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THE EVOLUTION OF THE GREEK NOMINAL PARADIGMS FROM MYCENEAN TO MODERN GREEK

by Silvia Luraghi

Summary: The paper surveys the history and the development of Greek nominal paradigms, from Mycenaean Greek up to the present. In the long time span (about 3000 years) covered by written sources, two major changes contributed to reshape nominal paradigms, i.e. case syncretism, which had the effect of reducing the number of cases, and the elimination of so-called athematic declension, which resulted in the reduction of the number of inflectional classes and the redistribution of nouns between the remaining classes. It is argued that both developments can be better understood in terms of spread of stable and superstable markers, along with ongoing elimination of markers with low token frequency.

INTRODUCTION

Case syncretism had the result of reducing the number of cases and was one of the outcomes of two major moments of merging of different dialects: a) the post-Mycenaean period (end of the second millennium BC), and b) the unification of Greece (starting with the 14th century BC). The instrumental case was lost after (a), and the dative case was lost after (b). The reorganization of inflectional classes, on the other hand, is more of a continuous process, which can be observed throughout the attested history of Greek. This latter development has been a topic of debate since Seiler's (Seiler 1958) attempt to show that it was prompted by a tendency to change from a system in which assignment to inflectional class was based on phonological properties of the stem to a gender based one.

It must be noted that not everybody agrees on assuming a gender-based

classification for Modern Greek. Such a system is posited among others by Holton, Mackridge & Philippaki-Warbuton 1997 and argued for by Christofidou 2002, who convincingly argued that only gender distinguishing paradigms are productive. I will come back to Christofidou's arguments below, § 4.

For the purposes of this paper, I will especially concentrate on case syncretism, and argue that it affected cases with high semantic content, low frequency, and a relatively high number of allomorphs.

1. INFLECTIONAL CLASSES IN MYCENEAN GREEK

Mycenean Greek represents the most ancient attested Greek variety. Our understanding of nominal endings is somewhat complicated by the fact that Mycenean is written by means of a syllabary which only contains CV and V signs, but no VC. This makes it impossible to write final consonants and non-syllabic elements of closed diphthongs; furthermore, vowel length is not noted. As a consequence, some of the endings given below are partly reconstructed on historical evidence: for example, since the nominative singular of consonant stems was *-s* in Classical Greek, and is reconstructed as **-s* in Proto-Indo-European, it can safely be posited as *-s* in Mycenean as well.¹

Ancient Greek had three inflectional classes: *-o*-stems (thematic declension), *-ā*-stems, consonant and *-i/-u*-stems (athematic declension).² All classes, and in particular the athematic type, displayed high allomorphy, being sub-divided into subclasses. In table 1 I give the Mycenean case endings as they are written, and the phonemic form to which they correspond.³ I am leaving out of account the vocative case and the dual number.

1. On the Mycenean case system and on how Mycenean spelling should be interpreted in this respect, see Hajnal 1995.

2. See Schwyzer 1936 and 1950: 553-84.

3. I am not going to discuss the possible reconstruction of a locative distinct form the dative, see Hajnal 1995; and below, fn. 9. The accusative plural of consonant stems was *-as* in Classical Greek: this ending does not occur in Mycenean, possibly only by fault of attestation; the ending *-ei* is considered to be an extension of the ending of the nominative, see Hajnal 1995.

Table 1. Nominal Paradigms in Mycenean

	<i>-o</i> -stems		<i>-a</i> -stems		<i>-C/-i/-u</i> -st.	
	m./f.	n.	f.	m.	m./f.	n.
Nom.	<i>-o los/</i>	<i>-o lon/</i>	<i>-a la:/</i>	<i>-a la:s/</i>	<i>-Ø /Ø/, /s/</i>	<i>-Ø /Ø/</i>
Acc.	<i>-o lon/</i>		<i>-a la:n/</i>		<i>-a la/, -Ø /n/</i>	<i>-Ø /Ø/</i>
Gen.	<i>-ojo lojol</i>		<i>-a la:s/</i>	<i>-ao laol</i>	<i>-o los/</i>	
Dat.	<i>-o lo:il</i>		<i>-a la:i/</i>		<i>-i/-e lei/, li/</i>	
Instr.	<i>-o lo:/</i>		<i>-a la:/</i>		<i>-e le:/</i>	

