sg., the inflection of the heteroclitics and neuter men-stems was probably identical prior to the insertion of the *-t-*. (Here one comes to again to one of the potential pitfalls of the reconstruction of ablaut classes. Although one can with relative security posit proterodynamic flexion for the *-mn-* stems (i.e NA *-mṇ*, G. in *-mén-s*) for a certain point of time in PIE (because a zero-grade suffix *-mn-es* would have simplified to *-nés* as in the masculine *akmon*, *aksnas* continued in Sanskrit), already within PIE there seems to have been a tendency to extend the zero grade of the suffix

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throughout the paradigm. (e.g. vedic *namnas*, Hittite *lamnas*, greek *onomnos*). In the case of the *-r/n-* stems, those with a simple suffix can probably be traced to an acrostatic paradigm, with a zero grade of the suffix in all forms. The "collective" seems to reflect a holokinetic pattern, also with a zero-grade suffix in the weak cases. (Schindler 1975) However, words formed with a complex suffix appear to have followed a proterodynamic inflection, like the *mn*-stems, where a G *Cén-s* is expected. And unlike the *mn*-stems, this form is fairly well attested in some of the individual languages, e.g. Hittite NA *pa-ah-hur*, G *pa-ah-hu-uen-a-as* reflected in *$péh_2$-wr̥*, *peh_2-wén-os* «fire», Vedic *dhánur*, *dhánvan-*, also certain Avestan forms and the solitary Old Irish *arbor*, G arbe < *-ens* «grain» (Schindler 1975, 12.) There is, however, no evidence for it in Greek, and while it is possible to imagine that Greek preserved alongside *-r̥*, *-nos*, and *ōr*, *-nos*, certain words in *-Cr̥* or more likely *-Cen-os* up until the time the oblique stem was replaced by *-n̥t-*, it seems much more likely that an oblique stem *-n̥-* was first generalised in all cases, to which the *-t-* could secondarily be added.

One has therefore two classes of neuter *n*-stems nouns in Proto-Greek, the *-m̥*, *-m-nos* class and the *-r*, *-nos* class, of which the former is significantly the larger and more productive. It seems therefore by no means far-fetched to assume that changes to the oblique stem of the *-mn*-class would be paralleled by changed in the **r/n*-class. As the *-mn-* stems shifted to *-mn̥t*-stems, the discrepancy would be even larger. On the one hand, one would have neuter participles and adjectives in *-nt-*, including those in *-went-*, itself a productive class, and the former *mn*-stems, on the other hand, only the already somewhat marginal *r/n*-group. The animate *n*-stems would exert little influence on the other side, inasmuch as the full and lengthened grade of the suffix found in the animate nouns resulted in a quite marked distinction between the neuters and the masculine/feminines.

It is worth taking a moment to consider what form the suffix of a neuter *men*-stem would have taken in Greek prior to the addition of the *-t-*. The question is not necessarily as straightforward as it sounds. Although one can with relative security posit a proterodynamic flexion for the *-mn-* stems (i.e NA *-m̥*, G. in *-mén-s*) for a certain point of time in PIE (because a zero-grade suffix *-mn-és* would have simplified to *-nés* as in the masculine *akmon*, *aksnas* continued in Sanskrit) already within PIE there seems to

have been a tendency to extend the zero grade of the suffix throughout the paradigm. (e.g. vedic *namnas*, Hittite *lamnas laman-* both from zero grade.) In fact, only Vedic, and possibly O.Ir. keep some reflexes of an *e*-grade suffix. There are no traces of an *e*-grade suffix in Greek, and it seems fairly safe to assume that proto-Greek had everywhere a generalised zero-grade of the suffix, i.e. *mn̥*, *-mn-*. Similarly, Greek conserves no traces of ending ablaut, and as its elimination was already underway in late PIE (Rix 1976,124) we may reckon without it. (The alternation of *-ei* vs. *-i* in the dative singular is not a continuation of ablaut, since the PIE dative ending **-ei*, did not show ablaut, but rather *-i* represents an original locative, **-ei* the dative (Rix 1976, 120, 177.) All case endings, therefore, ended in a vowel, with the exception of the dative and instrumental plural, which, given its survival in Mycenaean must be included. The most plausible reconstruction therefore, and the most straightforward is something along the lines of sg. NAV **-mn̥*, G **-mn-os*, D **-mn-ei*, L **-mn-i* (?) (Dual omitted) pl. NAV **-mna*, G **-mnōn*, D **-mnsi* > **mn̥hi* (with *-s-* later restored by analogy) I **-mn̥pʰi*. In most cases, at least, the root would contain the reflex of an *e*-grade. (If one had pressing reasons to do so, one could argue for the analogical retention of the *-n̥-* in the oblique cases, (e.g. *-mn̥-os*) parallel the analogically formed *ἄν-υδρος*, next to the phonologically regular but morphological obscure *νώνυμνος*. However, there is no evidence of a such a phenomenon either in Greek or in the other languages, and quite reasonably, it has never been proposed.) There becomes somewhat more room for discussion once the syllabic nasal is vocalised. Assuming the *-t-* had not already become general in the declension by the time this change took place, the most straightforward development would simply be *-ma*, *-mnos* etc. *-mahi*. However, a "Sievers" type variant is sometimes reconstructed instead, i.e **-Cma*, G **-Cman-os* etc.. A Sievers' phenomenon affecting nasals is sometimes taken to account for the discrepancies between nasal present in *-n-* e.g. *δάκνω,* and those in *-an* e.g. *λαμβάνω*. However, evidence for "Sievers" type alternation of nasals in PIE is weak, and the Greek forms can be better explained by other means (Barber 2013). Rix, who does assume Sievers' law operated for all PIE resonants, nonetheless does not invoke it to explain these forms (221). Furthermore, since in the majority of *-mn̥-* stems the *n̥* would follow a heavy sequence, as it will always follow a consonant (the *m*), which usually is preceded either by a long vowel or another consonant, one might expect that

