



ΑΚΑΔΗΜΙΑ ΑΘΗΝΩΝ

ΚΕΝΤΡΟΝ ΕΡΕΥΝΗΣ ΤΩΝ ΝΕΟΕΛΛΗΝΙΚΩΝ ΔΙΑΛΕΚΤΩΝ ΚΑΙ ΙΔΙΩΜΑΤΩΝ – Ι.Λ.Ν.Ε

Ν Ε Ο Ε Λ Λ Η Ν Ι Κ Η
Δ Ι Α Λ Ε Κ Τ Ο Λ Ο Γ Ι Α

6



ΑΘΗΝΑ 2011





N E O E Λ Λ H N I K H
Δ I A Λ E K T O Λ O Γ I A



ΝΕΟΕΛΛΗΝΙΚΗ ΔΙΑΛΕΚΤΟΛΟΓΙΑ 6

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NEUTER HETEROCLISIS IN ASIA MINOR GREEK: ORIGIN AND DEVELOPMENT*

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ΠΕΡΙΛΗΨΗ

Στην παρούσα μελέτη εξετάζονται η ιστορική προέλευση και η διαχρονική εξέλιξη της ετεροκλισίας, δηλαδή της επέκτασης της χρήσης των κλιτικών επιθημάτων *-ιου* και *-ιων* για το σχηματισμό της γενικής ενικού και πληθυντικού από τα ουδέτερα ουσιαστικά σε *-ι* σε ουσιαστικά άλλων κλιτικών τάξεων. Το φαινόμενο απαντά στις μικρασιατικές διαλέκτους (Ποντιακή, Καππαδοκική, Φαρασιωτική, Σιλλιώτικη), αλλά και σε βόρειες (Λέσβου, Κυδωνιών, Σάμου), γεγονός που συνηγορεί υπέρ μιας πρώιμης χρονολόγησής του, η οποία ανάγεται σε χρόνους πριν από τη διάσπαση των δύο διαλεκτικών συνόλων. Η ανάλυση δεδομένων από τις παραπάνω διαλέκτους δείχνει ότι η ετεροκλισία αναπτύχθηκε αρχικά ως εναλλακτική λύση στο πρόβλημα του τονισμού της γενικής ενικού και πληθυντικού των προπαροξύτων αρσενικών σε *-ος* και ουδετέρων σε *-ο* καθώς και των ισοσύλλαβων θηλυκών σε *-α* για να επεκταθεί αργότερα σε άλλες κατηγορίες ουσιαστικών που παρουσίαζαν διαφορετικά δομικά προβλήματα. Οι μεταβολές αυτές είχαν ως αποτέλεσμα τη μορφολογική συσχέτιση πολλών ουσιαστικών με το ουδέτερο γένος.

1. Introduction

This paper deals with neuter heteroclisia in Asia Minor Greek (AMGr), that is, in the Modern Greek (MGr) dialects that were spoken by the Greek Orthodox communities of eastern Asia Minor until 1923 when Greece and Turkey exchanged populations in accordance with the Treaty of Lausanne (Pontic, Cappadocian, Phrasiot, Silliot; also Bithynian). After NOYER 2004 and STUMP 2006, the term heteroclisia is used here to refer to the property of inflected forms of nouns whose constituent parts – stem and inflectional ending – do not share the same inflectional class specification. Heteroclitic forms are therefore thought of as belonging to two inflectional classes simultaneously. For example, the genitive singular form *αρκόντου* in Cypriot Greek (SYMEONIDIS 2006, p. 199) is heteroclitic in that it is built upon the stem allomorph *αρκοντ-* of the noun *άρκοντας* ‘master’, which is specified for the *ας*-masculine class, and the genitive singular ending *-ου*, which is characteristic of nouns belonging to the *ος*-masculine class such as *άππαρος* ‘horse’ or *αρφός* ‘brother’. In the present investigation, we are concerned with heteroclitic forms in which the genitive singular and plural endings characteristic of the *ι*-neuter inflectional class that prototypically contains inanimate nouns such as *σπίτι* ‘house’ or *φτι* ‘ear’ attach to stems of nouns belonging to other classes, which can be correlated with any of the three genders, masculine, feminine or even neuter. Such forms occur widely in all the AMGr dialects but also in the Northern Greek (NGr) dialects of Lesbos/Kydonies and Samos that are spoken on or just off the west coast of the Asia Minor peninsula. Some examples of heteroclitic forms from the AMGr dialects are shown in boldface in (1)-(6) below.

- (1) ζ' **μυλιού** το *τέκνέ* ‘in the mill’s trough’ (Axó Cappadocian, MAVROCHALYVIDIS and KESISOGLOU 1960, p. 200; cf. Standard Modern Greek [SMGr] *μύλου*)

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- (2) *δεσποτιού το στράτα* ‘the bishop’s way’ (Phloità Cappadocian, COSTAKIS 1962, p. 174; cf. SMGr *δεσπότη*)
- (3) *ένα χτηνιού αγέλ* ‘a herd of cows’ (Potámia Cappadocian, DAWKINS 1916, p. 456; cf. expected *χτηνών*)¹
- (4) *τ’ αφεντίου του λόγος* ‘his master’s word’ (Áno Amisós Pontic, LIANIDIS 2007 [1962], p. 26; cf. SMGr *αφέντη*)
- (5) *σου παχθαδίου το σπίτι* ‘in the garden house’ (Oenóe Pontic, LIANIDIS 2007 [1962], p. 214; cf. SMGr *μπαχτσέ*)
- (6) *παπαριώ ρούχα* ‘priests’ robes’ (Silliot, COSTAKIS 1968, p. 60; cf. SMGr *παπάδων*)²

Heteroclitic forms of this type bear major historical significance. Their development constitutes one of the shared innovations in the light of which the modern AMGr dialects are shown to be related by descent from a common ancestor, a dialectal variety of Greek that was spoken in the greater area of inner Asia Minor before the predecessors of the modern dialects started developing idiosyncratically (KARATSAREAS 2011). Their occurrence in adjacent NGr dialects further suggests that neuter heteroclitic forms possibly emerged at a time before the split of the two dialect groups –AMGr and NGr.