	<i>-o</i> -stems		<i>-a</i> -stems		<i>-C/-i/-u</i> -st.	
	m./f.	n.			m./f.	n.
Nom.	<i>-o loil</i>	<i>a la/</i>	<i>-a lai/</i>		<i>-e les/</i>	<i>-a la/</i>
Acc.	<i>-o lons/</i>		<i>-a la:ns/</i>		<i>-e les/</i>	<i>-a la/</i>
Gen.	<i>-o lo:n/</i>		<i>-ao lao:n/</i>		<i>-o lo:n/</i>	
Dat.	<i>-oi lo:isil</i>		<i>-ai la:si/</i>		<i>-si /si/</i>	
Instr.	<i>-o lo:is/</i>		<i>-api laphil</i>		<i>-pi /phil</i>	

In the above table, the thematic vowels of the first two declensions (*-o*- and *-ā*-stems) are considered to be reanalyzed as forming part of case suffixes. In this analysis I follow Schwyzer 1936.

1.1. PARADIGMS AND MACROPARADIGMS

As noted in Wurzel 1989 different inflectional classes tend to be connected with extra-morphological properties. In Ancient Greek nouns belonged to one specific inflectional class due to their phonological properties (type of stem).

In order to better identify Greek paradigms we can start from Carstairs (Carstairs 1987: 69) definition of macroparadigm: 'A macroparadigm consists of ... any two or more similar paradigms all of whose inflectional differences either can be accounted for phonologically, or else correlate consistently with differences in semantic or lexically determined syntactic properties'.

Based on this definition, we can identify various paradigms and macroparadigms. As remarked above, assignment of a noun to one of the three inflectional classes depended on phonological properties. In the first place, within the athematic declension, consonant, *-i-* and *-u-*stems constituted a macroparadigm, with allomorphs determined by phonological properties, i.e. either by the final segment of the stem, or by its weight. This is not the place to give a full account of allomorphy within this macroparadigm, which can be found in any standard description with wealth of details;⁴ suffice it to say that certain final consonants are dropped before the endings of the nominative singular, and dative singular and plural, generating stem allomorphy to some extent, and that stem allomorphy is limited to this inflectional class (see below, § 3). It is also important to remark that a part of the *-i-* and *-u-*stems have the accusative singular ending *-n*, rather than *-a* as the remaining members of the inflectional class.⁵

Within *-ā-*stems, as we will see below, there is a distinction based on gender, that creates two paradigms: so the Greek *-ā-*stems are a macroparadigm too, but crucially the distribution of nouns between the two paradigms is based on a semantic property. It must be noted that the *-ā-*stems constitute the only inflectional class that only contains feminine and masculine nouns, and no neuters. The other two inflectional classes contain nouns of all three genders; feminine and masculine are inflected identically, and neuters differ, as typical of the Indo-European languages, in the nominative and accusative, as shown in the table. As remarked in Seiler 1958, neuters maintained this pattern unchanged down to Modern Greek.

The position of the *-ā-*stems among other nominal stems is interesting for two reasons. In the first place, within this macroparadigm we find a new semantic basis for assignment to an inflectional class, as noted above. In the second place, the existence of this inflectional class reflects an innovation, i.e. the increasing separation of *-ā-*stems from the athematic declension. This owes to the reanalysis of *-ā-*, already dating back to Proto-Indo-European, which was in origin a derivational suffix, as a thematic vowel.⁶

⁴ Details can be found in Schwyzer 1950 and Chantraine 1973.

⁵ Stems that end in the diphthong *-eu* take the ending *-a* in the accusative singular, similar to consonant stems.

⁶ *-ā-*stems derive from a Proto-Indo-European suffix *-h₂-*, representing a laryngeal, which had among its functions the derivation of feminine from masculine nouns; see for example Szemerényi 1980.