the *-*an-os* variant would be generalised. The sole piece of potentially direct evidence does not suggest this. If *βέλεμνα* can be taken as the original plural of **βέλεμņ*, and *βέλεμνον* as a backformation therefrom, one has to assume that either, **-VlH-* did not count as a "heavy" sequence, or else Sievers' law did not operate in this context. The form *νώνυμνος*, if it can be analysed *νώνυμν-ος* rather than *νώνυμ-νος,* would point in the same direction. As far as concerns the *-mņ*-stems themselves, the thoroughness with which the original *n*-stem was modified weighs itself somewhat on the side of a uniform development to *-n-*. While **-ma*, **- manos* is as transparent a paradigm as *-ma*, *mat-os*, and **-manos*, bears as clear a relationship to the NA as does *-matos*, the same cannot be said of a paradigm **-ma*, **-mnos*. The likelihood of replacing such an inflection with the *-at-* stem seems considerably higher. (This is assuming that the change **ņ > a* preceded, if not the first introduction of the *-t-*, at least its thorough incorporation into the paradigm, but see discussion below). These considerations are by no means decisive. However, taking all together, it seems better to operate without a Sievers variant in *-an*.

The second question is what form the *r/n*-stems would have taken. Here, we need concern ourselves only with those which in Greek continued to show a heteroclitic inflection, and not with forms such a *πῦρ*, *πυρός* which, though derived from an original *-r/n-* does not leave any traces of the *n*-stem within Greek. The situation is slightly more complicated than for the *mn*-stems, because of the greater diversity of stem formations. A few forms, like *ὕδωρ,* which have a long *ō* in the NA sg., reflect an old collective, which in other languages (e.g. Hittite, Avestan) was developed into a plural form. In most words, however, the NA accusative is in *-αρ < *-ŗ*, and this may be assumed to be the earliest Greek ending. A second complication is the fact that unlike the *mn*-stems, the *r/n*-stems probably showed in early PIE (at least) three different ablaut patterns (Eichner 1973; Schindler 1975a; Meier-Brügger, Fritz, and Mayrhofer 2003, 204). The inflection of the collective is best traced to an amphidynamic pattern, with an accented *e*-grade root and *o*-grade suffix in the strong cases, and an accented *e*-grade ending with zero-grade root and suffix in the weak cases. (The PIE collective of neuter *-men*-stems also followed this pattern. However, it has not left discernible traces in Greek. The form *χείμων* could be derivable from an old collective of which *χεῖμα* would represent the singular, but synchronically it is simply a masculine *-m(e/o)n*-stem

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(Schindler 1972, 1975a; Sihler 2008, 295). In the case of the *r/n*-stems, those with a simple suffix can probably be traced to an acrostatic paradigm, with a zero- grade of the suffix in all forms. However, words formed with a complex suffix appear to have followed a proterodynamic inflection, like the *mn*-stems, where a G sg. *Cén-s* is expected. And unlike the *mn*-stems, this form is fairly well attested in some of the individual languages, e.g. Hittite NA *pa-ah-hur*, G *pa-ah-hu-uen-a-as* reflected in **péh₂-wŗ*, **peh₂-wén-os* «fire», Vedic *dhánur, dhánvan-*, also certain Avestan forms and the solitary Old Irish *arbor*, G *arbe* < **-ens* «grain» (Schindler 1975a, 12.) There is, however, no evidence for it in Greek, and while it is possible to imagine that Greek preserved alongside - *ŗ* /-*nos*, and *ōr, -nos*, certain words in -*ŗ*/-*en-os* up until the time the oblique stem was replaced by -*ņt*-, it seems much more likely that an oblique stem -*n*- was first generalised in all cases, to which the -*t*- could secondarily be added. One could therefore tentatively reconstruct the following for the *r/n*-stems: NA sg. *ōr* or -*ŗ*, G -*n-os* etc. In other words, inflection of the *r/n*-stems would be identical to that of the *mn*-stems outside of the NA sg.

