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**Matter versus pattern borrowing in compounding:
Evidence from the Asia Minor Greek dialectal variety**

Abstract

This paper deals with issues of matter and pattern borrowing as applied to compound formations in four Asia Minor Greek varieties, Aivaliot, Cappadocian, Phrasiot and Pontic, which have been in contact with the typologically and genetically different Turkish. While Phrasiot has been impoverished of Greek-based compound structures due to an extensive Turkish influence, Aivaliot, Pontic, and to a lesser extent Cappadocian, show a wealth of items that are created on the basis of Greek patterns containing right-hand inflection, a compulsory compound-internal marker, and a combination of native and foreign constituents reanalyzed as stems. Assuming that Turkish compounds are phrasal, it is suggested that Greek compounding resists change, since the native compound morphology strongly constrains the adoption of a Turkish compound structure which is built in syntax. More specifically, it is proposed that in a contact situation, it is particularly difficult for a pattern to be transferred from one language to another if it presupposes changing of grammatical domain, that is, shifting from morphology (Greek compounding) to syntax (Turkish compounding). The article also discusses a number of formations in Phrasiot, where a N N phrasal compounding pattern seems to be selectively borrowed from Turkish. Refining the previous claim, it is further proposed that a transfer implying a passage from one grammatical domain to another could become possible in heavy contact situations if one basic condition is fulfilled: that the innovative pattern is allowed by the native properties of the recipient language. As a matter of fact, N N structures are not unknown in the Greek language, which has used them in specific contexts in several periods of its long history.

Keywords compounding, matter borrowing, pattern borrowing, Asia Minor Greek, Aivaliot, Cappadocian, Phrasiot, Pontic.

1 Object of investigation: assumptions and premises

Lexical borrowing is generally identified as the commonest and most frequent type of transfer in contact situations (Haspelmath 2009), while structure is generally accepted to be far less amenable to adoption (see, among others, Lepschy & Tossi 2006; Bowerman 2008; Gardani 2008, 2012; Gardani et al. 2015; Lucas 2012; Thomason forthcoming). Admittedly, structural transfer occurs in situations of heavy contact (see, among others, Thomason & Kaufmann 1988), and it is commonly acknowledged that cross-linguistically borrowing is much more frequent between systems showing structural similarities (Myers-Scotton 2002; Aikhenvald 2007; Matras

2009; Seifart 2015). By taking a somehow extreme position, a number of linguists, as for instance, Field (2002), claim that structural borrowing is feasible if the two languages in contact are typologically similar, a view that can be traced back to Meillet (1921:82).

As far as morphology is concerned, the study of contact-induced morphological change encompasses not only lexical, but also grammatical material related to addition, replacement or loss of morphological categories and/or morphological structures (Gardani 2008, 2012, 2018, 2020b; Gardani et al. 2015; Ralli 2012a, 2012b, 2016b; Karatsareas 2016), grammatical material being borrowed with or without the concomitant transfer of lexicon or morphemic material (see also Winford 2003). Therefore, a crucial question is whether all kinds of morphological structures can be borrowed or only a certain type of them. Moreover, if morphological structures are borrowed selectively, one needs to know how they are delimited and what morphemic elements can be transferred with them.

In the existing literature on contact morphology, derivation and inflection have received the bulk of the attention (see, among others, Gardani 2008; Gardani et al. 2015), but little has been said about the transfer of compounds (though see Gardani 2018, for an exception). It is not clear, for instance, what can be transferred as compound material or compound patterns, and it becomes a challenge to build general arguments on the aspects of compounding that could be subject to adoption. In fact, compounding constitutes a particularly interesting case since it may involve not only matter borrowing but also pattern, i.e., structural borrowing (in Sakel's 2007 terminology; cf. Gardani 2020a).