In Mycenaean, the endings of the dative plural and of the instrumental plural still point toward a close relation between *-ā-*stems and athematic declension. For the nominative singular of *-ā-*stems, the ending *-ās* found in Classical Greek does not go back to Proto-Indo-European, but is based on an extension of the sigmatic nominative of *-o-*stems, identified as typically masculine vs. typically feminine *-ā-*stems. Note that such a connection between inflectional class and gender was made possible on the basis of adjectival concord: adjectives of the so-called first class (thematic) followed the *-o-*declension for masculine and neuter, and the *-ā-*declension for feminine.⁷ The spelling found in actual Mycenaean texts does not suggest that there is any difference between feminine and masculine nominative of *-ā-*stems at this stage; however, note that the genitive singular of masculine *-ā-*stems already display a different ending from the feminine. Etymologically, feminine genitive in *-ās* is the reflex of the Proto-Indo-European form; the only reason to avoid the sigmatic genitive for masculine *-ā-*stems appears to be the need to differentiate it from the nominative: so it is likely that the nominative was *-ās* for masculine in Mycenaean already.⁸

When we compare the endings of the *-ā-*stems with the endings of the other two declensions, we can see a split, especially in the plural, where we find that the nominative and the accusative are closer to the endings of the *-o-*stems, while the dative and the instrumental are closer to those of the athematic declension (the genitive plural is a superslable marker, as defined below, § 2). In the singular, on the other hand, the genitive was the only ending that clearly related the *-ā-*stems to the athematic ones, but the creation of an opposition between the *-ās*-genitive for feminine and the *-ao-*genitive (later *-ou-*) for masculine blurred the possible link between the two macroparadigms, giving the *-ās* ending the function of distinguishing gender.

⁷ A small number of adjectives in the first class only has a two-fold distinction between non-neuter and neuter; all adjectives of this type follow the thematic declension (*-o-*stems).

⁸ See Hajnal 1995 on the nominative and on the origin of the genitive singular of masculine *-ā-*stems.

1.2. FREQUENCY OF CASES

The major difference between Mycenaean and all later varieties with regard to noun inflection was the existence of separate endings for the instrumental case, which later merged with the dative.⁹ So the Mycenaean case system included nominative, vocative, accusative, genitive, dative, and instrumental, while the Classical Greek case system included nominative, vocative, accusative, genitive and dative.¹⁰

It is interesting to survey the frequency of cases in written texts. Unfortunately, Mycenaean script and the nature of the extant Mycenaean texts make it virtually impossible to give meaningful frequency figures for cases and allomorphs. In § 4.1, I give my countings for Homeric and Classical Greek. It can be remarked that in both varieties the dative case is the least frequent one; among total occurrences of the dative, those in which the dative has instrumental function are about 30% in Homer and about 40% in Classical Greek.¹¹ Based on these data, the instrumental case should be the least frequent one in Mycenaean, followed by the dative, and by the other cases in the same order as in later Greek.

The results are summarized in the following scale:

Scale 1. Frequency of Cases in Mycenaean

Nom., Acc. > Gen. > Dat. > Instr.

⁹ Whereas the instrumental plural has distinct endings for all inflectional classes, it must be noted that the spelling does not provide any clue for distinguishing between the dative and the instrumental in the singular. However, consonant stems display an alternation between *-i* (from the ancient locative) and *-e* (*=/ei/*, from the ancient dative) apparently limited to the occurrences where the function is that of the dative-locative, while the instrumental only has the ending *-e*. This fact points towards the existence of a distinction in the singular, too, as proposed in Hajnal 1995: 19. According to Coleman 1987, the instrumental only preserved separate endings in the plural, and had already merged with the dative in the singular.

¹⁰ Here and in what follows I am leaving out of consideration the vocative case, which partly still survives in Modern Greek.

¹¹ Of course, these figures are tentative, given the fact that one cannot be certain about what could be all possible occurrence of an instrumental case. I have counted as instrumental occurrences of plain dative denoting instrument and manner, or governed by certain verbs as *hbedomai*, with compound verbs with the preverb *un-* and in prepositional phrases with *un-*.