Schmidt/Kretschmer's theory, therefore, requires some modification. In particular, Schmidt's *φέρα, φερατος* should be replaced (or at least complemented) by an athematic form. This does not leave a shortage of examples especially if, as per Kretschmer's suggestion, one adds the adjectives in **-went-*. Also, it seems that the transition to the *nt*-stems may well have gotten underway while the syllabic nasal was still in place.

Conclusion

In comparison with other proposed solutions, there are relatively few objections to be levelled at Schmidt's theory, in this slightly modified form. Anghelina (2010) criticises it on the ground that it does not provide an explanation of how the *-t-* came to be inserted into the *r/n*-stems, but this criticism has already been addressed. Anghelina also objects to the idea that participles might affect the declension of nouns. Given that participles can function syntactically as nouns, and that their declension is formally identical, except for the distinction of gender, it is difficult to see why the inflection of one might not affect the inflection of the other. Furthermore, it appears to have done so within the history of Greek. In addition to the neuters, a number of masculine *n*-stems are inflected as *nt*-stems, although related formations within Greek attest to the secondary nature of the *-t-*, e.g. δράκων, -οντος, but δράκαινα, λέων, λέοντος, but λέαινα etc. Perhaps Anghelina would prefer to explain these cases also as developments from the dative plural, before the ablaut was levelled, but in general, the influence of participles is accepted as an explanation. One could also point to the influence of the pronominal declension on the endings of thematic stems in PIE.

Sihler (2008, 297) argued that if one accepted the *nt*-stems as a model it was "hard to progress beyond a vague likelihood" and "the supposed model paradigm has been everywhere replaced." The first of these criticisms is valid, in a sense. One cannot conclusively demonstrate that the *nt*-stems served as the model for the *men-* and *r/n*-stems. Only that the model was available, and that the outcome of the change conforms with it. However, it does not seem that Sihler's caution is more pertinent in the case of this theory than in any other proposed explanation of morphological change.

Silhler's second criticism, is true as well. The starting point, a NA sg. nt. *-n̥,* G sg. *-n̥t-os* is indeed only preserved, at best, in a few relics. All the same, it can be assumed with some confidence to have existed at the right time. Furthermore, the analogy is unobjectionable. The nt. NA sg. ending *-n̥* could genuinely belong to an *nt*-stem as well as to an *n*-stem. It is no surprise that the neuters were systematically replaced, while the masculines and feminines showed only sporadic transition to the *nt*-declension. In the neuter both the NA were liable to re-interpretation as a *t*-stem, while in the animate forms only the nominative

was. The *m(e)n*-stems are a highly uniform group, and it is easy to understand how a change could spread relatively quickly. The connection to the *r/n*-stems is slightly more tenuous, but they do have more in common with the *m(e)n*-stems than with any other group. (A *m(e)r/m(e)n*- suffix does exist, but given that it is quite rare, and given that its only two representatives in early Greek, τέκμαρ and τέκμωρ are attested only in the NA sg., it is hard to see that this subclass can have played a significant role.)

The *nt*-stem theory provides an adequate explanation of the Greek situation. That was indeed the very limited aim of this paper. In very general terms, it may also provide an explanation for some of the "stray" *t*'s one finds attached at times to *n*-stems in PIE or other languages. Given the co-existence, whatever their origin, of both *-nt*- and *-n*-, and in fact *t*-stems, and given that both *-n*- and *-t*- were under certain conditions liable to be lost or assimilated to surrounding sounds, one might expect to find a certain degree of erratic fluctuation between the two classes. Such an observation is so vague as to be quite unhelpful, but at least it is not contradicted by known facts.

In opting for a solution that seems to account for the facts in Greek, one is forced to leave many other phenomena unexplained. Although it would be more satisfying if one were able to draw together the *-t*- of the NA *-r/n*- in Sanskrit and the *-t*- of the nearly synonymous suffixes *-man-, -vant-, man, mant, vasanta, gimmant*- etc., it seems at present they can only be connected if one ignores many of the details of each specific situation. For the time being, it appears they must be dismissed as similar, but essentially unrelated, or at least only very indirectly related phenomena. It is entirely possible that further research will reverse this conclusion.

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