In this paper, I will investigate whether structure or structural elements of compounding can be borrowed and under which conditions pattern borrowing is feasible. To this purpose, I will examine compounding in four Asia Minor Greek (hereafter AMG) dialects,¹ which had been in contact with the typologically and genetically different Turkish: Aivaliot, spoken once in the Kydonies area (commonly called Aivali) of the North-Western Aegean coast of Turkey (Sakkaris 1920, 1940; Ralli 2017), Pontic, spoken in the Black Sea area (Oikonomidis 1958; Papadopoulos 1955, 1958), Cappadocian and Phrasiot (Dawkins 1916; Janse 2019b; Karatsareas 2011; Papastefanou & Karakelidou 2012; Bağrıaçık 2018), located in central Turkey. The choice of these dialects is

¹ In this article, the term Asia Minor Greek designates the Greek varieties spoken in the geographic area of Asia Minor. In the literature (see, among others, Karatsareas 2011, Revithiadou et al 2016, etc.), the term often refers to Pontic, Cappadocian, Phrasiot and Silliot, following a tradition established by Dawkins' (1916) seminal work. However, as demonstrated by a number of recent articles (see Koutsoukos & Pantelidis to appear, Markopoulos to appear, and Ralli (to appear), some other varieties located in Asia Minor can be named as such, as for instance, Bithynian, Smyrniot and Aivaliot, since, on the one hand, they display a number of features which diverge from those of the Modern Greek dialects found in the Greek mainland and the islands, and, on the other hand, they share a considerable number of properties with Pontic and Cappadocian. In fact, Manolessou (2019) distinguishes the following groups of Asia Minor Greek dialects: the isolated inner Asia Minor ones (Pontic, Cappadocian, Phrasiot and Silliot), the varieties with continuous presence in Asia Minor since ancient times but in contact with neighboring mainland Greek ones (Bithynian), those with possible presence in Asia Minor since ancient times but strongly infused with immigration from the Aegean islands (Aivaliot, Smyrniot, Moschonisiot), and finally the varieties reaching Asia Minor from a specific area at a specific time (Livissiot, Propontis Tsakonian).

due to the abundance of data from written sources and the oral corpora stored in the Laboratory of Modern Greek Dialects (LMGD) of the University of Patras (<http://www.lmgd.philology.upatras.gr>). The four dialects were spoken in the Asia Minor peninsula before 1922-1924 (see Map 1), that is, before the end of the war between Greece and Turkey, and the subsequent exchange of populations between Christians and Muslims following the Lausanne treaty in July 1923. The Turkish influence on Pontic and Aivaliot dates from the fifteenth and sixteenth century AD respectively, whereas Cappadocian and Pharasiot had been under Turkish pressure since the eleventh century AD, Pharasiot being grammatically and lexically situated between Cappadocian and Pontic (Bağrıaçık et al. 2015; Bağrıaçık 2018). Today, the four dialects are spoken in dialectal enclaves in Greece by first- and second-generation refugees, Aivaliot speakers mainly living on the Aegean island of Lesbos (Ralli 2016b, 2019). Interestingly, Pontic is still spoken by Muslim Pontians in the Black Sea area, near Trabzon (the language is also called Rumeic, see, among others, Mackridge 1990; Sitaridou 2013, 2014), or in Georgia and the Ukraine (Dawkins 1937; Berikashvili 2017), where first-generation refugees fled at the beginning of the twentieth century to avoid Ottoman persecutions.

What is particularly interesting in the contact situation involving Greek² and Turkish is that the languages are not typologically similar, so borrowing cannot be supposed to be facilitated by the morphological congruence of the two systems. The question which arises then is what is the mechanism that is activated in order to make diffusion possible between typologically incompatible systems. For instance, it would be interesting to examine whether morphotactic transparency and morphological salience play a decisive role in language interference.

It is known that in cases of long-lasting contact, interference usually brings about a situation in which borrowed items and structures co-exist and compete with the native ones leading to variation and change (lexical/grammatical parallelism, in terms of Aikhenvald 2007). Thus, another important issue for investigation concerns the rivalry between native and non-native morphological categories and patterns, and how this rivalry has an impact on increasing or decreasing the extent of borrowing.