This scale corresponds to the scale according to which cases are more likely to have a grammatical function:¹²

Scale 2. Grammatical/Semantic Function of Cases

	Nom. >	Acc. >	Gen. >	Dat. >	Instr. >
Gramm.	Subject	DO	Nominal Dependency	IO	
Semantic		Direction	Source Partitive	Beneficiary Locative	Instrument Perlative

It must be added that, for all cases, the singular is more frequent than the plural. It follows from the above remarks that the instrumental plural and the dative plural were the two least frequent cases. Note that, as remarked in § 1.1, the endings of the dative and of the instrumental plural were the ones that most neared the *-ā*-stems to the athematic declension.

2. CASE SYNCRETISM, ALLOMORPHY AND STABILITY OF INFLECTIONAL MARKERS

Mycenaean is not a sort of Proto-Greek however, being the oldest attested variety, it can be expected to present some archaic features. Indeed, in the field of nominal paradigms, all later varieties display the above described syncretism of the instrumental case with the dative/locative. Allomorphs of the dative in the post-Mycenaean varieties variously correspond to former allomorphs of the dative/locative or of the instrumental. In general, the dative plural displays a high degree of allomorphy in all Greek varieties.

In Homeric Greek, for example, the dative singular corresponds to the Mycenaean dative, but in the plural the situation is more complicated, be-

¹² For my definition of 'grammatical' vs. 'semantic' or 'concrete' function of cases I refer to Kurylowicz 1964; on the function of Greek cases see further Luraghi 2003, chapter 2. Note that some authors (most notably Coleman 1987) have tried to show that the ablativ relation could be expressed by the instrumental, too, in Mycenaean; I am not going to discuss this position here, but in any case it would not make a difference for my argument, because it would only add another concrete function to the instrumental case.

cause reflexes of both the ancient instrumental and the ancient dative are found, although reflexes of the dative are on the whole more frequent. The *-o*-stems have an ending *-oisi*, the same as the Mycenaean dative plural; an ending *-ois*, corresponding to the Mycenaean instrumental is also attested in about 20% of the occurrences.¹³ For the *-ā*-stems the dative plural should be *-āsi* or *-ēsi* (and these allomorphs actually occur in some dialects);¹⁴ in Homer we find two allomorphs, *-ēisi* and *-ais*, both shaped after the corresponding endings of the *-o*-stems. The dative plural of consonant stems has either the regular ending *-si*, or the ending *-essi*, shaped after the *-i*-stems in order to avoid stem allomorphy caused by simplification of possible consonant clusters (the Mycenaean ending was *-si*, as shown above).¹⁵

In terms of productivity, the spread of the endings of the *-o*-stems to other inflectional classes can be explained, because the *-o*-stems represented at this stage the productive class. By partly spreading to the *-ā*-stems, the pattern found in the endings of the thematic declension (thematic vowel plus possible consonants/semivowels) becomes dominant. The endings of the thematic declension may be regarded as superstable endings, as defined in Wurzel 1989: 135: 'We will call markers that occur in at least one stable inflectional class and are strengthened in their stability by simultaneously occurring in other inflectional classes, SUPERSTABLE markers'.

Note that in the Mycenaean paradigms dative and instrumental plural were the forms in which the *-ā*-stems were more distinct from the *-o*-stems. With the loss of the instrumental and the creation of a new dative plural for the *-ā*-stems, the latter came closer to the *-o*-stems.

I have remarked above that the *-o*-stems represented the productive class at this time. This can be demonstrated by early change of class, from athe-

¹³ Note that *-ois* usually occurs before words with initial vowels, so it could rather reflect an elision: *-ois(i)*; however, a few occurrences are also attested in different phonological environments, see Chantraine 1942: 194-5.

¹⁴ Note that in Ionic, the dialect which constitutes the base of the Homeric language, [a:] > [e:]. This change also affected Attic *-ā*-stems, as I will show in table 2. As for vowel quantity, the first declension included both original *-ā*- and **-ya*-stems, with short vowel. After vowel quantity became non-distinctive, the two types of stems merged completely.