1. Genitive plural forms occur very rarely in Cappadocian and, in the cases where they are found, they are often mistaken for genitive singular forms (MAVROCHALYVIDIS and KESISOGLOU 1960, p. 39; PHOSTERIS and KESISOGLOU 1960, p. 11). This is due to the loss of final -ν as in *χτηνιού* which is formally identical to the genitive singular form of the noun *χτηνό* but which is crucially taken to derive from an earlier form **χτηνιούν*. This is evidenced by occasionally occurring forms that retain the final -ν, for example *προβατιούν* ‘sheep.PL.GEN’ (Araván Cappadocian, DAWKINS 1916, p. 332). Compare, in that connection, the ν-less genitive plural forms *πατιράδου* ‘father.PL.GEN’, *μανάδου* ‘mother.PL.GEN’ recorded by PAPADOPOULOS 1926, p. 60. Witness also the sound change -ων > -ουν (> -ου) in the NGr forms that is also found in Cappadocian *χτηνιού* as well as in a variety of other NGr and AMGr dialects.
2. In Silliot, inherited [ð] is generally rhotacised to [r] (COSTAKIS 1968, p. 39-41; DAWKINS 1916, p. 44). Other examples include *ρώρεκα* ‘twelve’ (< δώδεκα), *είρα* ‘I saw’ (< είδα), *ράσκαλης* ‘teacher’ (< δάσκαλος).

From a structural point of view, following the development of neuter heteroclisis, many nouns in AMGr and NGr such as *δεσπότης*, *χτήνο*, *αφέντης*, *παχτῶά* and *παπάς* in (1)-(6) became morphologically associated with the neuter gender owing to the heteroclitic forms that were part of their inflectional paradigms. In this light, neuter heteroclisis can be thought of as one of the earliest manifestations of the larger-scale tendency for nouns to become more neuter-like in terms of their morphosyntax that characterises all the modern AMGr dialects (*ibid.*). These considerations notwithstanding, the phenomenon has gone largely unnoticed in MGr dialectological literature. In response to this gap, in this paper we aim to provide an account of the historical origin and subsequent diachronic development of neuter heteroclisis in AMGr and in NGr dialects such as Lesbos/Kydonies and Samos Greek.

Like every other historical investigation of phenomena found in AMGr, our research has to overcome the almost complete absence of written evidence in the period before the 19th century, which makes it difficult to carry out a systematic comparison between early, intermediate and recent attested stages of development in order to identify what has changed over time and, in cases where change has indeed occurred, what the linguistic processes and mechanisms of change were. Fortunately, though, the lack of historical records is counterbalanced by the diversity found among the modern AMGr and NGr dialects, some of which are more conservative while others more innovative with respect to a significant number of developments, including neuter heteroclisis. The methodological advantage of this situation is that the various dialects essentially illustrate different developmental stages of the change in question, which assists us in reconstructing its origin and the trajectory that it followed over time (for more details on this methodological approach as well as for examples of its implementation, see DAWKINS 1940; KARATSAREAS 2011).

The paper is structured as follows: in §2 we briefly review previous explanations for the development of neuter heteroclisis. §3 discusses the process of morphological reanalysis that gave rise to the morphological material used in neuter heteroclisis. In §4, we move on to explore the origin of this morphological innovation on the basis of evidence from the NGr dialects of Lesbos/Kydonies and Samos while in §5 we identify the factors that conditioned its subsequent development in the AMGr dialects. In §6 we address the implications of neuter heteroclisis for the organisation of nouns into inflectional classes and genders in AMGr. §7 concludes the paper.

2. Previously proposed explanations for neuter heteroclisis

With reference to Pontic, HATZIDAKIS 1934 [1911/1912], p. 278-280, elaborating on a proposal by KOUSIS 1884, p. 86, claims that the ending *-ίων* in genitive plural forms such as *αρθεπίων* ‘man.PL.GEN’ originates in *ας*-masculine adjectives such as *οκνέας* ‘lazy’. In Hatzidakis’s analysis, these build their plural forms upon a stem allomorph *οκνεαρ-* combined with the *ος*-masculine plural endings: *οκνεάρ(οι)*, *οκνεαρίων*, *οκνεάρ(ου)ς*. According to Hatzidakis, such plural forms arose when a plural collective suffix *-άριοι* was attached to adjective stems to give *οκνεάρι-οι*, *οκνεαρί-ων*, *οκνεάρι-ους*. The former, Hatzidakis argues, was simplified to *οκνεάρ(οι)* by deletion of the first of two consecutive [i]s. Focusing on genitive plural forms in which the ending *-ίων* is found, Hatzidakis claims that they are based on the original stem *οκνεαρι-* that preserves the first [i] of the collective suffix. He thus rejects the view that they are related to neuter nouns. He, however, provides no explanation as to why the original stem does not appear in accusative plural forms such as *οκνεάρ(ου)ς*, in which no consecutive [i]s are found. As for genitive singular *-ίου* in forms such as *αρθεπίου* ‘man.SG.GEN’, Hatzidakis treats it as an analogical formation on the basis of plural *-ίων*, even though the former is not found in adjectives of the *οκνέας* type that form their genitive singular as *οκνέα*. More importantly, though, this adjective group is restricted to Pontic and Phrasiot (DAWKINS 1916, p. 167-168) and is not attested in any of the other AMGr dialects or in the NGr dialects in which we find heteroclitic forms. It is therefore highly unlikely that this is where the origin of neuter heteroclisis should be sought.

DAWKINS 1916, p. 95 notes the use of the ending *-ιού* to form the genitive singular of masculine nouns in Cappadocian, mentioning in passing that it is “based upon the decl.[ension] of diminutives in *-ί* and *-ι*, [the ending] being taken direct”. Along similar lines, COSTAKIS 1964, p. 34 argues that numerous masculine and feminine nouns in Anakú Cappadocian have shifted to neuter diminutives in the genitive singular and plural while other scholars merely state the occurrence of heteroclitic forms in their descriptions of Cappadocian varieties (KESISOGLOU 1951, p. 34; MAVROCHALYVIDIS and KESISOGLOU 1960, p. 34-35). In his analysis, JANSE 2004, p. 8, guided by its use in the formation of the so-called agglutinative forms of Cappadocian, treats *-ιού* in forms such as *αθρωπιού* ‘man.SG.GEN’ as an agglutinative ending despite of its expressing at least two morphosyntactic properties at the same time – case and number – and not only one of them, as would be typical of a truly agglutinative ending.