The next sections of the paper are structured as follows: firstly, I give a brief description of the main characteristics of compounding in both Greek (Sect. 2.1) and Turkish (Sect. 2.2), to highlight differences but also possible similarities. Sect. 3 provides a detailed picture of compounds influenced by Turkish in Pontic, Cappadocian, and Aivaliot, while Sect. 4 deals with a number of constructions in Pharasiot, where the dialect seems to have selectively borrowed a Turkish pattern. The paper concludes with a summary of the findings and the bibliography.

2 Compounding

Compounding is generally seen as a process creating a new lexeme by joining two lexemes (Bauer 2003). However, among linguists, there is no overall agreement on the definition of a compound, the classification of

² In this article, Greek designates Modern Greek, while the term Ancient Greek is reserved for the language spoken before the Hellenistic period (ca. third century BC – third century AD).

compounds, as well as on whether compounding constitutes a morphological or a syntactic process (see, among others, Lieber & Štekauer 2009, Bauer 2017 for relevant discussion). According to Ralli (2013b), compounds can be morphologically or syntactically built, depending on the language one deals with, and the means that a language provides for creating its compound structures. For Ralli, compounds that involve lexemes smaller than words (e.g. stems) and are not accessible to syntactic operations (e.g. agreement between internal constituents or insertion of elements disrupting the structural internal cohesion) are morphological formations. In contrast, compounds which are partially subject to certain syntactic operations can be considered to be built in syntax, although they diverge from phrases in that they are not freely accessible to syntax. Therefore, compounding can be seen as an interface phenomenon which cuts across morphology and syntax.

2.1 Greek compounding

Assuming that morphology and syntax are different grammatical domains, Ralli (2007, 2009, 2013a) has shown that typical Greek compounds are created in morphology, the status of which is defined on the basis of the following phonological, morphological, syntactic and semantic criteria:

- (a) Greek compounds are phonological words, in that they display a single stress, which most often falls on a syllable different from the stressed syllables of the two main constituents when used as independent words (e.g. *xartókuto*³ ‘paper box’ < *xart(i)* ‘paper’ *kut(i)* ‘box’).
- (b) Compounds belonging to nominal, adjectival and verbal categories are always inflected at the right periphery (inflection is compulsory in Greek) and their inflectional ending can be different from that of the second constituent when used as an autonomous word (cf. the inflectional ending *-o* of *xartókut-o* ‘paper box’ vs. *-ø* of *kutí* ‘box’).⁴
- (c) With few exceptions where the first constituent is an uninflected adverb (e.g. *ksanakáno* ‘redo, make again’ < *ksaná* ‘again’ *káno* ‘make/do’), the first member of Greek compounds is a stem, that is, a word stripped of its inflectional ending (consider again *xart-* in *xartókuto*, while the full word form is *xartí*).
- (d) In their vast majority, Greek compounds contain a linking element *-o*⁵ (analyzed by Ralli 2008 as a compound marker), which links the two lexemes together, and its presence depends on the category of the first constituent: *-o-* is present if the first constituent is a stem but absent if it is a word. See, for instance, *ksanakáno* (*ksaná* is an uninflected adverbial word). The presence of the linking element also depends on the initial vowel of the second constituent: while it is there in e.g. *xart-ó-kuto*, it may not show up if this vowel is stronger (e.g. an [a]) on the

³ The Greek data will be presented in a broad phonological transcription. Stress and gender will be noted only when they are relevant to the argumentation, and the strings of constituents that do not participate in the compounding process will be included in parentheses. For reasons of clarity, the compound constituents are often divided by a hyphen.

⁴ See Ralli (2005) for the segmentation and analysis of the Greek inflectional endings.