¹⁵ See Chantraine 1942 and 1973: 40 ff. There is also an adverbial ending *-phi*, that corresponds to the Mycenaean instrumental of the *-ā*-stems and of the athematic declension, that can be used for all circumstantial relations (including those normally expressed by the genitive) and with nouns of all inflectional classes, including *-o*-stems.

matic to *-o*-stems, as in *phūlaks*, athematic nom. sg., *phūlakos*, thematic nom. sg., already attested in Homer.¹⁶

3. CLASSICAL GREEK

The following table displays the most frequently used allomorphs in literary Attic:

Table 2. Nominal Paradigms in Literary Attic (approximately 5th century BC)¹⁷

	<i>-o</i> -stems		<i>-ā</i> -stems		<i>-C/-i/-u</i> -stems	
	m./f.	n.	f.	m.	m./f.	n.
Sing.						
Nom.	<i>-os</i>	<i>-on</i>	<i>-āl-ē</i>	<i>-ās/-ēs</i>	<i>-Ø/-s</i>	<i>-Ø</i>
Acc.	<i>-on</i>		<i>-ān/-ēn</i>		<i>-a, -n</i>	<i>-Ø</i>
Gen.	<i>-ou</i>		<i>-ās/-ēs</i>	<i>-ou</i>	<i>-os</i>	
Dat.	<i>-ōi</i>		<i>-āi/-ēi</i>		<i>-i/-ei</i>	

	<i>-o</i> -stems		<i>-ā</i> -stems	<i>-C/-i/-u</i> -stems	
	m./f.	n.		m./f.	n.
Plur.					
Nom.	<i>-oi</i>	<i>-a</i>	<i>-ai</i>	<i>-es</i>	<i>-a/-ē</i>
Acc.	<i>-ous</i>		<i>-ās</i>	<i>-as</i>	<i>-a</i>
Gen.	<i>-ōn</i>		<i>-ōn</i>	<i>-ōn</i>	
Dat.	<i>-ois</i>		<i>-ais</i>	<i>-si</i>	

This is the system which is usually assumed to have served as the basis for the later development into Byzantine and Modern Greek. Inscriptions attest a number of allomorphs for the dative plural, including an ending *-eis* in the

¹⁶ *Phūlakos* is attested in Homer as proper noun.

¹⁷ In Attic *tal* → *tel* except in certain positions; note further that the *-ā*-stems also have a sub-class of nouns which build the stem with the suffix *-ya-*. The initial glide combines in various ways with the consonant of the stem; see Schwyzler 1950, and the vowel in the nominative and accusative singular is short *-a*. All nouns that bear the suffix *-ya-* are feminine.

third declension, which has the advantage to avoid stem allomorphy, and is patterned after the more productive thematic stems.

We can make some observations, in terms of stability of the endings and similarity across paradigms. In the singular, the accusative presents a pattern vowel+*n* across all paradigms, except part of the third declension. Allomorphs of the genitive singular tended to polarize around the alternation -*V* / -*s*, as noted in Seiler 1958. The dative singular was more problematic: in the first two declensions, the segmentation between stem and suffix was difficult, because the long diphthongs most likely had already lost the final element and had become long vowels in the Classical period (cf. Allen 1987). In general, one can speak of an opposition created by the nature of the final segment: -*n* for the accusative, vowel or -*s* for the genitive (partly depending on gender), and vowel for the dative. Note that only /*s*/, /*n*/ and /*r*/ are possible final consonants in Greek; among them, only /*s*/ and /*n*/ occur as final consonants of nominal endings.

In the plural, the accusative also presents similar patterns in all inflectional classes, while the genitive has the superstable marker -*ōn*. The dative, on the contrary, presents a fair degree of allomorphic variation.

All endings are monosyllable. The only possible exception were the ancient dative plural of -*o*- and -*ā*-stems, -*iosī* and -*aisī* or -*āsī* (see § 2), which was later eliminated and substituted by the old instrumental of -*o*-stems -*ois* (Schwyzer 1936: 209) and by the analogical form -*ais*. As a result, -*o*- and -*ā*-stems have the same number of syllables throughout the whole paradigm.

