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# Nominative-Accusative Syncretism and Syntactic Case

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Syncretism in inflectional paradigms is commonplace, and linguists who work with heavily inflecting languages develop intuitions about what kinds of syncretism are "natural", but the motivations of syncretism (on any level) are difficult to demonstrate rigorously.<sup>1</sup> In this paper I hope to contribute to such a demonstration for nominative-accusative (NA) syncretism.

After discussing the problem of what constitutes evidence (§1) and showing that many examples of syncretism can be historical accidents of no systematic relevance (§2), I describe instances of NA syncretism in Ancient Greek (§3) and West Germanic (§4) that cannot readily be explained as accidental. I consider explanations of these phenomena from several theoretical points of view (§5) and propose a morphosyntactic account in terms of Halle and Marantz' "Distributed Morphology" (§6); some general conclusions and suggestions for further work follow (§7).

The "formalist" approach I have adopted in pursuing these questions is a reaction to more than a decade of frustration with traditional treatments of morphological change (such as Kuryłowicz 1949). It should therefore come as no surprise that I find unhelpful the work of Wurzel (1984), Bybee (1985), Maiden (1992) and other scholars who have remained relatively close in spirit to traditional ways of thinking about these problems. Such approaches are unsatisfying in at least two ways. Though they correctly identify observable tendencies of change, they provide no principled explanation of changes that operate in a direction contrary to our expectations; this is especially the case for those hypotheses that recognize competing tendencies, with which virtually any development can be "explained". Moreover, all these scholars seem to be proceeding on the assumption that the least abstract solutions available are preferable, and that more abstract approaches should be considered only as necessary. I can find no principle of linguistics that justifies this assumption; in fact, the entire enterprise of generative grammar represents a deliberate departure from such "bottom up" analyses. I am convinced that any truly explanatory account of inflectional morphology must relate it to syntax, and for that reason I have tried to pursue questions about syncretism in the Government-Binding (GB) tradition, which provides a wealth of theoretical tools for such an inquiry.

Readers should be advised that sections 2, 3, and 4 present large amounts of morphological data in great detail; syntacticians may wish to read those sections relatively lightly, concentrating on the conclusions rather than on the details of the data.

### 1 Definitions and approaches

I define syncretism as the morphological expression of contrasting morphosyntactic categories, or combinations of such categories, by the same affix or morphological process. For example, the Latin paradigm of "first declension" (I decl.) nouns exhibits syn-

<sup>1</sup> That an attempt to treat the motivations of syncretism in formal terms would be worthwhile was first suggested to me by Anthony Kroch, and continuing discussions with him have contributed substantially to the progress of this work; discussions with Anne Vainikka at a critical moment have also been very important. In addition, I would like to thank Maria Bittner, Robin Clark, Michael Covington, Joe Eska, Andrew Garrett, Roger Higgins, Hans Hock, Brian Joseph, Mark Liberman, Craig Melchert, Joe Salmons, Ann Taylor, and three anonymous referees for much helpful discussion. None of these colleagues necessarily agrees with me, and of course all remaining errors, omissions, and infelicities are my own.

cretism in that the Gsg.,<sup>2</sup> Dsg., and Npl. are all characterized by the ending *-ae*, while the Dpl. and Abpl. both end in *-is*. I am NOT defining syncretism as the complete merger of morphosyntactic categories (which is what the term has usually meant in historical linguistics); thus the fact that the Proto-Indo-European (PIE) instrumental case has completely merged with the ablative in Latin is not "syncretism" under the definition used in this paper. Syncretism as here defined corresponds more or less exactly to Carstairs' "inflectional homonymy" (Carstairs 1987:87-90) and Meiser's "formal syncretism" (Meiser 1992:188-90).<sup>3</sup>

It is clear that syncretism is a phenomenon of autonomous morphology, since it does not affect the syntax (Aronoff 1994:82-5). Theoreticians sometimes seem to take it for granted that particular instances of syncretism are principled, reflecting the covert structure of a language's inflectional morphology; examples that come readily to mind are Jakobson (1966[1936], especially pp. 83-8), Williams (1981:267-9), Pinker (1984:178-9), Zwicky (1985:374), and Luraghi (1991:63-6). Such proposals are usually plausible—for example, it makes intuitive sense that the Dpl. and Abpl. should be syncretized in Latin, since they appear to be the two most "marked" cases—but it is not obvious that any particular proposal is correct, since one also finds syncretisms that cannot possibly reflect the structure of the paradigm (Jakobson 1966[1936]:52, McCreight and Chvany 1991:99). A particularly clear example of the latter is the syncretism of Gsg. and Npl. in several classes of Latin nouns (I decl. *-ae*, II decl. m.f. *-i*, IV decl. m.f. *-ūs*); as Williams (1981:268-9) observes, this can only be an accident, since Gsg. and Npl. share no grammatical features under any reasonable analysis. (Bierwisch 1967:245-6 makes a similar point for German; cf. also Joseph and Wallace 1984:322-3 on syncretism in Latin nominals, and see further below.) It seems clear that a rigorous investigation of syncretism must start with the opposite assumption: ANY instance of syncretism might be accidental; if we wish to provide a cogent explanation for syncretism as a process of grammar, we must concentrate on those syncretisms which we cannot actually explain as accidents.

Carstairs (1987:90-102) argues for a distinction between accidental and systematic homonymy in paradigms on distributional grounds; for example, he regards the syncretism between Dpl. and Abpl. in Latin nominal declension as systematic because it is exceptionless and cannot be described as the consequence of any independently motivated rule, while most other syncretisms in the system of Latin noun inflection are considered accidental because they do not occur in all lexical classes.<sup>4</sup> This is also the approach of Zwicky (1985:374-5). One can define the terms this way, but that tells us little about the principles of syncretism and perhaps nothing at all about the motivations for it; observation of the syn-

<sup>2</sup> I use the following abbreviations for case, number, and gender markers: N = nominative, Ac = accusative, G = genitive, D = dative, Ab = ablative, I = instrumental, V = vocative; A = accusative in languages with no ablative case; sg. = singular, du. = dual, pl. = plural; masc. or m. = masculine, fem. or f. = feminine, neut. or n. = neuter. "Declensions" are lexical classes of nouns, identifiable by their patterns of inflectional endings; Latin declensions are identified with Roman numerals according to the traditional system.

<sup>3</sup> The complete merger of morphosyntactic categories is Meiser's "functional syncretism" (loc. cit.). Carstairs uses the term syncretism more complexly: "A systematic inflectional homonymy is a syncretism if (a) the homonymous forms are simultaneous exponents of more than one morphosyntactic property, and (b) the conditions under which the homonymy occurs (or: the context for the homonymy) can be stated entirely in terms of properties thus realised" (Carstairs 1987:115-6). In other words, Carstairs restricts the term to homonymies that are exceptionless (see below) and are not externally conditioned (e.g. phonologically), and to "fusional" languages.

<sup>4</sup> Some further theoretical considerations are also involved (see Carstairs 1984b, 1987: 102-28), but all are synchronic, essentially based on distributional observations.

chronic distribution of syncretisms does not necessarily reveal the organizational principles which underlie them, or whether they are all learned the same way, or what purpose (if any) they might serve. On the other hand, it is reasonable to suppose that the conditions under which particular syncretisms first arose in the history of a language will reveal something about the motivations for them; historical evidence should therefore be useful.

Motivations for syncretism, both synchronic and diachronic, can be suggested on several levels. Presumably any particular instance of syncretism is ultimately the result of a historical change which was accepted by a language community for reasons that were in part social; but if the change in question occurred more than a century or so ago, its social motivations will probably be unrecoverable for lack of evidence. It is also very likely that the change in question occurred in a context of second-language (or -dialect) learning (Kiparsky 1978: 86-7), but the details of that process, too, are often unrecoverable.<sup>5</sup>

These difficulties can be circumvented by focussing on types of syncretism that are common crosslinguistically. For patterns of syncretism that recur independently in numerous languages we should be able to suggest system-internal motivations (which will have operated in conjunction with the historical contingencies just mentioned); but it appears that hardly anyone has approached the subject from a comparative point of view. The only noteworthy exception<sup>6</sup> is Andrew Carstairs, who notes that syncretism is typical in "fusional" paradigms but not in strictly agglutinative ones, and suggests that a functional motivation for syncretism is that it reduces the burden on the memory in the former case but would not do so in the latter (Carstairs 1984b:80-2, Carstairs and Stemberger 1988). This is almost certainly correct,<sup>7</sup> but the hypothesis is too general to be of much immediate use; in particular, it does not help to explain why some syncretisms rather than others typically occur. The latter question is answered in part by other principles of paradigm architecture (such as the "slab" principle; see especially Carstairs 1984a:103-10, 1987:77-83) and by considerations of markedness (on which cf. e.g. Battistella 1990 with bibliography, and see below for some examples), but there is a residue of cases for which no plausible functional explanation can be offered.

This unexplained residue includes NA syncretism, which one might expect to be dysfunctional in heavily case-marking languages with scrambling (or other pervasive word-order changing rules). Fortunately the historical origins of several instances of NA syncretism are documented or reliably reconstructable by the comparative method, and it is to such cases that we must now turn. The first case history, however, reveals a serious pitfall to be avoided.

## 2 A cautionary tale: syncretism in Latin noun inflection

The inflection of Latin nouns offers a familiar set of parallel paradigms, associated with lexically determined gender and stem classes, in which syncretism is commonplace.

<sup>5</sup> I emphasize that motivations must be reconstructable IN DETAIL in order to contribute to our understanding of language structure and change; general observations about the relation between language contact and change are of little use. O'Neil (1978) is a case in point.

<sup>6</sup> Mention should also be made of Coleman (1993), a cursory overview of some of the older IE languages which is useful for orientation. Meiser (1992) deals almost exclusively with the complete merger of morphosyntactic categories (i.e. "syncretism" in the sense usual among historical linguists; see above).

<sup>7</sup> However, caution is advisable: experimental investigation of the role that memory plays in handling inflectional morphology is still in its infancy, and the striking difference between the experimental results of Stemberger and McWhinney (1988) and Badcker and Caramazza (1989) suggests that inflectional morphology might be stored, generated, and processed quite differently in typologically different languages.

The system of Latin noun endings can be found in Table 1.<sup>8</sup>

	II(n)	II(mf)	I(fm)	V(fm)	III(n)	III(mf)	III(mf)	III(n)	IV(mf)	IV(n)
sg. N	-um	-us	-a	-ēs	∅	∅, -s	-is, -ēs	-e	-us	-ū (-u?)
Ac	-um	-um	-am	-em	∅	-em	-em	-e	-um	-ū (-u?)
G	-ī	-ī	-āī > -ae	-ēī	-is	-is	-is	-is	-ūs	-ūs
D	-ō	-ō	-ae	-ēī	-ī	-ī	-ī	-ī	-uī	-ū
Ab	-ō	-ō	-ā	-ē	-e	-e	-e, -ī	-ī	-ū	-ū
pl. N	-a	-ī	-ae	-ēs	-a	-ēs	-ēs	-ia	-ūs	-ua
Ac	-a	-ōs	-ās	-ēs	-a	-ēs	-ēs, -īs	-ia	-ūs	-ua
G	-ōrum	-ōrum	-ārum	-ērum	-um	-um	-ium	-ium	-uum	-uum
DAb	-īs	-īs	-īs	-ēbus	-ibus	-ibus	-ibus	-ibus	-ibus	-ibus

Virtually all the syncretisms in this table fall into three classes.

A number of syncretisms were inherited from PIE, the earliest reconstructable ancestor of Latin. These include the syncretism of Nsg. and Acsg. in all neuter paradigms (the first, fifth, eighth, and tenth columns in the table—as well as all neuter adjectives and pronouns), of Npl. and Acpl. in all neuter paradigms, and of Dpl. and Abpl. in all nominal paradigms. The origin of these syncretisms is beyond recovery, because comparative reconstruction of ancestors of PIE is impossible in the absence of clearly related sister languages; they MIGHT have been the result of historical accidents and must therefore be excluded from the discussion. We do need to explain the fact that these syncretisms persisted in Latin for more than three millennia.<sup>10</sup> But Carstairs' suggestion that syncretism reduces the burden on the memory is sufficient explanation for that fact, provided the syncretisms in question are NOT UNNATURAL; after all, if a language system offers the learner smaller paradigms, the only good reason not to learn them would be that they're prohibitively hard to learn. This tells us that the syncretisms in question are acceptable, but it does not tell us what motivated them in the first place.<sup>11</sup>

<sup>8</sup> I have omitted the marginal locative and vocative cases, as well as a number of minor stem classes (e.g. II decl. masculine nouns in -r). For a brief discussion of some isolated lexical peculiarities, alternative forms, etc. see Joseph and Wallace (1984:322-3, table p. 324). Unlike the instances discussed below, the widespread syncretism of nominative and vocative sg. in Latin, and the syncretism of locative and ablative sg. in consonant stems, are not inherited and do not seem to be wholly accidental; but the marginal status of the locative and vocative cases in the Latin system is likely to have been a factor in those developments. Thus the omission of the locative and vocative cases does not greatly alter the picture presented here. The unconventional order of columns in Table 1 is intended to highlight various instances of syncretism.

<sup>9</sup> See footnote 2 above on the labelling of the lexical classes, and note that III indicates third-declension consonant stems, but IIIi third-declension i-stems. Segmentation of stem and endings in archaic Indo-European nominal paradigms is a well-known problem; I have adopted the solutions that seem most reasonable to me.

<sup>10</sup> I here adopt the hypothesis that the PIE speech community began to disintegrate around 3500 B.C.; for discussion of the problems involved see especially Mallory (1989). "Classical" Latin is the language of the upper class of Rome between about 100 B.C. and the early second century A.D.

<sup>11</sup> These developments contrast sharply with the fate of the Absg. in Latin, and indeed in Italic as a whole. In PIE the Absg. and Gsg. exhibited the same endings in all stem classes except the o-stems (= the Latin II decl.); but in Italic distinctive Absg. endings were developed for all stem classes on the model of the o-stems, thus undoing the syncretism. A further complication involves the fate of the instrumental case in Italic. It merged with the ablative, and in fact the Latin II decl. DAbpl. ending -īs < \*-ōys was originally

A second group of syncretisms in Latin declension arose by regular sound change. These include<sup>12</sup> II decl. Dsg. *-ō* < \**-ōy* (Sommer 1914:341-2) but Absg. *-ō* < *-ōd* (actually attested in Old Latin);<sup>13</sup> II decl. Gsg. *-ī* < \**-ī* (Devine 1970:1-9, 14-5, 86-7) but Npl. m.f. *-ī* < \**-ōy* (Sommer 1914:346-7); III decl. i-stem Dsg. *-ī* < \**-ey*, plausibly < \**-eyey* by haplogy (Meillet 1914), but Absg. *-ī* < *-īd* (actually attested in OLat.);<sup>14</sup> IV decl. Gsg. *-ūs* < \**-ows* (Sommer 1914:388), but Npl. m.f. *-ūs* < \**-owes* (ibid. p. 392)<sup>15</sup> and Acpl. m.f. *-ūs* < \**-uns* (ibid. p. 393). Regular sound change is a mechanism of language change strictly confined to the phonetics and phonology of languages. Thus the original motivations for these syncretisms—that is, the language changes that brought them into existence—were strictly non-morphosyntactic; in terms of the language's morphology, these syncretisms originated in historical accidents that do not necessarily reveal anything about the system of inflection (though we can at least say—again—that they cannot be unnatural, since they persisted over a substantial period of time).