⁵ *-o-* is a semantically empty element which participates in the process of compounding. As shown by Anastassiadi-Symeonidi (1983) and Ralli & Raftopoulou (1999), *-o-* originates from an Ancient Greek thematic vowel, which has already become a compound marker in the Hellenistic period.

vowel hierarchy of Greek phonology (see Chatzidakis 1905-1907 and Kaisse 1982 for details on this hierarchy), such as for example in *aksiayápitos* ‘worth loving’ (< *áksi(os)* ‘worth’ *ayapítos* ‘loving’).

(e) Greek compounds are not accessible to syntax and their internal cohesion cannot be broken by the insertion of other elements. They all obey the lexical integrity hypothesis (see, among others, Lieber & Scalise 2006) and display units (stems and a compound marker) and properties (single stress and only one inflectional ending) which are different from those usually seen in phrasal formations. Compare, for instance, the compound *ayri-o-jíneko* and the noun phrase *áyria jinéka*. Both mean ‘wild woman’ and contain the same constituents, viz. the adjective of feminine gender *áyria* ‘wild’ and the feminine noun *jinéka* ‘woman’. However, they display significant differences: first, while in the noun phrase adjective and noun are fully inflected words, agreeing for gender (feminine)--each having its own inflectional ending and stress-- in the compound, the two constituents are stems, deprived of their inflectional endings. Second, the cohesion of the internal compound structure cannot be interrupted with the insertion of another element, as opposed to the noun phrase, where an adjective, like *meýáli*⁶ ‘big’, can be introduced between the adjective *áyria* and the noun *jinéka*. For an illustration, compare the ungrammatical compound **ayri-o-meýal-o-jíneko* with the grammatical phrase *áyria meýáli jinéka* ‘wild big woman’. Besides, in the compound, there is a compound marker *-o-* linking the two stems together and the new lexeme is neuter. Moreover, the formation shows a unique stress, placed on the compound marker, and only one inflectional ending at the right periphery, different from that of the second constituent when used as an autonomous word.

Compounding is particularly frequent in Greek and compounds belong to major grammatical categories (see (1)) and are all very productively built. With respect to their internal constituent relations, compounds can be coordinative (1f-h), attributive (1d,i) or subordinative (1a,b,c,e, see Scalise & Bisetto 2009 for relevant classification). On formal grounds, they combine stems with stems ([stem stem] compounds (1a,d,g,h,i)) or stems with words ([stem word] formations (1b,c,e,f)), the distinction of which is based on the form of the inflectional ending of the compound as a whole and/or on the place of stress: compounds which bear a different stress and ending from those of the second constituent are defined as [stem stem] ones, contrary to compounds which share the same ending and place of stress with the second constituent and are, thus, defined as [stem word] constructions. Finally, Greek compounds are also distinguished into right-headed endocentric (1a-e) and exocentric ones (1i), the latter being particularly productive in Ancient Greek and the literary language.⁷

- | | | | | | | |
|-----|----|--------------------|----------------|---|----------|---------------|
| (1) | a. | [N N] _N | kúkl-ó-spít-o | < | kúkl(a) | spít(i) -INFL |
| | | | ‘doll’s house’ | | ‘doll’ | ‘house’ |
| | b. | [N N] _V | domat-o-saláta | < | domát(a) | saláta |
| | | | ‘tomato salad’ | | ‘tomato’ | ‘salad’ |

⁶ *meýáli* is the feminine form of the adjective *meýalos*.M *meýáli*.F *meýalo*.N, agreeing for gender with *jinéka*, which is also a feminine noun.