Consonant stems have one syllable less in the nominative singular than in the other forms:

- *elpíd-*, nom. *elpís* (<*elpíd-s*), gen. *elpíd-os*
- *leōn-*, nom. (<*leont-* with loss of final -*t* and compensatory lengthening), gen. *leontos*

-*i*-stems have longer genitives plural:

- *póli-*, nom. sg. *póli-s*, gen. pl. *pólē-os*, or *póle-ōs*

Consonant stems display a high degree of stem allomorphy: different allomorphs of the stem appear in the nominative singular and in the dative plural of part of consonant stems, as a result of simplification of consonant clus-

ures; although both endings have an initial /*s*/, the stem of the dative plural was not always the same as the nominative singular (*elpí-s*, dat. pl. *elpí-sī*, but nom. sg. /*le.gō:n*/, dat. pl. /*le.gō:si*/, other forms from *légont-*). Note that partial identity of the dative plural stem with the nominative singular stem does not strengthen the former. This would be true if the nominative singular and the dative plural shared a relevant semantic feature, which, however, is not the case.

3.1. FREQUENCY OF CASES AND CASE SYNCRETISM

In spite of having taken over the functions of the instrumental, the dative remains the least frequent case both in Homeric and in Classical Greek. Frequencies are as follows:¹⁸

Table 3. Frequency of Cases in Ancient Greek¹⁹

	Homer	Classical Greek
Nom.	45%	30%
Acc.	30%	36%
Gen.	14%	22%
Dat.	11%	12%

The frequency can be summarized by means of the following scale:

Scale 3. Frequency of Cases in Ancient Greek

Nom., Acc. > Gen. > Dat. >

¹⁸ Frequencies are calculated on a corpus consisting of five books of the *Odyssey* (1, 2, 9, 13, and 21); Plato's *Apology of Socrates*, Lysias' *Against Eratosthenes*, Isocrates' *Aeropagitis*, and Demosthenes first *Philippic*.

¹⁹ The differences in the relative frequency of the nominative and the accusative may depend on text type; note further that, in terms of token frequency, it should be considered that these two cases have the same ending for all neuter nouns and, in the plural, for part of nouns in the third declension.

As already noted, the overall frequency of plural markers is lower than that of the corresponding singular markers. So the dative plural is the least frequent case in terms of actual occurrences, i.e. token frequency. If we also consider type frequency (the number of words that take a certain pattern), we must keep in mind that this case displayed a higher allomorphy than all other cases except the nominative singular. This means that words that had a specific allomorph for the dative plural were less than words that had allomorphs of other cases. Note that the nominative singular was the case with more allomorphs, but it was also the most frequent case: consequently, low type frequency was contrasted by high token frequency. The dative, on the other hand, had low frequency in all respects.²⁰

In functional terms, the dative, which had taken over the functions of the ancient instrumental, was the case which had more semantic, rather than grammatical, uses in Classical Greek. This situation is reminiscent of what we found for the instrumental in Mycenaean: the least frequent case is also the one with more concrete functions.

The loss of the dative dates to early Byzantine Greek, between the 4th and the 8th century CE, but some traces of its weakening can be found earlier.²¹ In particular, the tendency to substitute the dative with another case started very early within prepositional phrases. In Homer the dative was more frequent than the genitive within prepositional phrases; by the Classical time it had become the least frequent case (cf. Luraghi 1996). Already in the Koine, one starts finding the genitive in place of the dative of pronouns. Later, one finds either the accusative or the genitive: both possibilities survive in Modern Greek (the genitive is the case found in the standard spoken language, the accusative occurs in the Northern dialects).²²

In the late Koine, the vowel length lost distinctiveness, and final nasals tended to be dropped. This phenomenon contributed to further weaken the position of the dative, because in the singular its endings became homophonous with the endings of the accusative. Note that at the Koine stage de-

20 High token frequency contrasts the effects of low type frequency, and reinforces certain forms, as, in the case of Greek nominal paradigms, the nominative singular, but the dative was on the whole infrequent. On the effects of type and token frequency, see Bybee 1985: 119, 133 and 1995. According to Bybee 1985: 133, 'high frequency items tend to be stored as autonomous units'.

21 On the loss of the dative and its chronology, see Humbert 1930.

22 See Dressler 1966.

scribed here the dative plural still had distinctive endings, but this could not make up for the absence of distinctive endings in all singular paradigms. In other words, the fact that a distinction was retained in the plural did not prevent it to be eventually lost altogether.