The third large group of syncretisms in this system owes its existence to the spread of inflectional endings from one lexical class to another (horizontally in the table), or from pronominals to nouns and adjectives—that is, the extension of an affixing rule to a lexical class not previously within its scope. (In many cases sound change also played a part.) The following cases are straightforward: III decl. i-stem Nsg. m.f. *-is* is inherited, but Gsg. *-is* < \**-es* is the inherited consonant-stem ending, replacing inherited i-stem Gsg. \**-eys* (Sommer 1914:369, 372); III decl. i-stem Nsg. m.f. *-ēs* apparently also reflects an inherited ending (cf. Kuiper 1942:64-8), probably \**-ēy* > \**-ē* → *-ēs*, with Nsg. *-s* from other paradigms, resulting in syncretism with the inherited Npl. *-ēs* (see immediately following); III decl. i-stem Npl. m.f. *-ēs* < \**-eyes* is inherited, but Acpl. m.f. *-ēs* (which is in competition with inherited *-is*) is the C-stem ending—while III decl. C-stem Npl. m.f. *-ēs*, on the other hand, is the old i-stem ending, replacing inherited \**-es* (Sommer 1914:382, 385-6).

There are also three cases that require more detailed discussion.

an instrumental ending (on which was modelled the I decl. ending \**-ays* > *-is*); yet the preexisting syncretism of Dpl. and Abpl. was not affected by those developments. Discussion of these phenomena is beyond the scope of this paper, but they will eventually have to be dealt with in any general account of syncretism.

<sup>12</sup> Some of the more complex syncretisms discussed in subsequent paragraphs involve regular sound changes, but they also involve (or might involve) other types of change.

<sup>13</sup> I use the symbols < and > to indicate regular sound changes, ← and → for changes of other types.

<sup>14</sup> As an anonymous referee reminds me, this is not the whole story of the III decl. Absg. Consonant-stem *-e* has in part spread to the i-stems (by the process described below), thus undoing the sound-change syncretism; cf. footnote 11 above for some other instances of reversal of syncretism in Latin ablatives. More significantly for the present investigation, the variation between *-e* and *-ī* has spread from i-stem adjectives to consonant-stem adjectives, thus creating a partial syncretism by the process discussed in the following paragraph; and while *-e* was eventually generalized among nouns, *-ī* was generalized among adjectives. The huge numerical preponderance of i-stem adjectives over consonant-stem adjectives must be at least partly responsible for the latter development, and that suggests one reason for the spread of endings from paradigm to paradigm even when syncretism results (as discussed below); but the most interesting thing about this case is that it shows that identically inflected nouns and adjectives can be assigned to different lexical classes, and so can develop differently, solely on the basis of their category difference. For the facts see Sommer (1914:375-8); cf. also Carstairs (1984c:122-3).

<sup>15</sup> I do not share the nervousness that Lejeune (1943:87) expresses in positing this as a purely phonological development. Lejeune's proposed scenario, according to which the Npl. and Acpl. m.f. forms in nearly all stem classes merged by sound change and/or analogical change, and the I and II decl. forms were later re-differentiated by the introduction of pronominal endings (Lejeune 1943:89-90), presupposes a chronology of changes which cannot be demonstrated.

I decl. Gsg. *-āī* (> *-ae*) clearly arose by suffixation of II decl. *-ī* to the stem vowel *-ā* (Sommer 1914:325-6), and it seems equally clear that V decl. Gsg. *-ēī* (> *-ei*) arose by extension of the rule that formed the I decl. ending (Sommer 1914:397, Leumann 1977:446). The history of the Dsg. endings is much less clear, but the consensus of opinion is that their merger with the Gsg. endings was an accident in which regular sound change played a major role (Sommer 1914:327-8, 398-9, Leumann 1977:417-20, 445-6).<sup>16</sup> I decl. Npl. *-ae* is clearly parallel to II decl. *-ī* (see above), both ultimately reflecting the spread of pronominal endings to other nominals (see e.g. Sommer 1914:329, 346-7), though the phonological history of the I decl. ending is much less clear than that of its II decl. model or analogue.<sup>17</sup> In short, the three-way I decl. syncretism in *-ae* ultimately resulted from the spread of two endings (Gsg. and Npl.) to the I decl. from the parallel paradigms of other lexical classes, plus at least some regular sound changes; and the same is true, *mutatis mutandis*, of the V decl. syncretism in *-ēī*.

The syncretism of V decl. Nsg., Npl., Acpl. *-ēs* resulted from an enormously complex process involving the conflation of three inherited paradigms: a diphthong stem (the source of *diēs* 'day'), an aberrant i-stem (the source of *rēs* 'thing, property, business'), and a class of laryngeal stems (the source of V decl. nouns in *-iēs*).<sup>18</sup> Nsg. *-iēs* is the regular reflex of inherited \**-yēh₂-s*, and the *-ēs* of *plēbēs* 'common people [collective]' can reflect a parallel \**-wēh₂-s* (with regular loss of \**w* after a labial; Steinbauer apud Mayrhofer 1986:133); Npl. *rēs* directly reflects inherited \**rēy-es* < \**Hreh₁-y-es* (Szemerényi 1956:173, 176-8); Acpl. *diēs* can also be inherited (cf. Szemerényi 1956:196-8 and especially 200), and there is at least some possibility that Acpl. *-iēs* is the sound-change outcome of an inherited ending (by "Stang's Law"; see Stang 1965, Mayrhofer 1986:163-4).<sup>19</sup> The constitution of the Latin V decl. from these three very different paradigms clearly involved extensive spread of endings, including the endings under discussion, from one lexical class to another, but the details are no longer recoverable.

The last problematic class are the IV decl. neuter nouns, a perennial crux of Latin historical linguistics. The evidence regarding the length of the NAcsg. ending is conflicting, but it is clear that at least some nouns exhibited long *-ā* at least some of the time (see now Weiss 1993:92-3). The PIE ending was clearly short \**-u* (preserved in Skt., Gk.,

<sup>16</sup> The standard explanation of I decl. Dsg. *-ae* (given by both the sources cited) is that it developed by regular sound change from the inherited ending \**-āy*; but one would expect such an ending to have given *-ā* by regular sound change (cf. the corresponding II decl. ending discussed above), and in fact Dsg. *-ā* is frequently attested in non-urban inscriptions. It seems more likely that the I decl. ending has been modelled on the OLat. monosyllabic V decl. ending *-ei* (see the sources cited), which in the case of the overwhelmingly common noun *rēs* 'thing' can reflect inherited \**-ey-ey* (Szemerényi 1956:177-8). Why this later ending should (later) appear as disyllabic *-ēī* is unclear; at least two plausible explanations come to mind (extension of a rule 'Dsg. = Gsg.' from the I decl. to the V decl.; introduction of III decl. Dsg. *-ī*).

<sup>17</sup> Again *-ae* is said to reflect \**-āy* (formed on the analogy of II decl. \**-ōy*) by a sound change that is seriously suspect. A preform \**-ay* would be at least as plausible, were it not for the fact that, since it always occurs in an unstressed syllable, the noun and adjective ending \**-ay* should have become *-ī* (see e.g. Sommer 1914:102). I would suggest instead that noun and adj. Npl. (*-ai* >) *-ae* reflects a relatively recent introduction of the pronominal ending \**-ay* that had survived without change in stressed monosyllables (*hae* Npl. f. 'these', *quae* Npl. f. 'which'). Exactly what ending it replaced is debatable (\**-ās*? \**-ī* < \**-ay*??).

<sup>18</sup> *spēs* 'hope' and *fidēs* 'trust, faith' are old s-stems that have been attracted into the V decl. secondarily, and there have been some other interchanges between the III and V decl. as well; see Sommer (1914:395), Ernout (1926:109).

<sup>19</sup> There is some possibility that Npl. *rēs* and Acpl. *rēs* eventually fell together by regular sound change, if the expected Acpl. \**Hreh₁-i-n*s was replaced by \**Hreh₁-y-ns* (with stem \**Hreh₁-y-* from the oblique cases, Szemerényi 1956:177-8), or if, at a later stage, the expected Acpl. \**reins* was replaced by \**rēyens*.

Gothic, etc.), and the source of Latin *-ū* remains somewhat obscure, though a development involving transfer of a dual ending into singular function seems most likely (Weiss 1993: 94-100). The sources of Absp. *-ū* and Dsg. *-ū* are clearly different; the former uncontroversially reflects Proto-Italic *\*-ūd*, while the latter is perhaps best explained as the result of extending the rule that generated i-stem Dsg. *-ī* or its ancestor to the u-stems (i.e. the IV decl.) at some point in the development of Proto-Italic or Latin (see Lejeune 1943:94-6, Weiss 1993:98-9 with footnote 15).

The spread of markers from one lexical class to another is an extremely common type of morphological change among the inflectional endings of IE languages; in fact, it seems to be much more common than any type of change involving affixes that characterize the same lexical class (i.e. on the vertical axis in Table 1).<sup>20</sup> Moreover, a large percentage of the traditionally recognized "analogical changes that cannot be reduced to proportions"<sup>21</sup> belong to this category; familiar examples include recharacterized forms like English *children* or *feet*. This phenomenon is worth exploring in its own right because it seems likely to reveal much about the organization of paradigms in languages with multiple lexical classes; but from the point of view of the paradigms associated with specific classes, syncretisms arising through the spread of affixes from one lexical class to another look just as accidental as the ones caused by regular sound change.

In summary, the accidents discussed above can together account for nearly all the syncretisms in Latin noun endings (though see footnotes 8, 11, 14, and 16 for some qualifications). Of course it does not follow that all these syncretisms were ENTIRELY accidental; as Mark Liberman (p.c.) reminds me, it is quite likely that these syncretisms and others arose by accident, but that only those that fit the structure of the language survived the process of social selection that is always involved in language change. We can even suggest one way in which a syncretism might "fit the structure of the language": as Michael Covington (p.c.) observes, syncretism normally involves inflectional endings of roughly similar phonological shape, and that might be a precondition for the ultimate success of any syncretism. (See sections 3 and 4 below for further examples.) But I do not see how such a scenario can be PROVED for any specific instance of syncretism; and in the absence of such proof we must bear in mind that most of the syncretisms in Latin noun inflection, insofar as their origins are discoverable, MIGHT have been incidental to the structure of their individual paradigms at every stage of their development, and so cannot be relied on to reveal the covert structure of those paradigms—except that these particular syncretisms cannot be excessively difficult to learn.

This is a sobering result. If we simply assumed that syncretism between two or more endings in the paradigm of a given Latin noun reveals the underlying structure of its paradigm, we would be advancing a principled morphosyntactic explanation for what could be a capricious accident of history in most of the examples whose history is recoverable. Clearly we must first exclude such accidents before formulating hypotheses about the structure of a language—especially if those hypotheses are potentially the foundations for theoretical proposals.

On the other hand, by no means all instances of syncretism can reflect easily identifiable historical accidents. The following sections discuss more interesting cases.

<sup>20</sup> This is clearly not true of root alternations, however.

<sup>21</sup> At least according to traditional assumptions about how proportions should be constructed.

### 3 The Greek conundrum

Classical Attic Greek<sup>22</sup> shows little syncretism in nominal paradigms. Table 2 presents a representative sample of noun endings.<sup>23</sup>

Table 2  
Inflectional endings of some Classical Attic Greek nouns.

	α(n)	α(mf)	ᾱ(f)	ι(fm)	υ(m)	υ(n)	ες(fm)	ες(n)	ο(mf)	ι(n) <sup>24</sup>
sg. N	-on	-os	-e:	-is	-ūs	-ū	-e:s	-os	θ, -s	θ, -r
A	-on	-on	-e:n	-in	-ūn	-ū	-e:	-os	-a	θ, -r
D	-o:i	-o:i	-e:i	-e:i <sup>25</sup>	-ei	-ei	-ei	-ei	-i	-i
G	-o:	-o:	-e:s	-e:o:s	-e:o:s	-e:o:s	-o:s	-o:s	-os	-ios
du. NA	-o:	-o:	-a:	-e:	-e:	-e:	-e:	-e:	-e	-te
DG	-oin	-oin	-ain	-éoin	-éoin	-éoin	-oin	-oin	-oin	-toin
pl. N	-a	-oi	-ai	-e:s	-e:s	-e:	-e:s	-e:	-es	-ta
A	-a	-o:s	-a:s	-e:s	-e:s	-e:	-e:s	-e:	-as	-ta
D	-ois	-ois	-ais	-esi	-esi	-esi	-esi	-esi	-si	-si
G	-o:n	-o:n	-a:n	-e:o:n	-e:o:n	-e:o:n	-o:n	-o:n	-o:n	-i:o:n

Of the syncretisms in this table, the following were inherited from PIE: Nsg. and A sg. of neuter nouns (the first, sixth, eighth, and tenth columns); Npl. and Apl. of neuter nouns; Ndu. and Adu. of all nouns.<sup>26</sup> Syncretism of the Ddu. and Gdu. is a Greek innovation, but the prehistory of the endings is so obscure that nothing definite can be said about the process.<sup>27</sup>

The only other syncretisms in Classical Attic Greek noun inflection affect the Npl. and Apl. of masculine and feminine i-stems, u-stems, and es-stems (the fourth, fifth, and seventh columns in Table 2). The same syncretisms appear in the corresponding lexical classes of adjectives; in addition, the alternative Npl. and Apl. of comparative adjectives in

<sup>22</sup> "Classical" Greek is roughly the language of the 5th c. B.C. and the first half of the 4th c.; Attic is the dialect of Athens and its hinterland. My transcription is not a transliteration of the spelling currently in use, but reflects a conservative 5th c. pronunciation (on which see Allen 1974).

<sup>23</sup> The number of lexical classes is much larger than in Latin; for example, there are ten classes in the "I decl." (Smyth 1956:48-52). All classes of m. and f. nouns exhibiting syncretism are included in Table 2. Since the traditional classification of nouns is much less useful in Greek, I have identified the columns as "o-stems" (= II decl.), "ā-stems" (= I decl.), etc. (all remaining stem types belong to the III decl. in the traditional system). I omit the vocative case. Unlike the Latin vocative, the Greek cannot be called marginal on formal grounds, since it differs from the nominative in the singular in a large number of paradigms. Syncretism of vocative and nominative in the dual and plural was inherited from PIE, but subsequent syncretism of Vsg. and Nsg. was not rare, and sound change and other accidents seem to have played little or no role. For brief discussion see section 6 and footnote 90 below.

<sup>24</sup> The problem of segmentation between stem and endings is especially involved for the last column, and the interim solution I have adopted is not necessarily correct; but for the purposes of this discussion any reasonable solution is adequate.

<sup>25</sup> See Thraette 1980:381-3 on the evidence for this Attic ending (which does not appear in Smyth 1956).

<sup>26</sup> All these syncretisms occur in the paradigms of adjectives and pronouns as well.

<sup>27</sup> It has long been noticed, however, that marginal or moribund categories (the Greek dual is both) exhibit an unusually high degree of syncretism (cf. footnote 8 above). The specific motivations for this remain unclear.

-on- exhibit a parallel syncretism.<sup>28</sup> Thus we find the following:

i-stem NApl. *póle:s* (f.) 'cities', *mánte:s* (m.) 'scers', *trê:s* (m.f.) 'three'  
 u-stem NApl. *prêbe:s* (m.) 'ambassadors', *hê:dê:s* (m.) 'sweet'  
 es-stem NApl. *triê:re:s* (f.) 'triremes', *alê:thê:s* (m.f.) 'true'  
 comparative NApl. *mê:sdo:s* (m.f.) 'bigger', beside Npl. *mê:sdonas* and Apl. *mê:sdonas*

A comparison with the etymologically expected reflexes, presented in Table 3, shows clearly that these syncretisms are not the result of sound change.<sup>29</sup>

Table 3  
Development of innovative syncretic endings in Classical Attic Greek.

	Proto-Greek		expected Attic	actual Attic
i-stem Npl.	*-ey-es > *-ees	>	-e:s	-e:s
i-stem Apl.	*-i-ns <sup>30</sup>	>	*-i:s	-e:s
u-stem Npl.	*-ew-es > *-ees	>	-e:s	-e:s
u-stem Apl.	*-u-ns <sup>31</sup>	>	*-û:s	-e:s
es-stem Npl.	*-eh-es > *-ees	>	-e:s	-e:s
es-stem Apl.	*-eh-as > *-eas	>	*-e:s	-e:s
os-stem Npl.	*-oh-es > *-oes <sup>32</sup>	>	-o:s	-o:s
os-stem Apl.	*-oh-as > *-oas	>	*-o:s	-o:s

We must therefore ascribe the origin of these syncretisms to some morphological change.