⁷ By convention, Greek nominal compounds are given in the nominative singular form and verbal ones in the first person singular of the present tense.

c.	[N V] _V	xart-o-péz-o ⁸	<	xart(i)	pézo
		‘play cards’		‘card’	‘play’
d.	[A N] _N	áγri-o-jínek-o	<	áγri(a)	jínék(a) -INFL
		‘wild woman’		‘wild’	‘woman’
e.	[Adv V] _V	krif-o-kitázo	<	krif(á)	kitázo
		‘look in secret’		‘secretly’	‘look’
f.	[V V] _V	aníγ-o-klíno	<	aníγ(o)	klíno
		‘open-close’		‘open’	‘close’
g.	[N N] _V	alat-o-píper-o	<	alát(i)	pipér(i) -INFL
		‘salt and pepper’		‘salt’	‘pepper’
h.	[A A] _A	kitrin-ó-mavr-os	<	kítrin(os)	mávr(os) -INFL
		‘yellow - black’		‘yellow’	‘black’
i.	[A N] _A	anixt-ó-mñal-os	<	anixt(ó)	mñal(ó) -INFL
		‘open-minded’		‘open’	‘mind’

All formations described in this subsection are considered to belong to prototypical compounds in Greek, which are one-word, both phonologically and morphologically, and inaccessible to syntax. However, in the last century, under the influence of English and French, a pattern of multi-word expressions, displaying an Adj N and N NGEN structure, has entered the language (e.g. *emfilios pólemos* ‘civil war’, *zóni asfalías* ‘security belt’ (lit. belt security.GEN)). These constructions contain two independent words, each of them bearing its own stress and inflection. Moreover, in the first case, there is agreement between the adjective and the noun, while there is genitive case assignment in the second case. Following these characteristics, they could be considered as simple noun phrases. However, they differ from the latter in that, among other things, they do not allow independent modification of their constituents (e.g. *[*polí emfilios*] *pólemos* ‘[very civil] war’ or *[*zóni [meyális asfalías]* ‘[big security] belt’). Ralli (2007, 2013a, 2013b) analyzes them as compounds that, contrary to prototypical morphological compounds, are built in syntax, and labels them ‘phrasal compounds’. It should be noted that nowadays, this phrasal compounding pattern is particularly productive in the formation of scientific terms in Greek (e.g. in the specific jargons of medicine and informatics), but it is rare in everyday language.

2.2 Turkish compounding

Turkish is relatively poor in compound structures as compared to Greek, in that its compounds are mainly N N endocentric and right-headed ones, such as the following (see Kornfilt 1997, Göksel 2009, Göksel & Kerslake 2005, Göksel & Haznedar 2008, among others):

⁸ See Ralli (2013a) for a detailed account of [stem stem] and [stem word] compounds.

- (2) a. ev çatı-sı
 ‘house roof’
 b. kitap sayfa-sı
 ‘book page’
 c. kapı kol-u
 ‘doorknob’ (lit. door handle)

Turkish compounds combine full word forms and their structure is often followed by a compound marker $-(s)I$,⁹ originating from the third person possessive suffix of genitive possessive constructions. This $-sI$ does not mark possession, as argued by van Schaaik (2002) and Göksel (2009), although it retains some structural affinity with the possessive marker: for example, they are both closing suffixes (see Göksel 2009 for details). Contrary to the compulsory character of the Greek $-o-$, as in *σιδήρ-ό-καστρο* ‘iron castle’, the Turkish compound marker $-(s)I$ does not appear in all compounds, e.g. in the synonymous *demir-hisar*. Nevertheless, as an anonymous reviewer has suggested, children acquire the suffixless type of compounds earlier than that with $-(s)I$ (see Ketrez 2017 for details), which has the superficial form of a phrase, that is, contains a marker which looks like the phrase-final possessive one. Thus, due to the age of acquisition effect, the type without $-(s)I$ could be considered as more basic than that with $-(s)I$. On the basis of these properties, Turkish compounds differ from the Greek ones, which belong to all major grammatical categories, involve constituents drawn from all categories, combine stems or stems and words, and have a compound internal marker, linking the two constituents together.