1.2. THE ELIMINATION OF THE THIRD DECLENSION

In § 1.1 noted that consonant stems are the only type of stem that have a vowel ending for the accusative singular, which elsewhere (including part of the *-i-* and *-u-* stems) is characterized by the marker *-vowel+n*, a superstable marker as defined above. As already remarked, superstable markers tend to spread to other inflectional classes: and in fact we find that new forms were created for the accusative of consonant stems like *elptis* around the third century BC, by adding a *-n* to the old accusative *elptida*. Later on we find massive change from athematic to *-ā-* stems: this change was based on the extended accusative singular in *-an*, described above, by which forms as *elptidan* were reinterpreted as the accusative of an *-ā-* stem: accordingly, a nominative *elptida* was also created. This change started around the second century BC. Masculine nouns which underwent a similar change received a sigmatic nominative. Complete merger of *-ā-* and consonant stems happened possibly by the third century AD (cf. Tonnet 1993: 29; Horrocks 1997: 69-70). When nouns of the athematic declension started to move to the *-ā-* stems the percentage of masculine nouns within the *-ā-* stems increased dramatically. This change gave more relevance to the alternation between *-s* and *-∅* for nominative and genitive of the *-ā-* stems in connection with gender.

Note that, strictly speaking, it is not completely correct to speak of a shift from athematic to *-ā-* stems, but we rather have to do with convergence of the two paradigms: this is shown by the spread of the ending of the nominative and accusative plural *-es* of the athematic nouns to the *-ā-* stems. This spread, which had the effect of eliminating the opposition nominative/accusative in the plural of the *-ā-* stems, may be connected with the drop of final *-n* of the accusative singular, which also resulted in making the accusative non-distinct from the nominative (for feminine nouns: masculine nouns have the same ending for accusative and genitive). The phonological changes described above had had the effect of reducing the distinctions in the singular of the *-ā-* stems to two, while the plural would still have had

three, if the distinction between nominative and accusative had been retained. As a consequence one would have had the rather unnatural situation in which the plural had more case distinctions than the singular.

4. GENDER, CASE DISTINCTIONS, AND INFLECTIONAL CLASSES

According to Seiler, the Greek nominal paradigms came to be crucially connected with gender. Seiler argues that the alternation of *-s* and *-Ø* that arose in the *-ā*-stems for the nominative and genitive singular and could also apply to the *-o*-stems, which were typically masculine,²³ was later connected with gender variation. Seiler's proposal explains the Modern Greek opposition between *mitera* (nom.) *miteras* (gen.) 'mother' (feminine) and *pateras* (nom.) *patera* (gen.) 'father' (masculine), while the two nouns belonged to the same inflectional class in Ancient Greek. Note that Seiler's analysis still leaves open the problem of the origin of the genitive singular marker *-a*, which did not originate from the Ancient Greek genitive singular of the masculine *-ā*-stems (which was *-ou*).

According to Christophidou's (Christophidou 2002) analysis we find three inflectional macroclasses in Modern Greek, a masculine, a feminine, and a neuter one; the masculine and the feminine macroclasses are further subdivided into 2-marker and 3-marker classes. Seiler 1958 sets up the following paradigms:

Table 4. Nominal Paradigms in Modern Greek²⁴

	3-markers	2-markers	
		Masc.	Fem.
Sing.			
Nom.	<i>filos</i>	<i>pateras</i>	<i>mitera</i>
Gen.	<i>filu</i>	<i>patera</i>	<i>miteras</i>
Acc.	<i>filo</i>	<i>patera</i>	<i>mitera</i>
Plur.			
Nom.	<i>fili</i>	<i>pateres</i>	<i>miteres</i>
Gen.	<i>filon</i>	<i>pateron</i>	<i>miteron</i>
Acc.	<i>filus</i>	<i>pateres</i>	<i>miteres</i>

Neuter nouns have the same ending for the nominative and the accusative and a separate ending for the genitive singular, much in the same way as feminine nouns. The 2-marker macroclasses are very productive in Modern Greek; the three markers classes, i.e. the ancient *-o*-stems, although very numerous, are scarcely productive, as shown for example by the fact that loan words and neologisms belong to the 2-marker class. In particular, the feminine 3-marker class is not productive, as convincingly argued in Christophidou 2002, where it is shown, among other things, that members of this class tend to move to the 2-marker class. Christophidou also adds evidence from word formation, loanwords, and language acquisition, which supports her analysis and shows that the two-markers macroclasses, in which class assignment is based on gender, are productive, and the 3-marker macroclasses retain partial productivity for masculine nouns only.