It is easy enough to describe what has happened: when both Npl. and Apl. are marked by a long vowel followed by -s, syncretism occurs, and it is the Npl. form that "wins out" (Meillet 1905:47-8). Motivating such a development is not so easy. If we could account for the origin of this syncretism in one of the four lexical classes, we might suggest that the rule generating the syncretic pattern was subsequently generalized to the other classes; in the case of the i-stems and u-stems, at least, support for this hypothesis

<sup>28</sup> Though comparative adjectives of this class are inflected largely as n-stems, the Npl. and Apl. of all genders exhibit relic alternative forms reflecting the original os-stem inflection of the class. On the history of these comparatives see further Szemerényi (1968b).

<sup>29</sup> An anonymous referee asks whether Attic es-stem and os-stem Apl. -e:s, -o:s might not be the reflexes of pre-Greek \*-es-ns, \*-os-ns by regular sound change; sound-change merger of Npl. and Apl. in these classes would then provide a model for the syncretism in the other classes discussed here. Unfortunately this suggestion is completely at variance with the known sound changes of Ancient Greek; pre-Greek \*h is always vocalized, and the outcome is usually *a* (though a few dialects show *o*). Of course, since there are no other cases of \*-Vsps, we cannot assert that the sound change suggested is IMPOSSIBLE. But that does not alter the balance of evidence, because of the methodological constraints within which historical reconstruction must operate. Since historical linguistics essentially extrapolates into a domain in which hypotheses are not directly testable (usually prehistory), any hypothesis must be well supported if it is to be acceptable. Since there is no support for this hypothesis, we are constrained to reject it—all the more so because it provides us with a highly desirable explanation for refractory data, and the danger that it will be accepted for precisely that reason (and so give rise to a circular argument) is consequently considerable.

<sup>30</sup> Cf. Cretan *trîns* Apl. 'three' (← \*trîns).

<sup>31</sup> Cf. Cretan *uîns* Apl. 'sons'.

<sup>32</sup> Cf. Mycenaean (Linear B) *me-zo-e* 'bigger'. The Linear B syllabary included signs for open syllables only; thus the final \*-s is not written.

can be found in the fact that the i-stem Gsg. ending -e:s has also been generalized to u-stem nouns.<sup>33</sup> But it is virtually impossible to explain the first instance of this syncretism (whichever lexical class it occurred in) as a traditional "analogical change", because no plausible model for it exists anywhere in the language. Note especially that an analogy with the inherited syncretic pattern of neuter paradigms is NOT plausible. The morphological distinction between neuter and nonneuter nominals is quite sharp in Ancient Greek,<sup>34</sup> and the neuter nominative and accusative endings bear no resemblance to masculine and feminine endings; moreover, and most importantly, a distinction between Npl. and Apl. in the masculine and feminine was constantly reinforced by the very common o-stem and a-stem paradigms—including especially the definite article,<sup>35</sup> which cooccurred frequently with nouns of all types. More modern theoretical arguments converge on the same result: generalization of the rule syncretizing Nsg. and Asg. of neuter nominals, and Npl. and Apl. of neuter nominals,<sup>36</sup> to a few masculine and feminine paradigms IN THE PLURAL ONLY is an excessive complication of the grammar that we might expect to be disfavored at almost any stage of language acquisition.<sup>37</sup>

A clever solution to this problem along traditional lines was proposed ninety years ago by Jacob Wackernagel. Since it is clear that the stem-final -e- which i-stems and u-stems inherited in the Gsg., Dsg., Npl., and Gpl.<sup>38</sup> has spread to the Dpl. as well (see Table 2),<sup>39</sup> we might suggest that it also spread to the Apl. early in the development of the Attic and Ionic dialects; that is, Apl. \*-ins and \*-uns could have been replaced by \*-ens at an early date, and the latter would then have become -e:s by the regular sound change called the "second compensatory lengthening" (2nd CL; Wackernagel 1903:371-2). This hypothesis is plausible in itself, but an archaic Homeric form and the reconstructable chronology of changes substantially decrease its plausibility. The 2nd CL clearly occurred after the

<sup>33</sup> Not, however, to u-stem adjectives; thus we find *prêbe:s* like *póle:s*, but *hê:dê:s* with the original u-stem Gsg. ending.

<sup>34</sup> An anonymous referee objects to this statement, pointing out that neuter and nonneuter nominals are typically identical except in the nominative, accusative, and vocative. But it is precisely the nominative and accusative that are at issue here; moreover, neuter nominals always show (inherited) NA syncretism, while nonneuter nominals very seldom show NA syncretism. In the relevant sense, then, I think my statement stands (even under traditional assumptions about morphological change).

<sup>35</sup> The relevant forms of the article are m. Npl. *hoi*, Apl. *tô:s*, f. Npl. *hai*, Apl. *ta:s*. The definite article was originally a demonstrative, and is still largely so in Homer; but even in such a function it occurred very frequently (as can be seen from the Homeric poems).

<sup>36</sup> And Ndu. and Adu. of neuter nominals—vacuously, since the rule syncretizing Ndu. and Adu. of all nominals also applies.

<sup>37</sup> Not every complication of the grammar is unlikely to arise in acquisition; see Kiparsky (1978:80-90) for discussion.

<sup>38</sup> In both stem classes the stem-final mid vowel was originally followed by a semivowel (\*-y- in the i-stems, \*-w- in the u-stems) which was lost by regular sound change intervocalically (cf. the Npl. forms in Table 3). In the Gsg. and Gpl. of i-stems -e- developed from -e- by the regular sound change called "quantitative metathesis" (QM); thus *póle:s* 'of a city' and *póle:n* 'of cities' respectively reflect *póle:ws*, which is actually attested in Homer, and \**póle:wn* (and the rule accenting the Gsg. has been generalized to the Gpl.). QM must have occurred before the Homeric poems reached their present form (sometime in the 8th c. B.C.), since Homer does use forms that have undergone the change—but probably not long before, since the formulaic tradition of oral poetry in which the Homeric poet(s) worked also preserves numerous forms that have not undergone QM. The authenticity of both groups of forms is to a large extent guaranteed by the meter of the poems (which is based on a contrast between light and heavy syllables).

<sup>39</sup> The original i-stem Dpl. ending -isi survives in *oîsi* 'to/for/with sheep' and *trîsi* 'to/for/with three'. Stems in -u:- ~ -u- (not included in Table 2) do not exhibit a stem-final mid vowel in any forms.

fronting of inherited long \*a:<sup>40</sup>—the sound change most characteristic of the Attic-Ionic dialect group<sup>41</sup>—had begun, because the new long \*a:'s that arose by the 2nd CL were not fronted (cf. e.g. the Apl. of ā-stems in -a:s < \*-ans, which contrasts with the Gsg. in -e:s < \*-a:s); quantitative metathesis (QM; see footnote 38) also presupposes the fronting of \*a:<sup>42</sup> The date of the fronting of \*a: has been the subject of intensive investigation, but no firm conclusions can be reached (see Laroche 1972). Still, it seems clear that all three changes must have occurred early in the development of Attic-Ionic,<sup>43</sup> since the effects of the first two are uniform throughout the dialect group, while even QM is demonstrably pre-Homeric (though Homer also preserves numerous archaic forms which have not undergone QM; see footnotes 38 and 42). If Apl. -e:s reflects \*-ens by the 2nd CL, it too should be pan-Attic-Ionic in at least one of the relevant stem classes, and we might expect to find it in our earliest extensive documents from that dialect group, the Homeric poems. What we mostly find in Homer are i-stem Apl. -i:s ~ -ias ~ -e:as, of which the first is the inherited form and the others are analogically remodelled on the C-stems, and u-stem Apl. -e:as, likewise a remodelled form.<sup>44</sup> But there are also several instances of *polē:s*, Apl. m. of *polūs* 'much, (pl.) many'—in spite of the fact that the Npl. is virtually always UNCONTRACTED *polēes* (< \*polēwes; Wackernagel 1903:369-70). This would support Wackernagel's hypothesis most powerfully, were it not for two further facts. In the first place, our text of Homer was edited at least twice in antiquity by speakers of Attic Greek, and is therefore riddled with Atticisms—as earlier scholars had suggested, as Wackernagel duly notes, and as he demonstrated at great length in a subsequent book (Wackernagel 1903:370-1 with bibliography, 1916). The ending of *polē:s* can be such an Atticism,<sup>45</sup> replacing an original

\**polūs* or \**polūs*:<sup>46</sup>—and in fact *polūs* is cited as Zenodotos' reading in a scholion (i.e. an ancient textual note) to *Iliad* B 4. This second fact alters the balance of the evidence substantially. Though *polūs* itself could conceivably be the result of a further analogical change (Wackernagel 1903:371), the most economical reading of the evidence recognizes it as the original Homeric form and the -e:s of *polē:s* as an Atticism of the text tradition—and in that case Apl. -e:s is not pan-Attic-Ionic in any stem class, and so is not likely to reflect \*-ens.

Moreover, syncretism of Npl. and Apl. is also attested sporadically in other dialects of Ancient Greek, and the details are different from the Attic situation.<sup>47</sup> In Heraklean,<sup>48</sup> for example, we find a Npl. *tri:s* 'three' which is etymologically the Apl. form, reflecting Proto-Greek (PG) \**trins* (the PG Npl. \**trēes* would have given \**trē:s* in Heraklean).<sup>49</sup> In a number of northern West Greek dialects one even finds instances of C-stem Npl. -es (or its reflex) used in place of Apl. -as (or its reflex). Typical examples are Apl. *dekateores* 'fourteen' (Schwyzer 1923, 320.6,<sup>50</sup> cf. also Bourguet 1925:25-30; Phokian at Delphi, early 5th c. B.C.); *sumpoleme:santes* 'having helped wage war' (Schwyzer 1923, 426.7-8; Akhaian at Dyma, 3rd c. B.C.); *sundiaso:santes* 'having helped save' (ibid. lines 9-10); *damosiophulakes* 'public guardians' (427.4, same dialect, city, and date); *elassones* 'lesser' (ibid. line 12); *kharter* 'thanks' with -er < \*-es (425.16; Elean at Olympia, 3rd or 2nd c. B.C.). Though these phenomena are structurally similar to the Attic syncretisms discussed above, they clearly cannot be explained by Wackernagel's hypothesis regarding the Attic u-stem forms; instead a quite different explanation is usually offered. Some of the examples quotable are the numerals 'three' and 'four'; and the fact that the nominative and accusative of 'two' are identical in Greek (since it's a dual), while 'five' and higher numerals are uninflected, has led to the suggestion that the inflection of 'three' and 'four' had begun to be eroded, so that the nominative and accusative forms came to be used indiscriminately and eventually underwent syncretism (Wackernagel 1903:368, Meillet 1905:48). The syncretic NAp. in -es is supposed to have spread from *tetores* 'four' to other C-stem categories, especially those indicating quantity or size (like *elassones*) and those cooccurring with 'four'; while the participial Apl. in -nt-es is thought to have originated as a Npl. in anacoluthon (i.e. not exhibiting morphological case agreement with the noun phrase of which it appears to be the complement; Wackernagel 1903:368-9, cf. Smyth 1956:479). This explanation of Apl. -es in participles seems plausible, at least at first glance (though see section 5 below); but the remaining hypotheses are not plausible at all. In no dialect of Ancient Greek is any wider erosion of the inflection of 'three' and 'four' certainly attested, while the range of examples of Apl. -es cited above, even omitting the participles, casts

<sup>40</sup> The fronting of inherited long \*a: to (approximately) \*a: was uniform throughout Attic-Ionic, but the subsequent development of the long low front vowel was not; for discussion see Szemerényi 1968a and Gates 1976.

<sup>41</sup> Attic-Ionic is one of the major subgroups of Ancient Greek dialects; its major subdivisions are Attic, West Ionic (the dialect of Euboia and Oropos), and East Ionic (the dialect of the Cyclades and the coast of Asia Minor). Both Ionic dialects exhibit local variation; for example, a "Central Ionic" group comprising the subdialects of the Cyclades is sometimes recognized. All these dialects, but especially Attic, are known from inscriptions. The bulk of Classical Greek literature is also written in Attic, which is consequently by far the best known dialect of Ancient Greek; the dialect of Herodotus and of the Hippocratic corpus is East Ionic, while that of Homer, though artificial, is based on an archaic form of East Ionic with some admixture of archaic Aiolic.

<sup>42</sup> There are a number of probative examples, of which the ā-stem Gpl. is representative: inherited -d:ā:n (preserved unchanged as an archaic Aiolic ending in Homer) > -ē:ā:n (so written on the Stele of Nikandre, a 7th-c. B.C. East Ionic verse inscription of Naxos, though scanned as a single syllable) > -ē:ā:n (so written in Homer, though often scanned as a single syllable) > -ā:n (see Table 2).

<sup>43</sup> Though not necessarily in "Proto-Attic-Ionic", if by that term we mean a historically real, more or less uniform dialect ancestral to the whole group (as opposed to the putative parent dialect reconstructed from the attested dialects of the group by the comparative method—a dialect which is not likely to have been historically real in every detail). Note that the 2nd CL occurred not only in Attic-Ionic, but also in most West Greek dialects and in Boiotian (an Aiolic dialect heavily influenced by West Greek), leaving unaffected, in whole or in part, only some dialects on the geographical margins of the Greek world (East Aiolic, Thessalian, Elean, Kyrenaian, Cretan, perhaps Cypriote) as well as Argolic and the isolated Arkadian; and since the 2nd CL is not reconstructable for Proto-West Greek or Proto-Aiolic, the most plausible hypothesis is that it spread even across major dialect boundaries—in which case it could easily have spread through the Attic-Ionic group after that group had begun to differentiate.

<sup>44</sup> Later East Ionic exhibits i-stem Apl. -i:s, u-stem Apl. -e:as; see Smyth (1894:395-6, 398-9).

<sup>45</sup> The form as a whole, however, cannot; the Attic Apl. of this adjective is the irregular *pollō:s* (cf. Attic Npl. *pollōi*).

<sup>46</sup> One actually expects an acute accent (Wackernagel 1903:370), but analogical sources for a circumflex are available in plenty. For the sake of consistency I transcribe Homeric Greek and the Attic koine (see below) with the same symbols I use for Classical Attic (see footnote 22), though it is clear that differences in pronunciation existed.

<sup>47</sup> I discuss here the clearest and best established examples; some of those listed in Schwyzer (1939:563-4, 589) are doubtful.

<sup>48</sup> This is the Doric (i.e. southern West Greek) dialect of Heraklea, an early Spartan colony in southern Italy that developed its own dialectal peculiarities.

<sup>49</sup> These and other non-Attic-Ionic forms found in inscriptions are transcribed without accents, since inscriptions do not mark accents and the accent systems of dialects outside of the Attic-Ionic group are at best imperfectly known. A relatively full collection of the more important epigraphical texts in dialects other than Attic (insofar as they were then known) is Schwyzer 1923.

<sup>50</sup> The number preceding the period is the identifying number of this inscription in Schwyzer's collection; the numbers after the period identify the lines of the inscription from which the form is quoted.



doubt on any explanation starting from the single lexeme 'four'.<sup>51</sup> More importantly, a piecemeal explanation of the repeated syncretism between Npl. and Apl. can never be wholly convincing. It seems more reasonable to suppose that all these syncretisms of Npl. and Apl., in all dialects in which they are attested, reflect a single process and share a single motivation which has not yet been discovered.