It is by now obvious that an explanatorily adequate account of the development of neuter heteroclisis is lacking from the literature.

3. Morphological reanalysis of the *ι*-neuter endings

Both traditional and modern analyses of MGr noun inflection generally assume that inflected forms of *ι*-neuter nouns such as *σπίτι* ‘house’ or *παιδί* ‘child’ are structured on the basis of a single bound stem that is formally identical with the nominative/accusative singular form (ALEXIADOU and MÜLLER 2008; CLAIRIS and BABINIOTIS 1996; MALIKOUTI 1970; RALLI 2000, 2005; TRIANTAPHYLIDIS 1941; THOMADAKI 1994). Endings expressing the various case/number combinations making up the nominal paradigm of these nouns attach to this stem in inflection, as shown in (7).

(7)	MGr <i>παιδί</i> ‘child’		
		SINGULAR	PLURAL
	NOM/ACC	<i>παιδί-∅</i>	<i>παιδι-ά</i>
	GEN	<i>παιδι-ού</i>	<i>παιδι-ών</i>

Notice that the genitive singular and plural endings are *-ού* and *-ών*. In MGr dialects that have undergone synizesis, these are always stressed on the [u] and [o] respectively for historical reasons. However, genitive heteroclitic forms of the type that we saw in (1)-(6) above are formed with (variants of) the endings *-ιου* in the singular and *-ιων* in the plural. For example, we find *αφεντίου* in Pontic and *χτηνιού* in Cappadocian. These endings are the result of a morphological reanalysis whereby the stem final *-ι* of genitive forms such as *παιδι-ού* and *παιδι-ών* in (7) was taken to be part of the ending. This reanalysis of a non-affixal part of the stem as part of the affix, termed secretion by HASPELMATH 1995, p. 8-10, is illustrated in (8) with an example from Pontic, which is carefully chosen here to show that the morphological reanalysis pre-dates the introduction of synizesis, a development that this dialect never underwent, and must therefore be dated significantly early in the history of AMGr. In Pontic, the stress of the reanalysed endings is also fixed and falls always on the ending-initial [i]. In varieties in which the phonological rule that deletes word-final unstressed high vowels is operative, the genitive singular ending surfaces as *-ί*.

- (8) Pontic παιδί(ν) ‘child’
 GEN.SG παιδί(-ου) > παιδ-ί(ου) > -ί(ου)
 GEN.PL παιδί-ων > παιδ-ίων > -ίων

What may have been the trigger for this reanalysis is not clear. Drawing on data from Cappadocian, DAWKINS 1916, p. 98; (see also JANSE 2001, p. 475-476, 2004, p. 6-7; KARATSAREAS 2007, p. 51-56) proposes that the endings in (8) emerged specifically from paroxytone *ι*-neuters such as *σπίτι* ‘house’ which, due to high vowel deletion, had lost their final *-ι* in the nominative/accusative singular resulting in forms such as *σπιτ*. In Dawkins’s analysis, *ι*-less nominative/accusative singular forms were interpreted as bases upon which *-ιού* and *-ίων* were added on the basis of the shared phonetic material found in all inflected forms giving rise to morphological reanalysis as in (9).

- (9) Cappadocian *σπιτ* ‘house’
- | | Stage I | high vowel
deletion | Stage II | reanalysis | Stage III |
|------------|-----------------|------------------------|-----------------|------------|-------------------------------|
| NOM/ACC.SG | <i>σπίτι-∅</i> | | <i>σπιτ-∅</i> | | <i>σπιτ-∅</i> |
| GEN.SG | <i>σπιτι-ού</i> | | <i>σπιτι-ού</i> | | <i>σπιτ-ιού</i> > <i>-ιού</i> |
| GEN.PL | <i>σπιτι-ών</i> | | <i>σπιτι-ών</i> | | <i>σπιτ-ίων</i> > <i>-ίων</i> |

High vowel deletion is indeed operative in many AMGr and NGr dialects, in which the genitive endings have undergone the morphological reanalysis in (8). This is, however, not always the case as shown by example (5) in §1 from Oenóe Pontic that does not delete high vowels, as shown by the final *-ι* in *σπίτι*, and yet displays neuter heteroclisis in *παχτῶαδίου*, the genitive singular of *παχτῶάς* ‘garden’ (<Turkish *bahçe*)³. The form also shows that, in our analysis, heteroclitic forms preserve the stem allomorphy of the inflectional class to which nouns primarily belong. *παχτῶαδίου* is composed by the stem allomorph *παχτῶαδ-*, normally found in plural forms, and *-ίου*. This goes against

3. Turkish loanwords that end in a stressed vowel are generally morphologically adapted to the feminine inflectional classes in most Pontic varieties; for example *παχτῶά* ‘garden.F’ (<Turkish *bahçe*) (OCONOMIDES 1958, p. 170). In the varieties of Oenoe and Áno Amisós, however, these are adapted to the masculine inflectional classes as in the majority of MGr dialects. Hence *παχτῶάς* ‘garden.M’ (KYRANOUDIS 2009, p. 125-126; see also ANDRIOTIS 1950; NEWTON 1963).

RALLI *et al.*'s 2004, p. 575-577 and RALLI's 2006, p. 136-141 analysis of heteroclitic forms in the NGr dialects of Lesbos, Kydonies and Moschonisia such as *κριγιατιού* 'meat.SG.GEN', which they analyse as being structured on a novel stem allomorph *κριγιατι-*, modelled on the stems of *t*-neuter nouns. We, however, see no reason for the postulation of such an *ad hoc* allomorph that is used in no other word formation processes apart from neuter heterocclisis. In our analysis, the stems of heteroclitic forms in AMGr do not differ from those of cognate forms in other MGr dialects that are not heteroclitic.

4. The origin for the innovation: stress uncertainty as a trigger

The NGr dialects of Lesbos/Kydonies and Samos appear to offer valuable insights as regards the origin of neuter heterocclisis. Heteroclitic forms have a very limited and accountable distribution in the noun inflection of the two dialects, compared with the various AMGr dialects, in which, as we will see later on, they are found to a much wider extent. Lesbos and Kydonies, and Samos Greek can therefore be thought of as representing an incipient stage in the development of this morphological innovation.