If we consider the *-Ø/-s*-alternation for masculine of the two marker class in conjunction with the paradigm of the three marker class, we see that nominative ≠ accusative appears to be a feature connected with masculine gender. For masculine nouns, the nominative is marked ('merkmalhaft') in the singular and the accusative and genitive are unmarked, and the markedness relation between accusative and nominative is reversed in the plural; feminine and neuters have a distinction between a so-called nominative/accusative, which also serves as complement of prepositions, and a genitive, which indicates nominal dependency, in both the singular and the plural.

²⁴ Adapted from Seiler 1958.

²³ It must be mentioned that feminine *-o*-stems also existed and followed the same inflection as masculine ones, thus not participating in the reanalysis of inflectional classes as connected with gender. On their evolution in Modern Greek see below.

Table 5. Resulting Distinctions

	3-markers	2-markers		
		Masc.	Fem.	Neut.
Sing.	N	N	N/A	N/A
	G	G/A	G	G
	A			
Plur.	N	N/A		
	G	G		
	A			

Identification of the relevant feature for case distinction as the alternance between $-\emptyset$ and $-s$ in the singular of the productive 2-marker class is a consequence of various phonological developments, first of all loss of final $-n$ which caused the accusative singular of feminine nouns to merge with the nominative. The emergence of this system of alternances was only possible after the reduction of the case system, and the loss of the dative.

It must be noted at this point that the definite article has a 3-marker pattern, and has distinct forms for the nominative, genitive and accusative, both in the singular and in the plural, except for neuter gender, which only has one form for the nominative/accusative and another form for the genitive. So case distinctions that are not indicated on nouns are indicated on definite articles both for masculine nouns and for feminine ones.

5. CONCLUSIONS

In the course of its history, the Greek case system displays an increasing tendency to only express grammatical relations. All cases tend to expressing grammatical relations, whereas semantic roles are encoded by PP's. This tendency is most clearly seen when the dative disappeared, and its concrete functions were taken over by prepositions. The genitive had lost its ablative value quite early;²⁵ in its partitive meaning it was later substituted by *apó*

²⁵ See Luraghi 2003: chap. 2.

plus the genitive (later accusative). Note that the functions of the dative that were inherited by the genitive in Byzantine times are indirect objects functions, i.e. those in which the dative expressed grammatical relations. The genitive could never substitute the dative in its concrete functions, like, for example, denote the semantic role instrument. At present, the genitive can still be understood as partitive in the plural, where this meaning is inherent. It is interesting to note that in Modern Greek the genitive plural can be substituted by the preposition *apó*.²⁶

In Modern Greek, markers distinguish constituents that function on the sentence level from those that function on constituent level.²⁷ Furthermore, feminine nouns pattern with neuter nouns in having the same ending for the nominative and the accusative: nouns of these two genders only have the distinction mentioned above; the distinction between nominative and accusative is preserved for feminine nouns only by means of the definite article in the singular. Only masculine nouns preserve distinct forms for nominative and accusative in all paradigms. Thus masculine nouns display more distinctions, whereas feminine nouns are closer to neuter. Neuter nouns are maximally non-distinctive, because the opposition between nominative and accusative is not even marked on the definite article. So nominal classes appear to be connected with gender in terms of number of case distinctions, not only in connection with the occurrence of $-s$ and $-\emptyset$ endings, as established by Seiler. This scalarity corresponds to the individuation scale in Proto-Indo-European, according to which we find

Scale 4. Gender and Individuation

More individuated Less individuated
 Masc. > Fem. > Neut.

(cf. Ostrowsky 1985).

²⁶ See Minardel 1939.

²⁷ Mention of an opposition marked by case between nominal head and nominal dependent is in accordance with the findings in Plank 1980: 324, who shows that the attributive relation is cross-linguistically more often marked than subject and object.

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