And the range of examples in Ancient Greek is wider still. In the Hellenistic period syncretism of the C-stem m.f. Npl. and Apl., under the form of the old Npl. *-es*, began to occur also in the Attic koiné (the international dialect of Greek used throughout the eastern Mediterranean, based largely but not exclusively on Attic). Examples of Apl. *-es* in place of older *-as* begin to be reasonably frequent in papyri of the 2nd c. B.C. (e.g. *gündikes kat<sup>h</sup>eména:s* 'women seated (Apl.)', *tò:s légontes* 'those (Apl. m.) saying'; see Mayser 1906:59); and though the conservative tradition of writing tends to exclude them, they were clearly part of the spoken language, since the Modern Greek inflection of m.f. C-stems shows NApl. *-es*. It is overwhelmingly unlikely that northern West Greek dialects, remote and chiefly rural, could have influenced the cosmopolitan Attic koiné.<sup>52</sup> It has been suggested that NApl. *-es* arose by analogy with the older NApl. *-e:s* of i-stems, u-stems, etc. (Wackernagel 1903:369), but I find that almost as unlikely because of the numbers and relative frequency of the lexemes in question. Though u-stem and es-stem adjectives are reasonably numerous,<sup>53</sup> and though some of the u-stem adjectives are basic and common, nouns of all the Classical Attic masculine and feminine categories exhibiting syncretism are few; C-stem nouns are more numerous and more frequent, and C-stem adjectives even more so because all masculine active participles belong to that class. While such an analogical extension of the syncretic rule cannot be absolutely excluded, I think we are justified in looking for a more plausible explanation.

In sum, syncretism of the Npl. and Apl. occurred repeatedly in Ancient Greek masculine and feminine paradigms; neither regular sound changes nor traditional analogical changes can plausibly account for that phenomenon, and an explanation of a different kind should be sought. Before we begin that search, however, it is worth observing that the same sort of syncretism has occurred repeatedly and independently in West Germanic languages as well.<sup>54</sup> The following section discusses those phenomena in detail.

#### 4 West Germanic

West Germanic languages exhibit massive syncretism in nominal inflection; a case in point is the Old English (OE) inflection of nouns. A synopsis of OE noun endings can

<sup>51</sup> An anonymous referee asks whether *-es* might not have developed from pre-Greek *\*-ps* by sound change in the Northwest Greek dialects. I doubt that that is even possible; these dialects exhibit *a < pre-Greek \*o* in all clear cases, and a divergent development before final *\*-s* is highly implausible both phonetically and phonologically.

<sup>52</sup> What we know of the sociopolitical situation suggests the reverse, even in less remote outlying dialects: some examples of Apl. *-es* in late West Greek inscriptions are likely to be the result of Attic koiné influence. A case in point is Apl. m. *pántes* 'all' toward the end of the great cult inscription at Andania (Schwyzer 1923, 74.174), inscribed in Messenian Doric (more or less) in 92 or 91 B.C.

<sup>53</sup> Comparatives in *-on-*, however, are a closed class of about 20 members in Attic.

<sup>54</sup> Similar phenomena are also attested in late Hittite; see McIntyre (1986:63-6). I am grateful to Craig Melchert for calling these facts to my attention and for sending me the relevant part of McIntyre (1986), and to an anonymous reviewer for calling attention to the same type of change in late Hieroglyphic Luvian; considerations of space have precluded discussing those data here.

be found in Table 4.<sup>55</sup>

Table 4

Inflectional endings of OE nouns.<sup>56</sup>

	ā(n)	ā(m)	ija(m)	i(m)	ū(f)	ū(mf)	ū(mf)	ū(n)	ū(m)	ū(f)
sg. N	∅	∅	-e	-e	-u	-u	-a, -e <sup>57</sup>	-e	fōt	gōs
A	∅	∅	-e	-e	-e	-u	-an	-e	fōt	gōs
D	-e	-e	-e	-e	-e	-a	-an	-an	fōtes	gēs
G	-es	-es	-es	-es	-e	-a	-an	-an	fōtes	gēs
pl. N	-u	-as	-as	-e	-a, -e <sup>58</sup>	-a, -u	-an	-an	fēt	gēs
A	-u	-as	-as	-e	-e, -a	-u, -a	-an	-an	fēt	gēs
D	-um	-um	-um	-um	-um	-um	-um	-um	fōtum	gōsum
G	-a	-a	-a	-igea	-a	-a	-ena	-ena	fōta	gōsa

Of the numerous syncretisms in this table, some are accidental (in the sense developed above) and some are not; the following types can be distinguished.

In neuter paradigms (the first and eighth columns) syncretism of the Nsg. and A sg., and of the Npl. and Apl., was inherited from PIE. In all the remaining paradigms except the ō-stems and non-neuter n-stems, syncretism of the Nsg. and A sg. occurred by regular sound change (typically by loss of the original endings).<sup>59</sup> Most other syncretisms in the singular are also the result of sound change, as are the syncretism of the i-stem Npl.

<sup>55</sup> I omit some minor lexical classes and the marginal instrumental case, which differs from the dative only in the masculine and neuter singular in pronominal and strong adjective inflection. In the plural the Proto-Germanic (PGmc.) endings were Dpl. *\*-V-maz* and Ipl. *\*-V-miz* (where *\*-V-* is the stem vowel); the last two segments of each ending were lost by regular sound change, and that accident gave rise to an exceptionless syncretism. In the earliest attested stages of OE the a-stem endings of the singular were Dsg. *-e*, Isg. *-i*, both of which became *-e* by regular sound change (Sievers 1882). In ō-stems the replacement of Isg. *\*-u* by Dsg. *-e > -e* cannot have been accidental (cf. the OHG situation below), but the conditions under which it occurred are unclear, since it is unclear how long the instrumental had been undergoing syntactic merger with the dative at the time the change occurred. In other stem classes the prehistory of the Isg. ending is not securely reconstructable. For an exhaustive description of the facts of OE nominal syncretism see Plank 1990.

<sup>56</sup> The stem classes are identified in the same fashion as for Ancient Greek (see Table 2). The m. i-stem endings given are those characteristic of nouns with light stem syllables. In all categories the ending *-u* is dropped after a heavy syllable, but no examples occur in the plural of u-stems with heavy stem syllables (i.e. only *-a* occurs in the NApl. of those nouns). For the consonant stems I cite the lexemes 'foot' and 'goose' to demonstrate i-umlaut of the stem syllable.

<sup>57</sup> In the Nsg. of this class masculine nouns end in *-a*, feminine nouns in *-e*.

<sup>58</sup> In this stem class early Kentish documents exhibit Npl. *-a* and *-e*, Apl. *-e*; early West Saxon documents show Npl. *-a*, Apl. *-e* and *-a*; later documents of both those dialects have NApl. *-a*, while the Anglian dialects have NApl. *-e* at all periods. See Brunner (1965:206).

<sup>59</sup> The C-stem NAsg. is a more complex case than Table 4 suggests. The PIE ending A sg. *\*-m* became PGmc. *\*-u<sup>n</sup>* (the superscript <sup>n</sup> indicates nasalization), which should have been lost in OE after a heavy syllable but have remained as *-u* after a light syllable (see footnote 56). In fact most OE C-stems do have heavy stem syllables and an endingless A sg. The only light-stemmed A sg. that is quotable is *studu* f. 'column', which apparently exhibits the inherited ending. The Nsg. of this noun is also *studu*, and the other two C-stems with light stem syllables, *hnutu* 'nut' and *hnitu* 'nit', show the same Nsg. ending; it seems to have been borrowed from the ō-stems (not surprisingly, since all three nouns are feminine). Thus the syncretism of Nsg. and A sg. in the C-stems is largely the result of sound change, but in small part also the result of the spread of an ending from one lexical class to another. (For the facts of this case see Brunner 1965:226-9.)

and Apl. with each other and with most endings of the singular, that of the u-stem GDsg. with the Gpl., that of the  $\bar{o}$ -stem Npl. with the Gpl., that of the  $\bar{o}$ -stem ADGsg. with the Apl., and that of the C-stem Dsg. with the Npl. (See Brunner 1965:123-8, Stiles 1988: 129-31 for brief discussions of the prehistory of OE vowels in final syllables.)

The multiple syncretism in the n-stems is a special case. Most of the original endings have been lost by regular sound change,<sup>60</sup> and the surviving word-final sequence *-an* was originally part of the stem. The vowel of that sequence exhibited ablaut alternations in the masculine and neuter n-stem paradigms of Proto-Germanic (PGmc.), but those alternations have been levelled in OE. The chronology of those changes is no longer recoverable, but it is at least possible that the levelling occurred when *-Vn-* was still synchronically part of the stem and not a case-and-number ending. Thus we cannot show that the syncretism of OE n-stem endings resulted from processes other than sound change and the levelling of stem alternations (though it may have).

The syncretism of the C-stem Npl. with the inherited Gsg. form (which in OE survives only among feminine C-stems) is likewise complex, but it lies much farther back in the development of the language. Already in PGmc. the ending of both categories was *\*-iz*. In the Npl. this ending is the reflex, by regular sound change, of the PIE Npl. ending *\*-es*; but the Gsg. endings of PIE C-stems present a much more complex picture. Some C-stem nouns exhibited a Gsg. in *\*-és* (with the accent on the ending); others showed Gsg. *\*-s* (with the accent on the stem), and within the PIE period a third ending *\*-os* (unaccented?) also developed. (On PIE Gsg. endings see e.g. Brugmann 1911:150-2 and Schindler 1972, 1975a, 1975b:262-6.) In pre-PGmc. the lexical alternation between Gsg. endings was levelled, *\*-es* being generalized to all C-stem nouns. This ending should have given *\*-is* when accented and *\*-iz* when unaccented (by Verner's Law), but the alternant *\*-iz* was generalized. Any remaining differences of accent between Gsg. and Npl. disappeared by sound change when phonemic accent was lost in PGmc., and at that point (at the latest) the two endings were fully syncretized. It can be seen that this syncretism was the final result of a series of developments incidental to the paradigm.

The syncretism of Npl. and Apl. in the C-stems, u-stems, and  $\bar{o}$ -stems, however, is clearly not the result of regular sound change or other changes external to the paradigm. The same syncretism in the masculine a-stems and ija-stems is probably not externally motivated either, though opinions differ.<sup>61</sup> Once again a comparison of the actually occurring endings with those expected on etymological grounds (presented in Table 5) shows at a glance that these syncretisms are unexpected.

<sup>60</sup> It is not clear whether this includes the m.f. Apl. ending, because it is hard to find unambiguous evidence for the development of *\*-ŋ<sup>n</sup>* (< Proto-Germanic *\*-unz*, see Table 5 with footnotes 64 and 66) in final syllables which did not immediately follow the accented syllable. If the Apl. ending was not lost by sound change, the syncretism of Npl. and Apl. in m.f. n-stems was like that in the C-stems (on which see below).

<sup>61</sup> I adopt the hypothesis that this syncretism, too, is not externally motivated, following Stiles (1988: 139 footnote 18 with bibliography). A full discussion of this hypothesis and the traditional alternative is beyond the scope of this paper.

	PGmc.	PWGmc. <sup>62</sup>	expected OE	actual OE
a-st. Npl. m.	*-ōz → *-ōs <sup>63</sup> >	*-ōs >	-as	-as
a-st. Apl. m.	*-anz >	*-ān <sup>64</sup> >	*-a	-as
$\bar{o}$ -st. Npl.	*-ōz >	*-ō >	-a	-a and -e
$\bar{o}$ -st. Apl.	*-ōz >	*-ā >	-æ > -e	-a and -e
u-st. Npl. m.f.	*-iwiz >	*-iu >	?	-a <sup>65</sup> - -u
u-st. Apl. m.f.	*-unz >	*-ūn <sup>66</sup> >	-u <sup>66</sup>	-u ~ -a
C-st. Npl.	*-iz >	*-i >	(i-umlaut)	(i-umlaut)
C-st. Apl.	*-unz >	*-ūn <sup>66</sup> >	*-u	(i-umlaut)

It is striking that this latter class of syncretisms, like those of Ancient Greek, all involve the Npl. and Apl. (though see also footnote 55 above).

The development of OE adjective endings was similar, except that the strong adjective masc. a-stem Npl. ending that was generalized to Apl. function was not *-as* but *-e* <

<sup>62</sup> It has long been customary to suggest that "Proto-West Germanic" was never a unitary dialect. However, the discussions of the question that I have seen do not distinguish clearly between shared innovations (the only valid basis of subgrouping) and shared retentions, nor do they pay much attention to the chronology of changes. To demonstrate conclusively that PWGmc. was never a unitary dialect, one would have to show that the significant shared innovations that characterize the West Germanic languages were preceded in at least one language by significant changes that the others did not share; until that has been done, the question remains open. In any case, this column reports a reconstructed intermediate stage in the development of the endings that appears to have been shared by the other West Germanic languages. On the sound changes involved see Stiles (1988:129-31).

<sup>63</sup> PGmc. *\*ō* was apparently a long  $\bar{o}$ -vowel that differed from ordinary long *\*ō* by some additional distinctive feature; see Stiles (1988:117-28) for an extensive discussion of its origins and its reflexes in the various Germanic languages. This vowel is sometimes called "trimoric *\*ō*", suggesting that it was overlong; a difference of intonation between the two long  $\bar{o}$ -vowels has also been suggested (with one eye on Balto-Slavic, which evolved such a distinction of intonations on all long vocalic nuclei and which may be particularly closely related to Germanic (Stang 1972; cf. Dyen et al. 1992:54-6, 85-8)). However, Jasanoff (1980:378, 381) points out that PGmc. *\*ō* always reflects older disyllabic sequences of vowels, and we must reckon with the possibility that the disyllabic sequences persisted as such in PGmc. (so that *\*ō* would be merely a comparative construct); this has important consequences for hypotheses regarding the origin of this OE ending (which are beyond the scope of this paper).

<sup>64</sup> Raised <sup>n</sup> indicates nasalization of the vowel. These vowels that developed from PGmc. *\*-Vnz* seem to have been long; at any rate they developed like long vowels, to judge from the following evidence. In Old High German one finds both Npl. and Apl. *gesti* 'guests', with i-umlaut and an overt ending, < PWGmc. *\*gastī* and *\*gastī<sup>n</sup>* respectively (reflecting PGmc. *\*gastīz* and *\*gastīnz*); the form contrasts with both Nsg. and Asg. *gast*, with no umlaut and no overt ending, < PWGmc. *\*gasti*, which reflects PGmc. Nsg. *\*gastiz* and Asg. *\*gasti<sup>n</sup>*, both with endings containing short vowels. In OE most i-stems with heavy stem syllables have been transferred into the a-stems; but the few remaining i-stem plurals, such as *ielde* 'people', show the same pattern (Brunner 1965:214-5). The nasalized low vowel was heavily rounded in OE and closely related dialects and thus developed like inherited *\*ō* (cf. also *gōs* < *\*gans* and the like, Brunner 1965: 53 with Anm. 1).

<sup>65</sup> The source of this ending remains obscure; see Brunner (1965:219) for brief discussion.

<sup>66</sup> If the PWGmc. nasalized vowels had been short, one would expect *-u* after light syllables, zero after heavy syllables (see footnote 56); if they were long (as I suggest) it is not clear what the OE reflex should be (though invariant *-u* seems most likely, cf. ija-stem *ende* 'end' < *\*endi* < PWGmc. *\*andi* < PGmc. *\*andijaz*, with a long high vowel apparently preserved after a heavy syllable). Unfortunately there are no examples of u-stem Apl. *-u* or zero after heavy syllables.

PGmc. \*-ai.<sup>67</sup>

The situation in Old High German (OHG) is similar in general, but different in detail. Table 6 gives a synopsis of OHG noun endings.<sup>68</sup>

Table 6

Inflectional endings of OHG nouns.<sup>69</sup>

	a(n)	a(m)	ija(m)	i(m)	i(f)	ō(f)	u(m)	u(n)	u(f)
sg. N	∅	∅	-i	∅	∅	-a	-o	-a	-a
A	∅	∅	-i	∅	∅	-a	-on	-a	-ūn
D	-e	-e	-ie	-e	-i	-u	-in	-in	-ūn
I	-u	-u	-iu	-iu (-iu →)	-i	-u	-in	-in	-ūn
G	-es	-es	-es	-es	-i	-a	-in	-in	-ūn
pl. N	∅	-a	-e	-i	-i	-a	-on	-un	-ūn
A	∅	-a	-e	-i	-i	-a	-on	-un	-ūn
Dl	-um	-um	-um	-im	-im	-ōm	-ōm	-ōm	-ōm
G	-o	-o	-eo	-eo	-eo	-ōno	-ōno	-ōno	-ōno

Once again the origins of the syncretisms are various.