According to early descriptions of Lesbos/Kydonies Greek, neuter heterocclisis, in the cases where it is found, is almost exclusively attested with proparoxytone nouns belonging to the *ος*-masculine and *ο*-neuter inflectional classes, and in the case of genitive plural, with a small number of *α*-feminine nouns, as well (10). In Samos, only neuter nouns have heteroclitic forms in the genitive singular and plural, most of them being proparoxytone members of the *ο*-neuter inflectional class (11).

(10) Lesbos/Kydonies Greek (ANAGNOSTOU 1903, p. 16-17; PAPADOPOULOS 1926, p. 57; SACCARIS 1940, p. 107; see also MELISSAROPOULOU 2007, p. 30)

a. *ος*-masculine nouns

NOM.SG	<i>άθρουπους</i> 'man'	GEN.SG	<i>αθρουπ-ιού</i>	GEN.PL	<i>αθρουπ-ιούν</i>
	<i>άτζιλους</i> 'angel'		(<i>ατζιλ-ιού</i>)		<i>ατζιλ-ιούν</i>
	<i>άνιμους</i> 'wind'		<i>ανιμ-ιού</i>		(<i>ανιμ-ιούν</i>)

b. *α*-feminine nouns

<i>θάλασσα</i> 'sea'	<i>θαλασσ-ιούν</i>
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c. *ο*-neuter nouns

<i>πρόβατου</i> 'holm-oak'	<i>προβατ-ιού</i>	<i>προβατ-ιούν</i>
<i>σίδηρου</i> 'iron'	<i>σιδηρ-ιού</i>	(<i>σιδηρ-ιούν</i>)
<i>άλουγου</i> 'horse'	<i>αλουγ-ιού</i>	(<i>αλουγ-ιούν</i>)

(11) Samos Greek (ZAPHEIRIOU 1914, p.48; ZAPHEIRIOU 1995, p. 91-92)

NOM.SG	<i>ἀδίου</i> 'intestine'	GEN.SG	<i>ἀδιο-ιού</i>	GEN.PL	<i>ἀδιο-ιούν-ις⁴</i>
	<i>γόνατου</i> 'knee'		<i>γουνατ-ιού</i>		<i>γουνατ-ιούν-ις</i>
	<i>άλουγου</i> 'horse'		<i>αλουγ-ιού</i>		<i>αλουγ-ιούν-ις</i>

The heteroclitic forms in (10) and (11) have cognates in all the AMGr dialects. Compare, for example, Lesbian *αθρουπιού* and *αθρουπιούν* with Malakopí Cappadocian *αθρουπιού*, Pontic *ανθρωπί(ου)* and *ανθρωπίων*, Silliot *αρτουπιού* and *αρτουπιώ* (DAWKINS 1916, p. 47, 99; PAPADOPOULOS 1955, 46); or, Samian *αλουγιού* with Demírdesi Bithynian *αλογιού* (DANGUITIS 1943, p. 80). Neuter heterocclisis is therefore a morphological innovation that is shared by the AMGr dialects, on the one hand, and the NGr dialects of Lesbos and Samos, on the other. This common development cannot be due to chance. On the contrary, it appears to suggest a relation between the two that may actually be stronger than generally thought, which in turn lends support to our methodological approach of treating Lesbian and Samian as representing the earliest attested stages in the development of neuter heterocclisis in AMGr.

In accounting for this stage and on the basis of the attestation profile exemplified in (10) and (11), it stands to reason to assume that proparoxytone *ος*-masculine and *ο*-neuter nouns were the first ones to exhibit neuter heterocclisis. In search for the trigger of this change, we observe with TRIANTAPHYLIDES 1963 that these two particular noun groups are characterised by a significant degree of uncertainty and instability with respect to stress placement in the genitive singular and plural cells of their paradigms. This uncertainty is caused by the clash between the inherited, Ancient Greek rule of stress movement and the later MGr tendency for columnar stress. Stress movement is triggered by endings that contain vowels originating in Ancient Greek long vowels or diphthongs which caused the accent to change position in the ancient language due to accentuation limitations. The genitive singular and

4. Note the peculiar extension of the genitive plural ending by the addition of *-ις*, which is the nominative/accusative plural ending of *ας-*, *ης-*, *ες-*, *ους-* masculine and *α-*, *η-*, *ε-*, *ου-* feminine nouns such as *άντρας* 'man' – *άντρις* or *γυναίκα* 'woman' – *γυναίκις*.

plural *-ου* and *-ων* are of this type. Despite the loss of length distinctions in MGr, the stress movement rule was inherited and, in many MGr dialect and varieties, it still has a particular effect in many proparoxytone nouns belonging to the *ος*-masculine and *ο*-neuter classes. For example, masculine *δάσκαλος* ‘teacher’ and neuter *πρόβατο* ‘sheep’ tend to move their stress in the penultimate syllable of their genitive forms in the standard language: *δασκάλου*, *δασκάλων*; *προβάτου*, *προβάτων*.

In contrast, the tendency for columnar stress is manifested in keeping the stress of inflected forms stable on the syllable on which it is found in the nominative singular form (TRIANTAPHYLIDIS 1941, p. 41, 228). This yields forms such as *δάσκαλου*, *δάσκαλων*; *πρόβατου*, *πρόβατων*. As a rule of thumb, nouns inherited from Ancient Greek and nouns occurring in higher registers move their stress whereas more recent formations and compounds generally have columnar stress across their paradigms (for the impossibility of defining with precision which nouns follow which rule, see CLAIRIS & BABINIOTIS 1996, p. 22-24; HOLTON *et al.* 1997, p. 51-53, 63-64; THUMB 1912, p. 45, 60).

It has been shown that this kind of instability and stress uncertainty can lead to particular affected forms becoming diachronically defective. HOLTON and MANOLESSOU 2010, p. 554, and SIMS 2006, 2007 (forthcoming) have demonstrated this to be the case with genitive plural forms of parisyllabic *α*-feminine nouns in MGr. This class contains inherited nouns tracing their origin either in the ancient first declension such as *γλώσσα* ‘tongue, language’ or in the ancient third declension such as *ασπίδα* ‘shield’ that underwent major inflectional restructuring in Koiné times. The two ancient declensions differed in their accentuation, and the stress of *α*-feminine nouns in MGr generally falls on the syllable corresponding to their accentuated syllable in Ancient Greek. Nouns of the former origin are accordingly stressed on the ultima in the genitive plural as in *γλωσσών*; nouns of the latter origin are stressed on the penult as in *ασπίδων*. Owing to this class-internal conflict and the consequent uncertainty as to stress placement, genitive plural forms of parisyllabic *α*-feminine nouns were avoided and became gradually unproductive in MGr, thus rendering the paradigms of many feminine nouns defective in this respect.