Many researchers (Kornfilt 1986; Yükseker 1987, 1998; Uygun 2009; Gürer 2010; Ralli 2013b; Bağrıaçık & Ralli 2013, 2015; Trips & Kornfilt 2015) have proposed that Turkish compounds are mainly phrasal items, that is, they are syntactically-built formations, for the following reasons. First, their stress pattern is similar to that of phrases, as argued by Kamali & Ikizoglu (2015):

- (3) ((gemi)_ω (halat-i)_ω)_ϕ
 ship rope-CM
 ‘ship rope’

Second, they display a certain visibility to syntactic operations. For instance, both the head and the non-head of an example like (2a) can be modified separately, as in (4a-b), while some compounds can undergo insertion of a suffix, between the right-hand constituent and the compound marker $-(s)I$, as in (4c):

- (4) a. eski [ev çatı-sı]
 old [house roof-CM]
 ‘old roof of some house’

⁹ [s] surfaces only when the second constituent ends with a vowel, and /I/ is subject to vowel harmony, surfacing as [i]/[u].

- b. [eski ev] çatı-sı
 [old house] roof-CM
 ‘roof of an old house’
- c. ev çatı-lar-ı
 house roof-PL-CM
 ‘house roofs’

Moreover, coordination can be hosted in both the head and the non-head positions, as in (5a,b), respectively.¹⁰

- (5) a. ülke birliđ-i ve/ile beraberliđ-i
 country unity-CM and solidarity-CM
 ‘national unity and solidarity’
- b. kedi ve köpek mama-sı
 cat and dog food-CM
 ‘cat and dog food’

However, as shown by Göksel (2009), the two types of constructions, viz. compounds and possessive phrases, are not identical. For instance, scrambling of the constituents is not allowed in N N-*s*/I compounds (6a) whereas it is permitted in the possessive constructions (6b):

- (6) a. *oda-sı yemek
 room-CM food
 ‘dining room’
- versus*
- b. oda-sı Çađla-nın
 room-POSS.3SG Çađla-GEN.3SG
 ‘Çađla’s room’

Similarly, the head of the compound cannot be modified by a functional element, such as an indefinite article or a quantifier (7b):

¹⁰ The examples (4-7) are drawn from Bağrıaçık, Göksel and Ralli (2018).

- (7) a. bir/her dükkān vitrin-i
 a/every shop window-CM
- versus*
- b. *dükkan bir/her vitrin-i
 shop a/every window-CM
 ‘a/every shop window’

Reviewing all properties of Turkish compounds and their affinities with phrases is beyond the aim of the current article. However, following Ralli’s division into morphological and syntactic compounds on the basis of syntactic (in)accessibility, Turkish compounds seem to be built in syntax, differing from the Greek morphologically created constructions, in that the latter bear a structure opaque to syntactic operations.

3 Compounding in Asia Minor Greek dialects

Compounding in AMG dialects basically follows the Greek pattern, in that it displays all properties identified for Greek in Sect. 2.1. For instance, the two compound constituents are linked together with the Greek compound marker *-o-* (or *-u-* in the unstressed position, depending on the dialect)¹¹, and all compounds end with a native Greek inflectional suffix marking case and number, which may be different from that of the second constituent when taken in isolation.

It is worth noting that AMG shows extensive lexical borrowing: many formations involve Turkish lexemes at the left (8) or the right side (9) of compounds, while in other formations both constituents are of Turkish origin (10).¹²

(8) Compounds with a Turkish first constituent

a. Aivaliot

xabar-u-lóγ-us < haber_{Tr}-CM- loγ_{Aiv} - INFL_{Aiv}
 ‘big harmless insect’ < ‘news’ ‘who says’
 lit. who announces news

¹¹ In Aivaliot as well as in all Northern Greek dialectal varieties, unstressed /o/ is raised to [u], cf. Standard Modern Greek *áloyo* ‘horse’ and Aivaliot *áluγy* (Chatzidakis 1905-1907). However, vowel raising is also observed in some sub-varieties of Cappadocian as well as in Phrasiot, at the unstressed word final position.