In neuter paradigms (the first and eighth columns) syncretism of the Nsg. and A sg., and of the Npl. and Apl., was inherited from PIE. In masculine a- and ija-stems, and in masculine and feminine i-stems, syncretism of Nsg. and A sg. occurred by regular sound change (namely loss of the original endings). The remaining syncretisms in the n-stem paradigms, and those among the i-stems that were complete by the time of the earliest surviving documents, likewise occurred by regular sound change;<sup>70</sup> so did the exceptionless syncretism of Dpl. and Ipl. (as in OE: see footnote 55).

However, syncretism of the Npl. and Apl. in the masculine a- and ija-stems is not attributable to external factors. The situation in the ō-stems is more complex, but it too involves syncretisms that are not accidental: though Gsg. -a did merge with the A sg. and Apl.<sup>71</sup> endings by regular sound change, the syncretism of Nsg. and A sg., and of Npl. and Apl., cannot be externally motivated. In all these cases it is the accusative ending, not the nominative (as is usual in OE), that was generalized; however, in OHG feminine pronouns and strong adjectives the Npl. ending took over the function of the Apl. rather than vice versa. In addition, Dsg. and Isg. have undergone syncretism in the ō-stems, the old Isg. ending being generalized; and the same change is largely complete among the fem. i-stems, though in that paradigm the Dsg. ending was generalized. Table 7 compares the actually occurring endings with those that would be expected by regular sound change alone.

<sup>67</sup> Virtually all classes of strong adjectives have adopted the a/ō-stem endings in OE. The unmarked demonstrative shows NApl. *þā* in all genders, but the history of this form is not entirely clear. In part it is clearly the sound-change reflex of PGmc. masc. Npl. \*þai; it MIGHT also reflect unstressed masc. Apl. \*þanz and fem. Npl. \*þōz, with the expected ending \*-a lengthened when restressed, but that is very uncertain.

<sup>68</sup> Again I omit some minor lexical classes.

<sup>69</sup> The u-stems and C-stems have largely been transferred into other lexical classes in OHG.

<sup>70</sup> Note the survival of ablaut alternations in the final syllables of masculine and neuter n-stems.

<sup>71</sup> The NApl. ending of this stem class is usually given as long -ā, but the philological evidence strongly suggests that it was short in early OHG; see Stiles (1988:140-1 footnote 22) with bibliography for discus-

Table 7

Development of innovative syncretic endings in OHG.

	PGmc.		PWGmc.		exp. OHG	actual OHG
a-st. Npl. m	*-ōz → *-ōs	>	*-ōs	>	*-os	-a
a-st. Apl. m	*-anz	>	*-ā <sup>n</sup>	>	-a	-a
ija-st. Npl. m	*-ijōz → *-ijōs	>	*-ijōs	>	*-eos	-e
ija-st. Apl. m	*-ijanaz	>	*-ijā <sup>n</sup>	>	-e	-e
ō-st. Npl.	*-ōz	>	*-ō	>	-o	-a (adj. -o)
ō-st. Apl.	*-ōz	>	*-ā	>	-a	-a (adj. -o)
ō-st. Nsg.	*-ō	>	*-u	>	*-u - ∅	-a
ō-st. A sg.	*-ō <sup>n</sup>	>	*-ā	>	-a	-a
ō-st. Dsg.	*-ōi	>	*-ē ?	>	*-e	-u
ō-st. Isg.	*-ō	>	*-u	>	-u ~ ∅	-u

Two things are particularly striking about these developments. In the first place, the nominative and accusative are again the cases predominantly<sup>72</sup> involved, chiefly (though this time not exclusively) in the plural. Secondly, the general similarity of the OHG developments to those of OE make it clear that the same types of processes have occurred, but the thoroughgoing differences of detail make it equally clear that these developments happened independently in the two languages.

The development of other OHG nominal endings was similar to that of noun endings, except that in the demonstrative and strong adjective paradigms the fem. ō-stem Npl. ending was generalized (see Table 7) and the masc. a-stem Npl. ending reflecting PGmc. \*-ai was generalized to Apl. function, as in OE.<sup>73</sup>

## 5 Motivating nominative-accusative syncretism

In section 3 I maintained, largely on the basis of language-specific arguments, that at least some of the NApl. syncretisms observed in Ancient Greek cannot plausibly be explained as traditional analogical changes. Now that a wider range of data has been presented, we are in a better position to reconsider the relative explanatory value of alternative descriptions of morphological change.

Because traditional accounts of morphological change are framed exclusively in terms of the relations between surface forms, they seem incompatible with a modern understanding of morphology. However, any practicing historical linguist will be aware that some analogical changes can easily be reinterpreted as generalizations of morphological rules that fit unobjectionably into modern frameworks. Not that the surface-oriented and rule-oriented statements are notational variants of one another; on the contrary, they rest on radically different understandings of how grammars are structured. Nevertheless, a con-

syn.

<sup>72</sup> The syncretism of Dsg. and Isg. in ō-stems is noteworthy, but the conditions under which it occurred are significantly different, since the Dpl. and Ipl. had already fallen together by sound change in all paradigms, and the instrumental case was being replaced by the dative syntactically during the OHG period (Braune 1975:180-1; cf. footnote 55 on the OE situation). However, see also section 6 below.

<sup>73</sup> The Old Saxon pattern of syncretism is similar to that of OE in the m. a-stems (NApl. -os) and ija-stems (NApl. -eos), but like that of OHG in the ō-stem nouns (NAsg. -a, NApl. also -a). In the plural of OS adjectives it appears that the syncretism of the f. NApl. gave the same result as in nouns (as in OE), not a different result (as in OHG).

siderable range of well-attested morphological changes can be explained about equally well from either perspective, and I will begin by considering examples of NA syncretism amenable to such reinterpretation.

A traditional view of NA syncretism in the West Germanic languages can be converted into a more modern account along the following lines. As in all IE languages, the Nsg. and Asg. of neuter nouns had been identical for thousands of years, and that syncretism must have been expressed in a rule of the grammar (entirely within the morphological component, since syntax is not implicated; the discussion of the corresponding Latin rule in Aronoff 1994:82-4 is valid for all conservative IE languages). The erosion and loss of endings by regular sound change gradually created a number of masculine and feminine noun classes in which the Nsg. and Asg. were likewise identical. So long as there were only a few such classes, no significant restructuring of the grammar need have occurred. In those classes the morphological spellout rules for the Nsg. and Asg. endings might merely have happened to have the same output (in an "affixless" system like that of Aronoff 1994), or a very specific "rule of referral" (in the system of Zwicky 1985) might have accounted for the syncretism, or there might have been a Vocabulary item (in the "Distributed Morphology" of Halle and Marantz 1993) whose underspecified features allowed it to be inserted for both functions.<sup>74</sup> But when syncretism of Nsg. and Asg. had occurred in a large majority of lexical classes of all genders, an optimal grammar would express the generalization that Nsg. and Asg. were usually identical. In adult grammars rules of the type just described, but considerably more general in content, must have existed; learners of the languages, on the other hand, would probably have formulated a still more general hypothesis "Nsg. = Asg." (cf. Aronoff 1994:83) at some point in their acquisition of the system of inflections. From either perspective the fact that the (feminine) *ō*-stems and the non-neuter *n*-stems continued to show different forms for Nsg. and Asg. would appear as a complication of the grammar. The situation in the plural must have been similar, though sound-change merger of Npl. and Apl. occurred in fewer non-neuter classes of stems (notably the *i*-stems; possibly also the *n*-stems). Moreover, the fact that NA syncretism was in evidence both in the singular and in the plural might have led at least some language learners to a radically simplifying hypothesis "N = A". All these factors should have motivated language learners to syncretize those nominative and accusative forms that had not already undergone syncretism by sound change, and the appearance in OE and OHG of NA syncretisms without "external" motivation is therefore not particularly surprising. Of course we still need to explain how these purely morphological syncretisms survived to become part of the natural linguistic variation in the speech community (and eventually to be adopted by all speakers), in spite of the fact that they were errors when they first occurred; but there are at least two plausible approaches to that problem. When an entire community is learning a prestige dialect, learners will typically be using the new dialect with each other far more than with its native speakers; in such circumstances plausible errors are quite likely to survive and propagate (Kiparsky 1978:86-7). Furthermore, even children learning a first language in an environment saturated with native speakers might retain at least a few innovations into adulthood, provided those innovations fit into the structure of the grammar felicitously (Andersen 1974:24, Hooper 1980:179-80). Such events should provide ample opportunities for paradigmatic syncretism.

The above hypothesis, however, will not work for Greek because of what it must presuppose. The developments posited in the preceding paragraph begin from the surface merger of categories by sound change or other accidental factors; those accidental syncre-

<sup>74</sup> This third alternative is not so simple, since the system of syntactic features must have been such as to allow for the particular underspecification required; see further below.

tisms are the basis for the morphological reanalyses that give rise to syncretisms NOT motivated by factors external to the paradigm. In other words, accidental syncretisms provide the "pivot" on which the reanalysis turns.<sup>75</sup> But in Greek no plausible sound-change pivot for the reanalysis can be found. I have argued above that the neuter is unlikely as a source for reanalysis, especially because the initial scope of the reanalysis was so narrow (see the discussion in section 3): to extend a pattern "N = A", for example, from the neuter (in all numbers) and the dual to a few small classes of non-neuter nominals in the plural (but not the singular) is a complication of the grammar that would surely be hard to learn if there were no other motivation for it. Further, while the introduction of a new NApl. in *-e:s* in one small lexical class (by whatever means) might be generalized to a few similar classes, it seems most unlikely that it could have led to the later reanalysis in a much larger class by which Apl. *-as* was replaced by the Npl. ending *-es*. The formal pivots that the language offers are simply much too weak to support for Greek the type of hypothesis that works so well in West Germanic. Moreover—and perhaps more importantly—it is clear that by continuing to work from relations between surface forms this ostensibly modern analysis actually condemns itself to explain a range of data no wider than traditional analogical changes can handle.

We might consider broadening our search for pivots to include syntax, in the expectation that a syntactically ambiguous use of some class of forms could lead to reanalysis in that class, which would then provide the pivot for further, purely morphological reanalysis. This seems especially promising in the case of the Greek participles. Wackernagel has already suggested that in Greek the use of the Npl. in *-es* for the Apl. in *-as* began from examples of Npl. participles coreferential with noun phrases in the Apl. but not agreeing with them in surface case (Wackernagel 1903:368-9; see section 3 above). But this hypothesis is beset with problems. Though the syntactic status of participles in anacoluthon has not been studied (so far as I know), it seems tolerably clear that they are the heads of clauses in "absolute" construction—that is, in a structural position not Case-governed by the matrix verb—and must therefore be assigned Case in some maximal projection higher than the matrix V.<sup>76</sup> Reinterpreting such participles as accusatives should therefore involve a chronic failure on the part of learners to perceive that they are absolutes. This seems implausible, especially in Ancient Greek, which boasted a wealth of absolute constructions (cf. Smyth 1956:447, 459-62); and the plausibility of the scenario is not increased by the fact that the supposed reanalysis eventually had important morphological consequences for the inflection of plurals, but never of singulars!<sup>77</sup> Moreover, even if such a development could have occurred, we would still have to show that the participles were the pivot for the spread of the purely morphological reanalysis. This is scarcely possible, since the reanalyses that gave rise to the Attic NApl. forms in *-e:s* and *-o:s* occurred generations before Apl. participles in *-es* began to appear in that dialect. Finally, we find no POSITIVE indication that participles were the pivot for morphological reanalysis in ANY other lexical class. While the use of participles in anacoluthon might have contributed to the syncretism of Npl. and

<sup>75</sup> This concept is familiar from traditional accounts of analogical change, though it has seldom been accorded much discussion in its own right.

<sup>76</sup> I am grateful to Anthony Kroch for much helpful discussion of these constructions.

<sup>77</sup> Some caution is necessary here, since reanalysis by language learners merely introduces new forms into the linguistic variation within the community, and the new forms must THEN oust their older rivals if they are to become linguistic norms. We could suggest that learners made the posited reanalysis both in the singular and in the plural, but that only the new plural forms eventually "won out". Possibly the innovative plural forms were so successful because the markedness of the plural favored purely morphological syncretism (see below). But even if we accept all those arguments, it is very disturbing that no trace of innovative singular forms survives, and that fact alone should lead us to doubt this hypothesis.

Apl., or to the generalization of the Npl. ending once syncretism was under way, I do not see how it could have provided the initial impetus for the syncretism. Possibly the participles are not the right category in which to seek a syntactic pivot; but I have not been able to construct even so plausible a scenario starting from any other class of forms, and I doubt that syntactic ambiguities are commonplace enough to explain any substantial number of syncretisms.

Only a more abstract solution can circumvent these difficulties, and in fact the outlines of a plausible abstract analysis have long been available (see below). The organization of morphological cases appears to be hierarchical in such a way that nominative and accusative are grouped together under a superordinate category of some sort. The grammar can be simplified by eliminating the distinction between nominative and accusative, leaving only the superordinate category. This hypothesis accounts easily for the developments in Greek. It also offers a reasonable explanation for the fact that in that language the syncretism was confined to the plural: if the motivation for the change was simplification of the grammar in general (rather than, for example, bringing specific inflectional classes under the scope of the same morphological rules), and if we add the plausible assumption that the opposition of singular and plural was privative in Greek, so that the plural was marked by an additional feature, a greater tendency to simplify the inflection of the (marked) plural might be expected.<sup>78</sup> For the West Germanic languages, of course, this hypothesis is not strictly necessary, but there are still at least two good reasons for entertaining it. In the first place, if we find ourselves obliged to adopt it for some of the more archaic IE languages, it is reasonable to suppose that it is natural for all of them, since they all have similar case-marking systems; and it follows that this hypothesis should NOT be considered less plausible for West Germanic than explanations requiring surface pivots simply because it invokes only underlying categories. Secondly, the frequency of NApl. syncretism is no less striking in West Germanic than in other IE languages,<sup>79</sup> and we ought to ask whether that frequency is peculiar enough statistically to require such an explanation as the one I have proposed (though we won't be able to answer that question unless and until we have a wide enough range of cases to run statistical tests). Of course the two hypotheses are not mutually exclusive; developments of both types could have contributed to the massive syncretism that we find in West Germanic languages.

At least the existence of such a superordinate category has been assumed by almost every group of interested linguists. Indo-Europeanists are used to thinking of these two cases (together with the vocative) as "direct" cases, since they appear to have constituted a morphological class in PIE and most of its daughters (cf. Coleman 1993). Modern morphologists have adopted the same analysis without comment (cf. e.g. Williams 1981:267-9, Zwicky 1985:375). Syntacticians should also find this analysis natural, because in the languages in question nominative and accusative are the usual morphological exponents of those syntactic Cases of subject and object that are assigned by structural configuration alone (cf. e.g. Bierwisch 1967:246-8, Chomsky 1981:48-51, Freidin and Babby 1984; see further section 6 below).<sup>80</sup>

However, I am not aware that any reliable empirical support for a superordinate cat-

egory of direct case has ever been adduced. The mere existence of NA syncretisms, even if well represented crosslinguistically, is NOT evidence, as I have argued at length in sections 1 and 2. I claim that the occurrence of NA syncretisms without paradigm-external motivation and WITHOUT SURFACE PIVOTS constitutes clear evidence for the existence of a superordinate category of direct case.