With these considerations in mind and following STUMP 2006, p. 297-301, who views heteroclisia as a mechanism against morphosyntactic property

neutralisation and defectiveness, we propose that neuter heteroclisis in the genitive singular and plural of proparoxytone *ος*-masculine and *ο*-neuter nouns, and in the genitive plural of parisyllabic *α*-feminine nouns is the result of a repair strategy whose aim was to overcome the uncertainty as to stress placement in the two paradigmatic cells. Heteroclisis is taken here to have been employed in order to counteract stress uncertainty, which could potentially lead to significant defectiveness in the affected nouns' paradigms. The likelihood of this can be retrospectively shown to have been quite high in light of the unproductive status of the genitive plural of *α*-feminine nouns in MGr. The means for the repair were sought in the *ι*-neuter inflectional class. Apart from being extremely productive, this class provided two reanalysed endings inherently specified for stress, which was stably found on the [i], *-ίου* and *-ίων*, as supported by the Pontic data that provide uncontroversial evidence that heteroclisis developed before the introduction of synizesis. Our account of the origin of neuter heteroclisis is illustrated in (12) below.

- (12) The early development of neuter heteroclisis in AMGr
- a. paroxytone *ος*-masculine nouns

NOM/ACC.SG	<i>άνεμος</i> 'wind'		
GEN.SG	<i>ανέμου/άνεμου ?</i>	>	<i>ανεμ-ίου</i>
GEN.PL	<i>ανέμων/άνεμων ?</i>	>	<i>ανεμ-ίων</i>

 - b. paroxytone *ο*-neuter nouns

NOM/ACC.SG	<i>πρόβατο</i> 'sheep'		
GEN.SG	<i>προβάτου/πρόβατου ?</i>	>	<i>προβατ-ίου</i>
GEN.PL	<i>προβάτων/πρόβατων ?</i>	>	<i>προβατ-ίων</i>

 - c. parisyllabic *α*-feminine nouns

NOM/ACC.SG	<i>θάλασσα</i> 'sea'		
GEN.PL	<i>θαλασσών/θάλασσων ?</i>	>	<i>θαλασσ-ίων</i>

Having the noun groups in (12) as its starting point, neuter heteroclisis started to spread within the noun inflectional system of the AMGr dialects, in which it extends to nouns of different stress properties and inflectional classes. It is to these subsequent developments that we now turn.

5. The spread of the innovation: diagrammaticity and gender as conditioning factors

5.1 Diagrammaticity

Stress appears to have played a key role in the extension of neuter heteroclisis to paroxytone *ος*-masculine and *ης*-masculine nouns such as *μύλος* ‘mill’ and *δεσπότης* ‘bishop’ that have heteroclitic genitive forms in many Cappadocian varieties ((1), (2); §1). Due to high vowel deletion, the genitive singular of such nouns came to be expressed by a null ending in many AMGr varieties. For example, in Delmesó Cappadocian, the genitive singular of *μύλος* is *μύλ-∅* (DAWKINS 1916, p. 95). Similarly, in Pontic varieties with high vowel deletion, the genitive singular of *δεσπότης* ‘master’ is *δεσπότη-∅* (OECONOMIDES 1958, p. 165). This leads to a situation whereby the nominative singular, that is, the unmarked form in the paradigm of the two nouns, has an overt exponent (*μύλ-ος*, *δεσπότης*) whereas the genitive singular, which is a more marked form in morphologically coding case and number, has a zero exponent as shown in (13).

- | | | |
|------|------------------------|------------------|
| (13) | a. Delmesó Cappadocian | b. Pontic |
| | NOM.SG <i>μύλ-ος</i> | <i>δεσπότης</i> |
| | GEN.SG <i>μύλ-∅</i> | <i>δεσπότη-∅</i> |

From a typological point of view, this is not an expected distribution of overt and zero exponents within the paradigm as it goes against the notion of diagrammaticity, namely the optimal alignment of semantic relations between categories by the formal relations between the markers of those categories (KOCH 1996; see also DRESSLER and ACSON 1985; KOCH 1995 and references therein). Based on the theory of markedness, the idea behind diagrammaticity is that, within nominal inflection, marked values for case and number tend to be morphologically expressed by more complex material than the one used to express unmarked values. Neuter heteroclisis is in that light taken to have spread to nouns such as *μύλος* and *δεσπότης* in (13) in order to repair this violation of diagrammaticity by replacing the zero exponent of genitive singular with an overt exponent. This development again drew from the resources of the *ι*-neuter inflectional class, which, following the developments that we saw in §4, provided a tried strategy for the solution of stress-related problems that arose in inflection. This account is exemplified in (14) by the form *μυλιού* attested in Axó Cappadocian and by the Άνο Amisós Pontic

αφεντίου of *αφέντης* ‘master’ that we came across in §1 (example (4)), which has undergone the same development. We should note that in the latter case high vowel deletion does not affect the genitive singular ending, which in the ης-masculine inflectional class is by definition null. It does affect, though, the final vowel of the stem allomorph *αφεντη-*, causing the same violation of diagrammaticity as the one caused in the inflection of paroxytone ος-masculine nouns.

(14) a. Axó Cappadocian (MAVROCHALYVIDIS and KESISOGLOU 1960, p. 34)

NOM.SG	<i>μύλ-ος</i>		
GEN.SG	<i>μύλ-ιού</i>	< <i>μύλ-∅</i>	< <i>μύλ-ου</i>

b. Áno Amisós Pontic (LIANIDIS 2007 [1962]: 26)

NOM.SG	<i>αφέντη-ς</i>		
GEN.SG	<i>αφεντ-ίου</i>	< <i>αφέντ-∅</i>	< <i>αφέντη-∅</i>

The same motivation is argued to lie behind the extension of neuter heteroclisis to imparisyllabic ας-masculine nouns in most Cappadocian and in some Pontic varieties. In a few Cappadocian varieties these nouns have a null exponent in the genitive singular such as Potámia Cappadocian, in which the genitive singular of *παπάς* ‘priest’ is *παπά-∅*, bearing -∅ for the expression of case and number. The paradigms of such nouns also violate diagrammaticity, triggering the repair exemplified below by the heteroclititic form *παπαδιού* from Anakú Cappadocian. Note that the *ι*-neuter ending is attached to the consonant-ending allomorph *παπαδ-*.

(15) a. Potámia Cappadocian (DAWKINS 1916, p. 109)

NOM.SG	<i>παπά-ς</i>
GEN.SG	<i>παπά-∅</i>

b. Anakú Cappadocian (COSTAKIS 1964, p. 38)

NOM.SG	<i>παπά-ς</i>
GEN.SG	<i>παπαδ-ιού</i> < <i>παπά-∅</i>

5.2. Gender and beyond

Moving on to nouns that belong to neuter classes other than the *ι*-neuter one, we find that in certain AMGr dialects neuter heteroclisis acts as an inflectional uniformisation mechanism. In Pontic, all neuter nouns form their genitive singular and plural with the *ι*-neuter endings *-ί(ου)* and *-ίων*, the only exception being oxytone *ο*-neuters that preserve non-heteroclititic forms in the singular (16).

- (16) Pontic (DRETTAS 1997, p. 126-128; OECONOMIDES 1958, p. 194-196, 202-206; PAPADOPOULOS 1955, p. 46-47, 49-51)
- a. *o*-neuter nouns
- | | | | | | |
|--------|------------------|--------|-------------|--------|-----------|
| NOM.SG | δέντρο(ν) 'tree' | GEN.SG | δεντρ-ί(ου) | GEN.PL | δεντρ-ίων |
| | χτήνο(ν) 'cow' | | χτην-ί(ου) | | χτην-ίων |
- b. *μα*-, *μο*-, *ας*-neuter nouns
- | | | | | | |
|--------|-----------------|--------|--------------|--------|------------|
| NOM.SG | αίμα(ν) 'blood' | GEN.SG | αιματ-ί(ου) | GEN.PL | αιματ-ίων |
| | άψιμο(ν) 'fire' | | αψιματ-ί(ου) | | αψιματ-ίων |
| | κρέας 'meat' | | κρεατ-ί(ου) | | κρεατ-ίων |
- c. *ος*-neuter nouns
- | | | | | | |
|--------|------------------|--------|------------|--------|----------|
| NOM.SG | ἄκεύος 'utensil' | GEN.SG | ἄκευ-ί(ου) | GEN.PL | ἄκευ-ίων |
| | ἄειλος 'lip' | | ἄειλ-ί(ου) | | ἄειλ-ίων |

The hypothesised original genitive singular and plural inflection of these neuter nouns (δέντρου, δέντρων; χτήνου, χτήνων; αίματος, αιμάτων; αψίματος, αψιμάτων; κρέατος, κρεάτων; ἄκεύους, ἄκευών; ἄειλους, ἄειλών) do not present any problems with respect to stress uncertainty or diagrammaticity. Only genitive singular forms of paroxytone *o*-neuter nouns such as δέντρου, χτήνου and possibly also of *μα*-, *μο*-, *ας*-neuter nouns of the type αιμάτου, αψιμάτου, κρεάτου could be thought of as violating diagrammaticity, which could in turn potentially trigger neuter heteroclitisis as we saw in §5.1, but only in Pontic varieties that delete unstressed word-final high vowels. However, heteroclititic forms such as δεντρίου, χτηνίου, κρεατίου figure in all varieties of the dialect, thus calling for an alternative explanation.

The generalisation of neuter heteroclitisis that we witness in (16) evidences a tendency in Pontic for the inflection of neuter nouns to become uniform having the *ι*-neuter inflectional class as a model. That is the class which is by far the most productive one not only among the neuter classes but also within the MGr noun inflection system as a whole (CHRISTOFIDOU 2003; RALLI 2009)⁵. As such, it exerts strong influence on the other inflectional classes of the same gender, which had already started losing members to the *ι*-neuter inflectional class due to the developments we saw in §4. Heteroclititic forms of proparoxytone *o*-neuter nouns such as γονατί(ου), γονατίων of γόνατο(ν) 'knee' or βουτουρί(ου), βουτουρίων of βούτορο(ν) 'butter' that, according to our

5. For a similar development in Kydonies and Moschonisia Greek, see RALLI *et al.* 2004.

analysis, emerged early in the history of the AMGr dialects must have surely facilitated the spread of neuter heteroclisis to more nouns within their inflectional class that did not present with stress-related difficulties such as *δέντρο* or *χτήνο*. At a later stage, these subsequently acted as ‘Trojan horses’ (in the sense of CORBETT 1991, p. 98) in opening the door for many more nouns of the same gender to form heteroclitic genitive singular and plurals, leading to inflectional uniformisation in these two paradigmatic cells as shown in (16).

The generalisation of neuter heteroclisis in the neuter inflectional classes did not leave the other inflectional classes unaffected. In Pontic, the genitive plural of virtually all inflectional classes is formed with the *ι*-neuter ending *-ίων* (17), an extensive spread that must also be considered to have been made possible by early heteroclitic forms of proparoxytone *ος*-masculine and parasyllabic *α*-feminine nouns such as *ανθρωπίων* of *άνθρωπος* ‘man’ or *κοσσάριων* of *κοσσάρα* ‘hen’.