Confidence that this is the correct hypothesis would be increased if independent evidence for it could be adduced. It would be especially helpful if we could find parallel changes in progress in contemporary languages of apparently similar structure. However, I have not been able to find any published discussion of such changes; I know of no sociolinguistic studies of the spread of any case syncretism through a speech community, nor of any language acquisition studies that describe case syncretism in the course of learning.

In fact, the pattern of evidence might suggest that syncretism does not normally occur in first language learning. Specialists in language acquisition routinely discuss the learning of case systems, but none of the published accounts describes a development that resembles those under discussion here.<sup>81</sup> For example, it is interesting that the distinction between nominative and accusative is acquired moderately late in Modern High German, and that the nominative is used until the contrast is mastered (Mills 1985:155); but since that contrast is overtly marked in adult German only on determiners in agreement with masculine singular nouns (and on personal pronouns), late acquisition might simply reflect the relative paucity of relevant data in the target language. The difficulty that children learning Japanese seem to experience with direct case particles is likewise intriguing; but since the particles can be omitted in adult Japanese, and since the system is notably more complex than the use of cases in a conservative IE language, the implications of these acquisition facts are far from clear (see Clancy 1985:387-93). Similar factors complicate the learning of the Finnish accusative case (Anne Vainikka, p.c.). The Turkish case system shows greater resemblance to those of conservative IE languages, but it seems to be acquired quickly and easily (Aksu-Koç and Slobin 1985:854-5).<sup>82</sup> Accounts of the acquisition of morphological case in other languages are similar. This is consistent with Kiparsky's suggestion that grammar simplification typically occurs in second-language (or -dialect) learning in the absence of a critical mass of native speakers—a process that has, unfortunately, been too little studied in detail (cf. Thomason and Kaufman 1988:145-6).

This absence of contemporary evidence is disappointing, because comparably detailed historical data are virtually never available. There is another area, however, in which we can seek corroboration for the hypothesis advanced above. Inflectional morphology exists largely in order to express syntactic functions, and it is reasonable to suppose that there is some definable relation between morphological case systems and syntactic Case structures (as suggested already by Bierwisch 1967). If the morphology possesses the underlying structure suggested here—a category of direct case superordinate to nominative and accusative—we should try to construct a coherent morphosyntactic account which links that morphological structure to the structure of syntax in an explanatory way; the two will then support one another, increasing the likelihood that the analysis is correct. In the following section I shall attempt to construct such an account using data from Old English and Ancient Greek, the two relevant languages for which syntactic information is readily avail-

<sup>78</sup> In other words, if plural forms were marked with an additional feature, they might be more "costly" and so more likely to be simplified; cf. Noyer 1992:225-6, 246-68, 281-90 for discussion and exemplification of this general idea.

<sup>79</sup> The frequent appearance of NA syncretism in IE languages is obvious even from the brief discussion of Coleman (1993).

<sup>80</sup> I shall capitalize "Case" when it refers to a syntactic category (the better to avoid confusion with morphological case), following Chomsky (1981:16 footnote 1).

<sup>81</sup> I am grateful to Anne Vainikka for helpful discussion of this point.

<sup>82</sup> On the other hand, the agglutinative morphology of the Turkish system (in contrast to the "fusional" character of IE inflectional paradigms) is likely to be one reason why it is learned so easily, as Brian Joseph reminds me; cf. Carstairs' observation (cited in section 1 above) that syncretism reduces the burden on the memory only in fusional languages.

able.<sup>83</sup>

## 6 Syncretism and morphosyntax

Since inflectional morphology must express syntactic features, let us start from the working hypothesis that morphological cases stand in a one-to-one relation with syntactic Cases—that is, that each syntactic Case is always mapped onto the same morphological case, which has no other function than to express the syntactic Case in question. Such a hypothesis seems to be very widely used in work on case-marking languages in the generative tradition. It is assumed already in Bierwisch (1967) and stated explicitly in Kementade (1987:66, 98-100); Vainikka (1993) shows that it works remarkably well for Finnish.<sup>84</sup> Since the primary function of the nominative and accusative cases is encoding the structural Cases of subject and object, we must begin from that morphosyntactic connection. The morphological theory I will use is the “Distributed Morphology” of Halle and Marantz (1993).

If it is true that NA syncretism eliminates the distinction between the direct cases, leaving only the category “direct”, Distributed Morphology offers two potential accounts of the process. NA syncretism might reflect featural underspecification of case-and-number endings (which are “Vocabulary” items in this theory), an underspecified ending being inserted at nodes marked for subject or object Case; alternatively, some of the relevant syntactic nodes might undergo feature Impoverishment in the morphological component of the grammar, so that less narrowly specified endings could be inserted at those nodes (Noyer 1992:51). But in these languages the second alternative is highly undesirable for theory-internal reasons. In Ancient Greek, for instance, the Apl. endings of only a few lexical classes syncretize with the corresponding Npl. endings; one must know the arbitrary inflectional class of the lexical head in order to determine whether a syncretic ending must be inserted. Therefore, if syncretism occurs as a result of Impoverishment, at least some Vocabulary insertion—namely, insertion of the lexical head—must precede Impoverishment, while other instances of Vocabulary insertion—namely, insertion of the endings—must follow it. This clearly makes the theory more unconstrained. I shall therefore assume that NA syncretism reflects featural underspecification of case-and-number endings.

As a first approximation, let us suppose that accusative case endings bear a syntactic feature [+acc] which nominative endings lack; this is consistent with plausible proposals that nominative is the default morphological case (cf. e.g. Jakobson 1966[1936]:58-60, Andrews 1982:470-1). NA syncretism will then reflect loss of (or failure to learn) particular accusative endings; since the corresponding nominative endings are the (featurally) most specific Vocabulary items that are nondistinct from the features of terminal nodes at which the accusative endings would be inserted if they existed (Halle and Marantz 1993:119-22), the nominative endings will be inserted instead, and syncretism will have occurred.<sup>85</sup>

NA syncretisms in which the accusative ending is generalized, such as Heraklean Greek *tri:s* ‘three’ and nearly all the OHG examples discussed above, are a potential problem for this analysis, since one would expect the less fully specified nominative ending to

have “won out” instead (as in most of the Greek and OE examples). But the fact that we are dealing with historical changes offers a ready explanation for these anomalies. In every instance there must have been a period of variation in which innovative speakers were using only the nominative ending (at least some of the time) while more conservative speakers continued to use both endings. In such a situation language learners—especially second language learners—can have acquired the syncretized pattern but instantiated it with the “wrong” ending, generalizing the accusative ending rather than the nominative. One would expect the generalization of accusative endings under syncretism to be less common, and it apparently is, though much more work on the subject is needed.

A more serious problem has to do with syncretisms that we do NOT find. If the nominative is the unmarked case, with minimal feature specification, why do cases other than the accusative so seldom undergo non-accidental syncretism with the nominative? If syncretism results from featural underspecification of case endings, the answer to this question must lie in the morphosyntactic features of the nodes at which the endings are inserted, with which the features of the endings themselves must be consistent. Those features are generated by the syntax. Thus it appears that the Cases of subject and object share a feature not shared by other syntactic Cases. In most theories within the GB tradition this is difficult to formalize, because the Cases of subject and object are differently assigned; but Chomsky (1991:433-7, 1992:9-11) proposes an analysis in which their assignment is closely parallel. T (the Tense node) is raised and adjoined to AGR<sub>S</sub>, while V<sup>86</sup> is raised and adjoined to AGR<sub>O</sub>; an NP in the SPEC-AGR<sub>S</sub> position is assigned subject Case by T, while an NP in the SPEC-AGR<sub>O</sub> position is assigned object Case by V (and both NP’s share the relevant  $\phi$ -features of their respective AGR nodes). A simple addition to this proposal can be suggested: an AGR node of any kind assigns a feature [+direct] to the NP in its SPEC position, while AGR<sub>O</sub> also assigns a feature [+acc]; accusative case endings will ultimately be inserted at nodes bearing the features [+case, +direct, +acc], while the default nominative endings will be inserted into nodes bearing [+case, +direct], and the rest of the analysis is as above. The feature [+direct] effectively excludes any non-accidental syncretism of the nominative with an oblique case.

However, there are a number of problems with this solution, which I shall discuss in order of increasing severity. Least problematic is the use of the nominative as the complement of verbs like ‘be’ and ‘become’. That this is actually part of a larger pattern can be seen from the following Ancient Greek examples,<sup>87</sup> all with the aorist *genésthai* ‘become, prove to be’:

<sup>83</sup> In citing Ancient Greek examples I have not restricted myself to Classical Attic; however, all the constructions illustrated do occur in Classical Attic unless identified as “archaic”.

<sup>84</sup> I assume that at least subject, object, oblique, and adnominal (i.e. genitive) Cases must be recognized, as sketched in Chomsky (1981:49-50) and assumed in much subsequent work (e.g. Freidin and Babby 1984, Kementade 1987).

<sup>85</sup> Bear in mind that, in addition to the relevant syntactic features, these nodes also bear lexical class features which must agree with those of their lexical heads.

<sup>86</sup> In the remainder of this paragraph “V” is the abbreviation for “verb” (rather than “vocative”).

<sup>87</sup> Citations from Ancient Greek literature follow the standard indexing system for each author or work. Andrews 1971 adduces a broader range of Greek examples and argues that the full range of data cannot be accounted for in the transformational approach then current. A full discussion of his examples is beyond the scope of this paper.

(1) Xenophon, *Anabasis* 1.7.10:

*entáutha dē en tēi eksoplístai: i ari:rh̄mōs egéneto*  
 there PTCL in the-D muster-D number-N become-AOR-3sg.  
*tā:n mēn Hellē:nō:n aspís mī:rtia: kài*  
 the-Gpl. PTCL Greek-Gpl. shield-N ten-thousand-N and  
*tetrakosía:, ...*  
 four-hundred-N

'At that point the number under arms came to, of the Greeks, 1400 hoplites, ...' (literally: '... 1400 shield [sg.], ...')<sup>88</sup>

## (2) Herodotos 78.100.4:

*sū Pērsa:s, basilēu, mē poiēsē:is*  
 you-N Persian-Apl. king-V don't make-AOR-SUBJ-2sg.  
*katagelásto:s genésthai Hēllē:si.*  
 laughable-Apl. become-AOR-INF Greek-Dpl.

'Sire, don't you make the Persians become a laughingstock to the Greeks!'

(3) Xenophon, *Anabasis* 7.1.21:

*nū:n soi eksēstin, ð: Ksenoph̄s:n, andri*  
 now you-D be-possible-PRES-3sg. O Xenophon-V man-D  
*genésthai.*  
 become-AOR-INF

'Now, Xenophon, you have an opportunity to prove yourself a man!' (literally: '... it is possible for you to prove to be a man.')

(4) Xenophon, *Hellenica* 1.5.2:

*... autō: te Kú:ro: edéonto hō:s prot̄h̄u:mot̄to: prōs*  
 ... self-G and Cyrus-G beg-IPF-3pl. as most-eager-G towards  
*tōn pólemon genésthai.*  
 the-A war-A become-AOR-INF

'... and they begged Cyrus himself to show himself as zealous as possible in prosecuting the war.'

Note that each example shows the subject of *genésthai* in a different morphological case, and that in every instance the complement agrees in case with the subject:<sup>89</sup> in (3) and (4) an embedded subject PRO is assigned Case under control from an element of the matrix clause, while (2) appears to be an instance of exceptional Case-marking, in which the embedded subject is assigned Case under government by the matrix verb. It is clear that 'become' and similar verbs do not assign Case to their complements. These are instances of Case agreement rather than assignment; presumably SPEC-head agreement is involved (cf. Heycock 1991:163-6, Chomsky 1992:11-3), though the details remain to be worked out in

<sup>88</sup> Numbers of other contingents, both Greek and non-Greek, follow; hence the unusual position of the Gpl.

<sup>89</sup> This is not the only possible pattern for such constructions in Ancient Greek (cf. Smyth 1956:278, Andrews 1971), but it is the one that is crosslinguistically "normal", appearing also in Latin, for example (cf. e.g. Gildersleeve and Lodge 1895:337).

recent theories of syntax.

More worrisome is the use of the nominative outside of any coherent syntactic context, such as the listing or naming of objects, or the nominative of direct address in languages with no vocative case.<sup>90</sup> Such nouns cannot have been assigned a feature [+direct] by any AGR node; under the above analysis it would have to be stipulated that the nominative is the default case extrasyntactically.

The really serious problem, though, is the fact that in archaic IE languages the accusative has a considerable number of functions other than encoding the structural Case of the direct object. For example, the following uses are typical in OE.

• Object of (some) prepositions:

(5) *Voyage of Ælfric* 13.30-14.1:<sup>91</sup>

*Hē cwæð þæt hē būde on þēm lande norþweardum wip þā Westsæ.*  
 'He said that he dwelt in the land to the north beside the Western Sea.'

(6) *Voyage of Ælfric* 15.35-6:

*... and þær sint swīðe micle meras fersce geond þā mōras.*  
 '... and there there are very large freshwater lakes throughout the mountains.'

• Extent of time or space:

(7) *Voyage of Ælfric* 14.21-2:

*... ac him wæs eallne weg wēste land on þæt stēorbord.*  
 '... but the whole way there was barren land to his starboard.'

(8) *West Saxon Gospel of Matthew* 20:6:

*Hwī stande gē hēr eallne dæg idele?*  
 'Why are you (pl.) standing here idle all day?''

• Degree:

(9) *Ælfric, Catholic homilies* II.122.11:

*þā ne mihte se pāpa þæt geðafian, þeah ðe hē eall wolde;*  
 'Then the Pope was unable to permit that, though he was entirely willing.'

Similar uses are typical of Ancient Greek, as the following examples demonstrate.

<sup>90</sup> The frequent syncretism of nominative and vocative (cf. footnote 23) is evidently related to this phenomenon.

<sup>91</sup> Citations from the *Voyage of Ælfric* are by page and line of Bately's (1980) edition of the Old English translation of Orosius; citations from other parts of the OE Orosius are by book and chapter. The character ʒ has been expanded as *and*.

## • Object of (some) prepositions:

(10) Plato, *Protagoras* 360b:

*Th'arrò:sin dè . . . di' állo n è: di' ágnōian kài amath'ia:n?*  
 'Do they have courage for some (reason) other than through  
 ignorance and lack of learning?'

(11) *Iliad* 1.12:

*ho gàr è:lrhè th'ad:s epi nē:as Akhaiō:n . . .*  
 'for he had come to the swift ships of the Akhaians . . .'

## • Extent of time or space:

(12) Xenophon, *On horsemanship* 8.1:

*... trékhe:n de:sei tòn híppon kài pra:nē: kài órthia kài plágia*  
 '... it will be necessary for the horse to run both uphill and downhill  
 (courses), and oblique (ones).'

## (13) Herodotos 6.119.2:

*... en starh'mā:i . . . apò mèn Só:sō:n déka kài diē:kosfo:s stadiō:s*  
*apék'honti,*  
 '... at a waystation . . . 210 stadia distant from Susa.'

(14) *Iliad* 2.292:

*hēna mē:na ménō:n*  
 'staying one month'

## • Degree:

## (15) Herodotos 1.32.5:

*Emōi dè sū kài ploutēe:n méga ph'áineai kài basilēus pollō:n ē:nai*  
*anh'rō:pon;*  
 'Now you seem to me to be very rich and to be king of many people;'

## • Goal of motion (archaic construction):

(16) *Iliad* 10.195:

*... Argēiō:n basilē:es, hōsoi keklē:ato hō:lē:n.*  
 '... all the kings of the Argives, who had been called to the council.'

It is easy to give an informal account of this pattern. None of the underlined nominals in the accusative are arguments of the verb; rather, these are PERIPHERAL uses of the accusative. Evidently a morphological case can perform peripheral functions in addition to its central function; in other words, distinct secondary syntactic functions can be "shoehorned" into the same morphological case with a primary function. Centrality of function can be defined syntactically: structural Cases are more central than inherent Cases; arguments are more central than adjuncts. But if this plausible account is to be of any use, we must find a way to formalize it.

One's initial impression is that morphological cases in these languages are "morphemes" (Aronoff 1994:24-9)—that is, purely morphological units that have neither a unitary syntactic function nor a unitary phonological form. But positing morphemes should be a hypothesis of last resort, since it implies a major discontinuity between syntactic categories and the inflectional morphemes which must encode them; it is worth trying to make sense of the connection between morphology and syntax for as long as we still can. How, then, could "shoehorning" be described in Distributed Morphology?

Our problem is that accusative endings are inserted not only at nodes bearing the features [+case, +direct, +acc] (see above), but apparently also at nodes bearing simply [+case, +acc]; in the latter instance the features will reflect inherent Case, assigned under government by specific lexemes or for semantic reasons, and [+direct] will not be present because the features have not been assigned structurally in the immediate context of an AGR node. But the accusative endings themselves must bear the features [+case, +direct, +acc] for the reasons advanced above; consequently they will be featurally inconsistent with nodes bearing [+case, +acc]—the endings are overspecified, so to speak—and cannot be inserted at those nodes. We can adjust the hypothesis as it stands only by positing a rule that ADDS a feature [+direct] in the context of [+acc], thereby proposing featural "Enrichment", the reverse of Impoverishment, as a theoretical possibility. But in that case the relation between syntactic and morphological features will be more or less completely unconstrained—an extremely undesirable result. We must conclude instead that the analysis so far is somehow fundamentally flawed.

We might attempt to solve these problems by proposing that the direct cases are characterized by the ABSENCE, rather than the presence, of a syntactic feature. Under this proposal, Case assigners adjoined to AGR nodes do not assign an extra feature, but all other Case assigners do. The Ancient Greek system of Case and case, for example, can then be described as follows. The features of the morphological case endings are the following:

nominative [+case]	genitive [+case, +obl, +gen]
vocative [+case, <sup>92</sup> +voc]	dative [+case, +obl, +dat]
accusative [+case, +acc]	

Accusative case endings can be inserted at nodes bearing [+case, +acc] (assigned by the verb when adjoined to AGR<sub>O</sub>) and at nodes bearing [+case, +obl, +acc] (assigned under government by specific lexemes or semantically), for which they are appropriately underspecified. If a vocative or accusative ending is unavailable, the underspecified nominative ending is employed, and syncretism occurs. But what prevents the nominative appearing in place of an unavailable genitive or dative?

In at least some archaic IE languages there is an oblique case X which is marked for case and obliqueness only; unavailability of any other oblique case ending therefore leads to the use of the underspecified oblique case X rather than the nominative. The West Germanic system seems to have been of this sort; the features of the case endings were plausibly as follows:

nominative [+case]	genitive [+case, +obl, +gen]
accusative [+case, +acc]	instrumental [+case, +obl, +inst]
dative [+case, +obl]	

<sup>92</sup> This is an assumption; it is not at all clear how Case is assigned to nominals in direct address.



Unavailability of instrumental endings apparently led to the use of the corresponding dative endings, and that can have been a factor in the eventual loss of the instrumental altogether (cf. footnotes 55 and 72).

Similar syncretisms of oblique cases do not seem to have occurred in Ancient Greek within the historical period;<sup>93</sup> but there is at least one piece of syntactic evidence suggesting that the dative was in fact marked only with the features [+case, +obl], as suggested for West Germanic. Prepositions in Ancient Greek assign Case to their objects, but at least some of those assignments must be lexical rather than structural, since which morphological case surfaces depends on the identity of the preposition and its meaning. In Classical Attic, for example, we find *parà basiléō:s* [gen.] 'from the Shah', but *par' emói* [dat.] 'at my house' and *parà tē:n pólin* [acc.] 'past the city'; *metà tóuto:n* [gen.] 'among these', but *metà táuta* [acc.] 'after these (things)'; and so on. In most dialects there are two prepositions, *apó* 'from' and *ek* ~ *eks* 'out of', which assign only a Case encoded by the genitive—not surprisingly, since it is a usual function of the genitive to express motion away from something; in Attic, for example, one finds *apò tó: hierò:* [gen.] 'from the sanctuary' and *ek tó: érgo:* [gen.] 'out of the construction site'. However, in the Arkadian, Cypriote, and Pamphylian dialects these prepositions appear with the dative instead; for example, the Arkadian equivalents of the two Attic phrases just quoted are *apu toi ieroi* [dat.] (Schwyzer 1923, 661.22; Mantinea, 5th c. B.C.) and *es toi ergoi* [dat.] (Schwyzer 1923, 656.49; Tegea, 4th c. B.C.). In terms of the usual Greek patterns of case-marking this makes no sense—unless it amounts to a simplification, reflecting an assignment of [+case, +obl] (= dative) in place of the more highly specified [+case, +obl, +gen]. I therefore propose that the dative case is the default oblique case in Ancient Greek as well.

A question which remains unresolved is the status of the genitive case. It is unclear exactly how the adnominal Case is assigned, and therefore unclear why the genitive should be [+obl] in all instances; but since an attempt to answer that question would take us too far afield, I can only assume, on the basis of its morphosyntactic behavior, that the genitive is [+obl] in archaic IE languages. That its behavior in some non-IE languages is very different emerges clearly from Vainikka (1993).

A final question concerns the status of the accusative as the exponent of structural objective Case. In OE this is not problematic: structurally assigned direct object status is apparently marked only by the accusative case, since only objects so marked can become the subjects of passives in OE,<sup>94</sup> as the following examples demonstrate. A typical active-passive pair is the following:

(17) Orosius 6.7 (see footnote 89):

*Hī betýndan lānes dura* [acc.].

'They closed the doors of (the temple of) Janus.'

(18) Orosius 3.5:

*Ac þā þā Octāuianus se cāsere tō rice fēng, þā wurdon lānas dura* [nom.]  
*betýneda,*

'But when the emperor Octavian began his reign, then were the doors  
of Janus closed.'

<sup>93</sup> It is clear that syncretism of the instrumentals with the dative occurred in the "Dark Ages" between the Mycenaean period and the 8th c. B.C., but full discussion of the complex evidence for that development is beyond the scope of this paper.

<sup>94</sup> I assume that advancement to subject in passives is a reasonable diagnostic for structural Case of the direct object.

Contrast verbs with non-accusative objects and their impersonal passives:

(19) Orosius 1.5:

*And him* [dat.] *ðā Ioseph, rihtwis man, mid godcunde fulume gehealp.*  
'And Joseph, a righteous man, helped them then with divine assistance.'

(20) *Cura pastoralis* 225.22-3:<sup>95</sup>

*Ac ðæm* [dat.] *mæg bēon swiðe hraðe geholpen from his lārēowe,*  
'But he can be helped by his teacher very quickly.'

(21) Orosius 3.9:

... *ah him* [dat.]  *nolde Alexander þæs* [gen.]  *getyghian.*  
'... but Alexander was unwilling to grant him that.'

(22) Ælfric, *Catholic homilies* I.330.29-30:

... *ac him* [dat.] *næs gefiðod ðære lýtan lisse* [gen.].  
'... but he was not granted that little favor.'

There is no reason to believe that any of the nominals in (20) and (22) are subjects (any more than the fronted dative nominals in (19) and (21), which clearly cannot be subjects because those sentences contain nominative subjects); so far as can be determined, the subjects of (20) and (22) are empty. Note that the nominals of these clauses cannot appear in the nominative case; thus the following are ungrammatical:

(23) \**Sē* [nom.] *mæg bēon geholpen.*

(24) \**Hē* [nom.] *næs gefiðod ðære lýtan lisse.*

(25) \**Him næs gefiðod sēo lýtle liss* [nom.].

This is exactly what we should expect if the nominative and accusative express the structural subject and object Cases morphologically, while the genitive, dative, and instrumental express other syntactic Cases.<sup>96</sup>

<sup>95</sup> Citations from the OE translation of Gregory the Great's *Cura pastoralis* are by page and line of Sweet's (1871) edition.

<sup>96</sup> The only exception to the rule that all and only accusative objects can become the nominative subjects of passives occurs among verbs that can take two accusative objects, like *hatan* 'command' and *lærnan* 'teach'. Such verbs usually appear with a personal object in the accusative and a clausal object, e.g.:

*Het þā hyssa huwene* [acc.] *hors forlætan.*

'(He) then ordered each of the warriors to let (his) horse go.' (*Battle of Maldon* 2)

But occasionally one finds as the theme object an appropriate lexeme in the accusative case:

... *ðære* [acc.] *hē lærde geþild* [acc.].

'... (but) the other he taught patience.' (*Cura pastoralis* 291.21)

But though both objects are in the accusative, the recipient object of these verbs can become the subject of a passive while the theme object cannot, or at least does not normally do so (Mitchell 1985, 1:349-50); thus we find such examples as

... *and hē cwæð ðæt* [acc.] *hē* [nom.] *hatan wæs.*

'... and he said what he was ordered (to say).'

(Bede 388.29-30, Miller's 1891 edition)  
but never such an example as

In Greek, however, we do NOT find a close correlation between passivization and accusative case marking. It is true that a majority of two-argument verbs take accusative objects, many of which can become the subjects of passives; but the dative and genitive objects of a considerable number of verbs also appear as the nominative subjects of the corresponding passives. Compare the following three pairs of sentences:

- (26) *Odyssey* 5.313-4:  
*Hō:s ára min eipóni' élasen méga kl̥:ma kat' ákr̥:s,*  
*deinòn epesth̥menon, peri dè sk̥h̥edl̥ē:n [acc.] elélikse,*  
 'Just as he said that, there dashed over him from top to bottom  
 a great wave, rushing frightfully, and it spun the raft around.'
- (27) *Odyssey* 12.416:  
*h̥ē: [nom.] d' elēt̥k̥h̥ē: pá:sa Diòs pl̥:g̥ē:sa keraun̥:i,*  
 'and it (the ship) was spun completely around, struck with the  
 thunderbolt of Zeus.'
- (28) Herodotos 1.195.1:  
 ... *est̥h̥ē:ti dè toi̥ē:ide [dat.] kh̥réontai,*  
 'and they use the following kind of clothing.'
- (29) Herodotos 7.144.2:  
*Hai [nom.] dè es tò mèn epoiē:th̥ē:san ouk ek̥hr̥ē:s̥h̥ē:san,*  
 'now they (the ships) weren't used for what they had been built for.'
- (30) Plato, *Apology* 36a1:  
 ... *hóti mō: [gen.] katēp̥ē:p̥h̥ts̥h̥ē,*  
 '... that you (pl.) have voted to condemn me.'
- (31) Xenophon, *Hellenica* 5.2.36:  
*Kai ek̥ē:nos [nom.] mèn katēp̥ē:p̥h̥ts̥h̥ē: ...*  
 'And that (man) was condemned by vote ...'

Passives of the types exemplified in (29) and (31) are not rare. Even more striking are the alternative passives to verbs with both a dative and an accusative object:

- (32) Herodotos 4.202.2:  
*tóutoisi [dat.] dè tē:n pólin [acc.] ep̥ētrep̥se h̥ē: P̥heret̥:mē:*  
 'and to these (men) Pheretime entrusted the city.'

?\**Cweð mē ðætte wæs hāten hine.*  
 'Tell me what was commanded him.'

The significance of this pattern is not clear. The syntax of Latin *docere* 'teach' and similar verbs shows the same peculiarity; but there are also languages, such as Middle High German, in which either accusative object can become the subject of a passive (Hans Hock, p.c.).

- (33) Herodotos 7.10.γ.1:  
 ... *(h̥isi [dat.] ep̥ētr̥ap̥to h̥ē: p̥h̥l̥ak̥ē: [nom.] iθ̥:n gep̥h̥ū:ré:ō:n iθ̥:*  
*ístro: .*  
 '... to whom the guard on the bridges over the Istros had been  
 entrusted.'
- (34) Thucydides 1.126.11:  
*hoi [nom.] iθ̥:n Ar̥h̥ēnato:n ep̥it̥ēram̥ēnoi [nom.] t̥ē:n p̥h̥l̥ak̥ē:n [acc.]!*  
 'those of the Athenians who had been entrusted with the guard'

Since the dative and genitive objects of these and similar verbs correspond to nominative subjects of the corresponding passives, we must consider the possibility that these objects bear structural objective Case in spite of their oblique morphological case marking; and if that is true, no clear correlation between structural Case and direct case will be demonstrable in Ancient Greek—the language that provides us with our most unambiguous examples of non-accidental NA syncretism!

Note that this difficulty cannot be avoided by positing a particular relative chronology of historical changes. If we suggest that the passivizability of non-accusative objects in Ancient Greek is a recent development (from the viewpoint of the Classical language), we might contend that the NA syncretism of Classical Attic and the other contemporary dialects could have occurred at a somewhat earlier period, when structural object Case was always expressed by the accusative (a system almost certainly inherited from PIE); and in fact the attestation of passives before the 5th c. B.C. is so poor that that is one reasonable interpretation of the data (Debrunner 1950:240-1).<sup>97</sup> But that will not explain the further NA syncretism that occurred in the Hellenistic period, in which Npl. *-es* replaced Apl. *-as*; that change clearly took place under the syntactic conditions described immediately above.<sup>98</sup>

It is important to ask whether the dative and genitive cases of the objects under discussion could possibly be purely morphological phenomena (as suggested for certain Russian examples by Halle and Marantz 1993:171-2 footnote 9); that would be highly undesirable, since it would show a major discontinuity between the syntax and the morphology, but such a conclusion might be forced by the data. Fortunately the pattern of data shows that such an analysis is very implausible for Ancient Greek. A large majority of verbs whose objects appear in the genitive or dative case belong to well-defined semantic classes (cf. Smyth 1956:320-6, 338-44); it is difficult to see how that fact could be accounted for unless we posit some correlation between argument structure and the marking of objects with the genitive or dative case. It follows that the use of these cases to mark passivizable objects cannot be a purely morphological phenomenon. On the other hand, it is clear that the marking of objects with the genitive or dative case is lexical, since (a) the accusative case is clearly the default morphological case for direct objects, and (b) we find a few sets of (more or less) synonymous verbs of which some members take accusative objects while

<sup>97</sup> There are a few early examples in which dative and genitive objects are not advanced to subject in the passive, which is therefore impersonal (Debrunner 1950:239; note that that construction remains normal in the perfect and pluperfect tenses, *ibid.* p. 241); but that does not necessarily exclude the peculiar personal passive type under consideration here, since the grammars generating the different types of passives can have been in competition for a considerable period of time.

<sup>98</sup> I have argued in section 3 above that this later syncretism cannot be the result of morphological rule generalization or dialect contact.

others take dative or genitive objects. For example, *sūmphére:n* 'benefit, be to the advantage of' takes a dative object, while the synonymous *onínáinai* and *o:p<sup>h</sup>elē:n* take accusative objects; *erā:n* 'love, be (passionately) in love with' takes a genitive object, while the semantically similar *p<sup>h</sup>ilē:n* 'love, feel affection for; kiss' and *po<sup>h</sup>ē:n* 'desire, long for' take accusative objects.

It therefore seems clear that the peculiar pattern of passives in Ancient Greek is a phenomenon of lexical syntax: objects of verbs which appear on the surface in the genitive or dative case must have been assigned Case lexically, yet under passivization some behave as though they were (also?) assigned structural Case.<sup>99</sup> This need have no effect on NA syncretism, which is a phenomenon of autonomous morphology—especially as the accusative case unarguably remains the default expression of the structural Case of direct objects. However, it will be necessary to construct a theoretical proposal accounting for the Ancient Greek syntactic patterns in which the correct Case features are in every instance passed to the morphological component of the grammar (Halle and Marantz 1993:114 and passim). I leave this task for future research.