- (17) Pontic (DRETTAS 1997, p. 118-125; OECONOMIDES 1958, p. 156-194, 200-202; PAPADOPOULOS 1955, p. 36-47)

a. *ος*-masculine nouns

NOM.SG	<i>πετειός</i> ‘cockerel’	GEN.PL	<i>πετειν-ίων</i>
	<i>Τραπεζουνταίος</i> ‘Trebizondian’		<i>Τραπεζουνται-ίων</i>

b. *ας*-, *ης*-, *ες*-masculine nouns

NOM.SG	<i>μάερας</i> ‘cook’	GEN.PL	<i>μαερ-ίων</i>
	<i>δουλευτής</i> ‘worker’		<i>δουλευτηδ-ίων</i>
	<i>κλέφτες</i> ‘thief’		<i>κλεφτ-ίων/ κλεφταδ-ίων/ κλεφταντ-ίων</i>

c. *α*-, *η*-feminine nouns

NOM.SG	<i>μάνα</i> ‘mother’	GEN.PL	<i>μαναδ-ίων</i>
	<i>αυλή</i> ‘yard’		<i>αυλ-ίων</i>

At this point, we should note the possibility that some neuter heteroclitic forms might have been borrowed from the paradigms of cognate nouns found in the *ι*-neuter inflectional class. For example, it is likely that the genitive forms *δεντρί(ου)* and *δεντρίων* of the *ο*-neuter *δέντρον* ‘tree’ in Pontic (16) were borrowed from the inflection of cognate *ι*-neuter *δεντρί(ν)*. While it is to a certain degree probable that such cognate nouns might have facilitated the early development of neuter heteroclisis (§4), the number of *ι*-neuters corresponding to nouns exhibiting neuter heteroclisis in their genitive singular and/or plural is limited and in no way comparable to the wealth of heteroclitic forms attested in the AMGr and NGr dialects. For example, *ι*-neuter nouns such as

**ανθρώπι* or **βουτύρι* that could have lent their genitive singular and plural to form the Pontic *αρθωπί(ου)*, *αρθωπίων* and *βουτουρί(ου)*, *βουτουρίων* are not attested in any MGr dialect according to the *Historical Dictionary of the Greek Language* of the Academy of Athens.

6. The implications of neuter heteroclisis in Asia Minor Greek

Neuter heteroclisis had major implications for noun inflection in AMGr, which built upon the strict correlation between inflection and gender that holds in the overwhelming majority of the MGr dialects. In RALLI's 2002, 2005 model of analysis, noun stems and inflectional endings in MGr are inherently marked for inflectional class at the level of their lexical entry. Inflectional class marking on both stems and endings ensures the correct combination of the two in the production of grammatical inflected forms. In addition to this, inflectional class specification in stems provides the necessary information in order for the morphological assignment of nouns to the three genders, masculine, feminine, neuter. This relation between the two has been independently pointed out by many researchers in the literature who conclude that the gender for any given noun in MGr can be safely inferred from its inflection (ANASTAS- SIADIS-SYMEONIDIS and CHILA MARKOPOULOU 2003; CHRISTOFIDOU 2002, 2003; COKER 2009; LURAGHI 2004; MORPURGO-DAVIS 1968; SEILER 1958)⁶.

Neuter heteroclisis caused a break in this inferential correlation in the AMGr dialects. Working on the assumption that, before the development of heteroclisis, the AMGr noun inflection system did not differ significantly from that which forms the basis of noun inflection in all the MGr dialects (THUMB 1912), we see that, prior to the reanalysis of the genitive endings of *t*-neuter nouns (§3), *-ου* and *-ων*, in which the reanalysed endings originate, were the default

6. Nouns such as *δρόμος* 'street' and *οδός* 'road' are the only exception to this generalisation. In the standard language, these belong to the same inflectional class but not to the same gender; *δρόμος* is masculine, *οδός* is feminine. However, in most MGr dialects including the AMGr and NGr ones dealt with here, feminine nouns of this class were reformed either by shift to the masculine gender or by morphological adaptation to the feminine inflectional classes (HOLTON AND MANOLESSOU 2010, p. 556). Therefore, the generalisation formulated above retains its validity.

endings for the expression of genitive singular and plural, respectively. The plural ending was invariant across all inflectional classes, whereas the singular ending was the least specific among the possible genitive singular realisations (-ου, -∅, -ς, -ους) as it appeared in four out of seven major inflectional classes. This stage is illustrated in (18) (see also SPYROPOULOS and KAKARIKOS's 2011 analysis of noun inflection in Delmesó Cappadocian; also, ALEXIADOU and MÜLLER 2008 with reference to SMGr).

- (18) AMGr, prior to the morphological reanalysis
- | | a. masculine | b. feminine | c. neuter | | | |
|--------|--------------|-------------|-----------|--------|----------|------------------|
| | -ος | -ας, -ης | -α, -η | -ο | -ι | -μα, -ας -ος |
| GEN.SG | μύλ-ου | παπά-∅ | γυναίκα-ς | νερ-ού | σπιτί-ου | κρεάτ-ου δάσ-ους |
| GEN.PL | μύλ-ων | παπάδ-ων | γυναικ-ών | νερ-ών | σπιτί-ων | κρεάτ-ων δασ-ών |

After the morphological reanalysis and before the development of neuter heterocclisis, the novel endings -ίου and -ίων were limited to the *ι*-neuter inflectional class. As -ού and -ών preserved their original form in the other classes in which they were found before the development of neuter heterocclisis, -ίου and -ίων were no longer default in expressing the genitive singular and plural but were, on the contrary, uniquely associated with the *ι*-neuter class. In CARSTAIRS-MCCARTHY's 1994 terms, the two endings developed into class identifiers for that class and, due to the correlation between inflection and gender, into gender identifiers, as well. This stage is illustrated in (19).

- (19) AMGr, after the morphological reanalysis, before neuter heterocclisis
- | | a. masculine | b. feminine | c. neuter | | | |
|--------|--------------|-------------|-----------|--------|-----------|------------------|
| | -ος | -ας, -ης | -α, -η | -ο | -ι | -μα, -ας -ος |
| GEN.SG | μύλ-ου | παπά-∅ | γυναίκα-ς | νερ-ού | σπιτί-ίου | κρεάτ-ου δάσ-ους |
| GEN.PL | μύλ-ων | παπάδ-ων | γυναικ-ών | νερ-ών | σπιτί-ίων | κρεάτ-ων δασ-ών |

After the development of neuter heterocclisis, large numbers of nouns in AMGr acquired mixed paradigms. In their basic paradigmatic cells, these nouns inflected according to their primary inflectional class, which could be correlated with any of the three genders. In the genitive cells of their paradigms, however, they inflected according to the *ι*-neuter inflectional class. In this way, nouns that acquired heterocclitic forms were found to belong to two inflectional classes and to two genders simultaneously, one of which was always the neuter and the *ι*-neuter class. Compare, in that connection, the paradigms of masculine and feminine nouns with that of *ι*-neuter nouns in Cappadocian and Pontic in (20) and (21) below.

- (20) Cappadocian (Semenderé, Phloítá, Delmesó, Ferték; DAWKINS 1916, p. 90, 99, 103, 110)

	a. ος-masculine 'man'	b. ος-masculine 'mill'	c. ας-masculine 'priest'	d. ι-neuter 'shirt'
SINGULAR				
NOM/ACC	άρουπ-ους	μύλ-ος	παπά-ς	μετ-∅
GEN	άρουπ-ιού	μύλ-ιού	παπαδ-ιού	μετ-ιού
PLURAL				
NOM/ACC	αρώπ(-οι)	μύλ-ους	παπάδ-ες	μέτ-ια
GEN	άρουπ-ιού	μύλ-ιού	παπαδ-ιού	μετ-ιού

- (21) Pontic (Oeconomidēs 1958, p. 163, 196; Papadopoulos 1955, p. 43, 46)

	a. ος-masculine 'man'	b. ης-masculine 'worker'	c. η-feminine 'yard'	d. ι-neuter 'belt'
SINGULAR				
NOM	άνθρωπ-ος	δουλεττή-ς	αυλή-∅	λωρ-ί(ν)
GEN	άνθρωπ-ί(ου)	δουλεττή-∅	αυλή-ς	λωρ-ί(ου)
ACC	άνθρωπ-ο(ν)	δουλεττή-∅	αυλή-∅	λωρ-ί(ν)
PLURAL				
NOM	ανθρώπ(-οι)	δουλεττήδ-ες	αυλ-άς	λωρ-ία
GEN	άνθρωπ-ίων	δουλεττήδ-ίων	αυλ-ίων	λωρ-ίων
ACC	ανθρώπ(ου)ς	δουλεττήδ-ας	αυλ-άς	λωρ-ία

As is shown above, with the development of neuter heteroclisis, nouns belonging to all inflectional classes and semantic types became morphologically associated with the neuter gender and the *ι*-neuter inflectional class. Naturally, the effect of this association was stronger in the case of inanimate nouns such as Phloítá Cappadocian *μύλος* or Pontic *αυλή*, which were already more saliently related to the neuter than animate nouns by virtue of their meaning. It is therefore clear that neuter heteroclisis provided the morphological means that strengthened the semantic association of non-neuter inanimate nouns with the neuter gender in AMGr. This association later acted as the driving force for other, pervasive developments that affected different aspects of nominal morphosyntax in the AMGr dialects. Suffice it to mention here semantic agreement in Pontic and Rumeic whereby inanimate nouns trigger agreement in the neuter on targets agreeing with them (articles, adjectives, pronouns, numerals), an innovation that has been shown to have formed the conditions for the later demise and loss of gender distinctions in Cappadocian and Pharasiot (Karatsareas 2009, 2011); or, the grammaticalisation of *ι*-neuter plurals

for all imparisyllabic masculine nouns denoting inanimate entities in Cappadocian and Pharasiot – for example, Sílata Cappadocian *odá(ζ)* ‘room’ – *odáδια* ‘rooms’ (DAWKINS 1916, p. 110; cf. SMGr *οντάδεζ*); Pharasiot *καβγάς* ‘quarrel’ – *καβγάδε* (< *καβγάδια*) ‘quarrels’ (ANDRIOTIS 1948, p. 35; cf. SMGr *καβγάδεζ*). Owing to such morphological developments, the *ι*-neuter inflectional class saw a further increase in its high productivity that, combined with the morphosyntactic correlation between the inanimate semantic type, the neuter gender and the *ι*-neuter inflectional class, was to bring about such distinctive inflectional innovations as the development of the so-called agglutinative inflection in Cappadocian (KARATSAREAS 2011). In this light, it would not be an exaggeration to suggest that neuter heteroclisis is perhaps the earliest attested manifestation of the larger-scale tendency for nouns in AMGr to become more like neuters in terms of their morphology and syntax.

7. Conclusions

Neuter heteroclisis started to develop after the stem final *-ι* of genitive forms of *ι*-neuter nouns such as *παιδί-ου* and *παιδί-ων* was taken to be part of the inflectional ending, giving rise to the novel singular ending *-ίου* and plural ending *-ίων* that were identifying of the *ι*-neuter inflectional class. At its earliest stages of development, neuter heteroclisis was employed as a repair strategy to form the genitive singular and plural of proparoxytone *οζ*-masculine and *ο*-neuter nouns, and the genitive plural of parasyllabic *α*-feminine nouns that presented a significant degree of uncertainty as to stress placement due to the clash between the inherited, Ancient Greek rule of stress movement and the later MGr tendency for columnar stress. Heteroclitic forms were built with the novel *ι*-neuter endings, the stress of which was stable and thus offered an alternative that helped overcome stress uncertainty. From that source, neuter heteroclisis was extended to other noun types that presented other structural difficulties such as the paroxytone *οζ*-masculine and *ηζ*-masculine nouns whose genitive singular came to be expressed by a zero exponent due to phonological reasons, causing a break in diagrammaticity when compared to the nominative singular that was expressed by overt, and therefore morphologically more complex, material. In other cases, neuter heteroclisis was used as an inflectional uniformisation mechanism as in the case of Pontic, in which nearly all neuter nouns form their genitive singular and plural with the *ι*-neuter endings *-ι(ου)* and *-ίων*. These developments had major implications

for the organisation of nouns into specific inflectional classes and, by extension, specific genders in AMGr as, in acquiring heteroclitic forms, large numbers of nouns were found to belong to two inflectional classes and to two genders simultaneously, one of which was always the neuter gender and the *ι*-neuter inflectional class. In this way, heteroclitic nouns became morphologically associated with this gender and inflectional class, an association which was stronger in inanimate nouns that were already associated with the neuter by virtue of their meaning. Neuter heteroclitis therefore strengthened the correlation between the inanimate semantic type, the neuter gender and the *ι*-neuter inflectional class, which acted as the catalyst in bringing about other, more extensive developments that affected the morphosyntax of nouns in AMGr. In light of its occurrence in dialects belonging both to the AMGr and NGr group, neuter heteroclitis figures as an innovation that goes back to a time before the split of the two dialect groups and is therefore one of the earliest attested manifestations of the tendency to render nouns more neuter-like with respect to their morphosyntax that characterises all the modern AMGr dialects.

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