## 7 Conclusion

This paper proposes the beginnings of a morphosyntactic account of case syncretism, but most of the necessary work remains to be done. In addition to the unresolved questions raised in the text and footnotes above, we must consider a larger question. As Robin Clark (p.c.) emphasizes, evidence for the above conclusions is thus far restricted to IE languages; I have not been able to find examples of similar phenomena from languages of other families. It therefore seems possible that the analysis advanced here is valid only for languages that have set the universally available parameters in particular ways. Determining whether that is true is perhaps the most interesting question for further research.

## References

- Aksu-Koç, Ayhan A., and Dan Isaac Slobin. 1985. "The acquisition of Turkish." Slobin (ed.) 1985:839-78.
- Allen, W. Sidney. 1974. *Vox graeca*. 2nd ed. Cambridge: Cambridge University Press.
- Andersen, Henning. 1974. "Towards a typology of change: bifurcating changes and binary relations." Anderson, J. M., and C. Jones (edd.), *Historical linguistics II* (Amsterdam: North-Holland), pp. 17-60.
- Andrews, Avery D. 1971. "Case agreement of predicate modifiers in Ancient Greek." *Linguistic Inquiry* 2.127-51.
- . 1982. "The representation of case in Modern Icelandic." Bresnan, Joan (ed.), *The mental representation of grammatical relations* (Cambridge, Mass.: MIT Press), pp. 427-503.
- Aronoff, Mark. 1994. *Morphology by itself*. Cambridge (Mass.): MIT Press.
- Badecker, William, and Alfonso Caramazza. 1989. "A lexical distinction between inflection and derivation." *Linguistic Inquiry* 20.108-16.
- Bately, Janet (ed.). 1980. *The Old English Orosius*. Oxford: Oxford University Press.
- Battistella, Edwin L. 1990. *Markedness*. Albany: SUNY Press.
- Bierwisch, Manfred. 1967. "Syntactic features in morphology: general problems of so-called pronominal inflection in German." *To honor Roman Jakobson* (The Hague: Mouton), Vol. I, pp. 239-70.
- Bourguet, Émile. 1925. "Inscriptions de Delphes." *Bulletin de Correspondance Hellénique* 49.21-60.
- Braune, Wilhelm. 1975. *Althochdeutsche Grammatik*. 13th ed., revised by Hans Eggers. Tübingen: Niemeyer.
- Brugmann, Karl. 1911. *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*. II. Band, II. Teil. 2nd ed. Strassburg: Trübner.
- Brunner, Karl. 1965. *Altenglische Grammatik*. 3rd ed. Tübingen: Niemeyer.
- Bybee, Joan L. 1985. *Morphology*. Amsterdam: Benjamins.
- Carstairs, Andrew. 1984a. *Constraints on allomorphy in inflexion*. Bloomington: Indiana University Linguistics Club.
- . 1984b. "Outlines of a constraint on syncretism." *Folia Linguistica* 18.73-85.
- . 1984c. "Paradigm economy in the Latin third declension." *Transactions of the Philological Society* 1984:117-37.
- . 1987. *Allomorphy in inflexion*. London: Croom Helm.
- Carstairs, Andrew, and Joseph Paul Stemberger. 1988. "A processing constraint on inflectional homonymy." *Linguistics* 296.601-17.
- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- . 1991. "Some notes on economy of derivation and representation." Freidin, Robert (ed.), *Principles and parameters in comparative grammar* (Cambridge, Mass.: MIT Press), pp. 417-54.
- . 1992. *A minimalist program for linguistic theory*. = *MIT Occasional Papers in Linguistics* 1. Cambridge (Mass.): MITWPL.
- Clancy, Patricia M. 1985. "The acquisition of Japanese." Slobin (ed.) 1985:373-524.
- Coleman, Robert. 1993. "Patterns of syncretism in Indo-European." Aertsen, Henk, and Robert J. Jeffers (edd.), *Historical linguistics 1989: papers from the 9th International Conference on Historical Linguistics* (Amsterdam: Benjamins), pp. 111-7.
- Debrunner, Albert. 1950. *Griechische Grammatik. II. Band: Syntax und syntaktische Stilistik*. Munich: Beck.
- Devine, Andrew Mackay. 1970. *The Latin thematic genitive singular*. Stanford: Stanford University Committee on Linguistics.
- Dyen, Isidore, Joseph B. Kruskal, and Paul Black. 1992. *An Indo-European classification: a lexicostatistical experiment*. = *Transactions of the American Philosophical Society* 82, Part 5.
- Ernout, Alfred. 1926. *Morphologie historique du latin*. 2nd ed. Paris: Klincksieck.
- Freidin, Robert, and Leonard H. Babby. 1984. "On the interaction of lexical and syntactic properties: case structure in Russian." *Cornell Working Papers in Linguistics* 6. 71-103.
- Gates, H. Phelps. 1976. "On the chronology of the Attic Rückverwandlung." *Glotta* 54. 44-52.
- Gildersleeve, Basil L., and Gonzalez Lodge. 1895. *Latin grammar*. 3rd ed. London: Macmillan.
- Halle, Morris, and Alec Marantz. 1993. "Distributed morphology and the pieces of inflection." Hale, Kenneth, and Samuel Jay Keyser (edd.), *The view from building 20:*

<sup>99</sup> The suggestion that these objects might be doubly Case-marked is, in effect, a translation into standard GB terms of a proposal of Andrews (1982:471-3); the suggestion of Marantz (1984:77-83) is also similar. This solution was called to my attention independently by Anthony Kroch and Robin Clark; both have emphasized that such an analysis is merely a description of the facts, not a genuinely explanatory account. Among other things, it is very unclear how the standard analysis of nominative subjects of passives can be made to account for the Greek passives under discussion, since the objects of these verbs are assigned inherent Case lexically and should not have to move to satisfy the Case filter. I am grateful to Robin Clark and Maria Bitner for the reference to Andrews' work and to Anthony Kroch for the reference to Marantz' work.

- essays in linguistics in honor of Sylvain Bromberger (Cambridge, Mass.: MIT Press), pp. 111-76.
- Heycock, Caroline. 1991. *Layers of predication: the non-lexical syntax of clauses*. Ph.D. Dissertation, University of Pennsylvania.
- Hooper, Joan Bybee. 1980. "Child morphology and morphophonemic change." Fisiak, Jacek (ed.), *Historical morphology* (The Hague: Mouton), pp. 157-87.
- Jakobson, Roman. 1966[1936]. "Beitrag zur allgemeinen Kasuslehre." Hamp, Eric P., et al. (edd.), *Readings in linguistics II* (Chicago: University of Chicago Press), pp. 51-89. Reprinted from *Travaux du Cercle Linguistique de Prague* 6.240-88.
- Jasanoff, Jay. 1980. "The nominative singular of *n*-stems in Germanic." Klar, Kathryn, et al. (edd.), *American Indian and Indo-European studies: papers in honor of Madison S. Beeler* (The Hague: Mouton), pp. 375-82.
- Joseph, Brian, and Rex Wallace. 1984. "Latin morphology: another look." *Linguistic Inquiry* 15.319-28.
- Kemenade, Ans van. 1987. *Syntactic case and morphological case in the history of English*. Dordrecht: Foris.
- Kiparsky, Paul. 1978. "Analogical change as a problem for linguistic theory." *Studies in the Linguistic Sciences* 8.77-96.
- Kuiper, F. B. J. 1942. *Notes on Vedic noun-inflection*. = *Mededeelingen der Nederlandse Akademie van Wetenschappen, Afdeling Letterkunde*, N.R., Deel 5, No. 4.
- Kuryłowicz, Jerzy. 1949. "La nature des procès dits «analogiques»." *Acta Linguistica* 5. 15-37.
- Laroche, Emmanuel. 1972. "Observations sur la chronologie de l'ionien  $\bar{a}$  >  $\bar{e}$ ." Ernout, Alfred (ed.), *Mélanges de linguistique et de philologie grecques offerts à Pierre Chantraine* (Paris: Klincksieck), pp. 83-91.
- Lejeune, Michel. 1943. "Notes sur la déclinaison latine." *Revue des Études Latines* 21. 87-101.
- Leumann, Manu. 1977. *Lateinische Laut- und Formenlehre*. 2nd ed. Munich: Beck.
- Luraghi, Silvia. 1991. "Paradigm size, possible syncretism, and the use of adpositions with cases in fleective languages." Plank (ed.) 1991:57-74.
- Maiden, Martin. 1992. "Irregularity as a determinant of morphological change." *Journal of Linguistics* 28.285-312.
- Mallory, J. P. 1989. *In search of the Indo-Europeans*. London: Thames and Hudson.
- Marantz, Alec P. 1984. *On the nature of grammatical relations*. Cambridge (Mass.): MIT Press.
- Mayrhofer, Manfred. 1986. "Lautlehre: segmentale Phonologie des Indogermanischen." Cowgill, Warren, and Manfred Mayrhofer, *Indogermanische Grammatik*, Band I. (Heidelberg: Winter), pp. 73-216.
- Mayser, Edwin. 1906. *Grammatik der griechischen Papyri aus der Ptolemäerzeit*. Leipzig: Teubner.
- McCreight, Katherine, and Catherine V Chvany. 1991. "Geometric representation of paradigms in a modular theory of grammar." Plank (ed.) 1991:91-111.
- McIntyre, Linda Lee. 1986. *Animate plural in Neo-Hittite*. M.A. Thesis, University of North Carolina.
- Meillet, Antoine. 1905. "Hellenica." *Mémoires de la Société de Linguistique de Paris* 13. 26-55.
- . 1914. "Le datif singulier des thèmes en *-i-* en slave et en italique." *Mémoires de la Société de Linguistique de Paris* 18.378-9.
- Meiser, Gerhard. 1992. "Syncretism in Indo-European languages – motives, process, and results." *Transactions of the Philological Society* 90.187-218.

- Miller, Thomas (ed.). 1891. *The Old English version of Bede's Ecclesiastical history of the English people*. Part I, 2. Oxford: Oxford University Press.
- Mills, Anne E. 1985. "The acquisition of German." Slobin (ed.) 1985:141-254.
- Mitchell, Bruce. 1985. *Old English syntax*. Oxford: Clarendon Press.
- Noyer, R. Rolf. 1992. *Features, positions, and affixes in autonomous morphological structure*. Ph.D. Dissertation, MIT.
- O'Neil, Wayne. 1978. "The evolution of the Germanic inflectional systems: a study in the causes of language change." *Orbis* 27.248-86.
- Pinker, Steven. 1984. *Language learnability and language development*. Cambridge (Mass.): Harvard University Press.
- Plank, Frans. 1990. "Paradigm arrangement and inflectional homonymy: Old English case." Adamson, Sylvia, et al. (edd.), *Papers from the 5th International Conference on English Historical Linguistics* (Amsterdam: Benjamins), pp. 379-406.
- Plank, Frans (ed.). 1991. *Paradigms: the economy of inflection*. Berlin: de Gruyter.
- Schindler, Jochem. 1972. "L'apophonie des noms-racines indo-européens." *Bulletin de la Société de Linguistique de Paris* 67.31-8.
- . 1975a. "L'apophonie des thèmes indo-européens en *-r/n-*." *Bulletin de la Société de Linguistique de Paris* 70.1-10.
- . 1975b. "Zum Ablaut der neutralen *s*-Stämme des Indogermanischen." Rix, Helmut (ed.), *Flexion und Wortbildung: Akten der V. Fachtagung der Indogermanischen Gesellschaft* (Wiesbaden: Reichert), pp. 259-67.
- Schwyzler, Eduard. 1923. *Dialectorum Graecarum exempla epigraphica potiora*. Leipzig: Hirzel.
- . 1939. *Griechische Grammatik. I. Band: allgemeiner Teil, Lautlehre, Wortbildung, Flexion*. Munich: Beck.
- Sievers, Eduard. 1882. "Kleine Beitrage zur deutschen Grammatik. X. Der angelsächsische Instrumental." *Beiträge zur Geschichte der deutschen Sprache und Literatur* 8.324-33.
- Skeat, Walter W. (ed.). 1871-87. *The holy gospels in Anglo-Saxon, Northumbrian, and Old Mercian versions, synoptically arranged*. Cambridge: Cambridge University Press.
- Slobin, Dan Isaac (ed.). 1985. *The crosslinguistic study of language acquisition. Vol. 1: the data*. London: Erlbaum.
- Smyth, Herbert Weir. 1894. *The sounds and inflections of the Greek dialects: Ionic*. Oxford: Clarendon Press.
- . 1956. *Greek grammar*. 2nd ed., revised by Gordon M. Messing. Cambridge (Mass.): Harvard University Press.
- Sommer, Ferdinand. 1914. *Handbuch der lateinischen Laut- und Formenlehre*. 2nd and 3rd ed. Heidelberg: Winter.
- Stang, Christian. 1965. "Indo-européen \**gʷōm*, \**d(i)ēm*." Heinz, Adam, et al. (edd.), *Symbolae linguisticae in honorem Georgii Kuryłowicz* (Wrocław: Polska Akademia Nauk), pp. 292-6.
- . 1972. *Lexikalische Sonderübereinstimmungen zwischen dem Slavischen, Baltischen, und Germanischen*. Oslo: Universitetsforlaget.
- Stemberger, Joseph Paul, and Brian MacWhinney. 1988. "Are inflected forms stored in the lexicon?" Hammond, Michael, and Michael Noonan (edd.), *Theoretical morphology* (San Diego: Academic Press), pp. 101-16.
- Stiles, Patrick V. 1988. "Gothic nominative singular *brōþar* 'brother' and the reflexes of Indo-European long vowels in the final syllables of Germanic polysyllables." *Transactions of the Philological Society* 86.115-43.

- Sweet, Henry (ed.). 1871. *King Alfred's West-Saxon version of Gregory's Pastoral care*. London: Trübner.
- Szemerényi, Oswald. 1956. "Latin *rēs* and the Indo-European long-diphthong stem nouns." *Zeitschrift für vergleichende Sprachforschung* 73.167-202.
- . 1968a. "The Attic 'Rückverwandlung'." Mayrhofer, Manfred, et al. (edd.), *Studien zur Sprachwissenschaft und Kulturkunde: Gedenkschrift für Wilhelm Brandenstein* (Innsbruck: Innsbrucker Beiträge zur Kulturwissenschaft), pp. 139-57.
- . 1968b. "The Mycenaean and the historical Greek comparative and their Indo-European background." Bartoněk, Antonín (ed.), *Studia mycenaea* (Brno: Universita J. E. Purkyně), pp. 25-36.
- Thomason, Sarah Grey, and Terrence Kaufman. 1988. *Language contact, creolization, and genetic linguistics*. Berkeley: University of California Press.
- Thorpe, Benjamin (ed.). 1844. *The homilies of the Anglo-Saxon church. Part I: Sermones catholici, or homilies of Ælfric*. Vol I. London: Ælfric Society.
- . 1846. —. —. Vol II. London: Ælfric Society.
- Threatte, Leslie. 1980. *The grammar of Attic inscriptions. Vol. I: phonology*. Berlin: de Gruyter.
- Vainikka, Anne. 1993. "The three structural cases in Finnish." Holmberg, Anders, and Urpo Nikanne (edd.), *Case and other functional categories in Finnish syntax* (Berlin: Mouton de Gruyter), pp. 129-59.
- Wackernagel, Jacob. 1903. "Zur griechischen Nominalflexion." *Indogermanische Forschungen* 14.367-375.
- . 1916. *Sprachliche Untersuchungen zu Homer*. Göttingen: Vandenhoeck & Ruprecht.
- Weiss, Michael L. 1993. *Studies in Italic nominal morphology*. Ph.D. Dissertation, Cornell University.
- Williams, Edwin. 1981. "On the notion 'lexically related' and 'head of a word'." *Linguistic Inquiry* 12. 245-74.
- Wurzel, Wolfgang U. 1984. *Flexionsmorphologie und Natürlichkeit*. Berlin: Akademie-Verlag.
- Zwicky, Arnold. 1985. "How to describe inflection." *Proceedings of the Berkeley Linguistic Society* 11.372-86.