¹² The data are drawn from Dawkins (1916), Papadopoulos (1958), Oikonomidis (1958), Andriotis (1948), Sakkaris (1940) and Ralli (2017).

b. Cappadocian

zeitun-u-alímat-a < zeytin_{Tr} -CM- álima_{Cap} - INFL_{Cap}
 ‘olive ointments’ < ‘olive’ ‘ointment’

c. Pontic

sokak-ó-skil-on < sokak_{Tr} -CM- skil_{Pon} - INFL_{Pon}
 ‘street dog’ < ‘street’ ‘dog’

(9) Compounds with a Turkish second constituent

a. Aivaliot

arxud-u-maxaláð-is < ár_{xud}(as)_{Aiv} -CM- mahalle_{Tr} - INFL_{Aiv}
 ‘rich neighborhoods’ < ‘rich man’ ‘neighborhood’

b. Cappadocian

psom-u-poxjǎ-s < psom(i)_{Cap} -CM- bohça_{Tr} - INFL_{Cap}
 ‘napkin for bread’ < ‘bread’ ‘packing cloth’

c. Pontic

kreat-o-surv-ä < kréa(s)_{Pon} -CM- çorba_{Tr} - INFL_{Pon}
 ‘meat soups’ < ‘meat’ ‘soup’

(10) Compounds with two Turkish constituents

a. Aivaliot

kazmað-u-sápl-u < kazma_{Tr} -CM- sapl(ık)_{Tr} - INFL_{Aiv}
 ‘peduncle handle’ < ‘hoe’ ‘handle’

b. Cappadocian

tsaxmax-u-fitíl-ja < çakmak_{Tr} -CM- fitil_{Tr} - INFL_{Cap}
 ‘lighter fuses’ < ‘lighter’ ‘fuse’

c. Pontic

printz-o-surv-ä < pirinç_{Tr} -CM- çorba_{Tr} - INFL_{Pon}
 ‘rice soups’ < ‘rice’ ‘soup’

These cases do not show transfer of any Turkish structural pattern (pattern borrowing), but only adoption of Turkish lexemes (matter borrowing), which are combined with the native ones in accordance with Greek compounding rules. Note, however, that the adoption of Turkish lexemes presupposes that they have acquired a stem status by a reanalysis procedure from words to stems, since Greek compound structures have the following idiosyncrasies (Ralli 2013a):

many Turkish loan nouns (e.g., the plural of the Aivaliot masculine noun *muxtár-ð-is* ‘elected officers of communities in the Ottoman Empire < Tr *muhtar*, Ralli 2017).¹⁴

Note now that there is a sole example of compounding showing a clear Turkish pattern borrowing in Aivaliot, viz. *ajéra para-si* ‘without money’ (lit. wind money), which has the following properties:¹⁵

- (a) both lexeme constituents are full word forms, the Greek, *ajéra* ‘wind’ and the Turkish, *para* ‘money’, contrary to Greek compounds, where the first constituent is a stem if it belongs to an inflected category.
- (b) The main stress is on the left constituent, the Greek word *ajéra*, according to the Turkish stress pattern of compounds which displays a non-head main stress, as postulated by Göksel (2009). In contrast, in the innovative Greek compound-like phrases, those combining two independent words, of the *zóni afalías* ‘security belt’ type described in Sect. 2.1, each word carries its own stress (see Ralli 2013a, 2013b for details).
- (c) The formation does not contain an internal compound marker, as is the case in Greek, but it ends in *-si*, which corresponds to the Turkish marker *-sI* by simple phonological adaptation, since there is no central high vowel [u] in Aivaliot and no vowel harmony.

Admittedly, the occurrence of only one example cannot constitute conclusive evidence for a generalized pattern borrowing of Turkish compounding. Rather, I suggest that, sometime in the past, when the area of Aivali (formally Kydonies) was part of the Ottoman Empire, *ajéra para-si* was produced analogically to the Turkish compounding structures, but this pattern has not proliferated in Aivaliot morphology, probably because this structure was not compatible with the rest of compounding structures in the recipient language. In fact, Aivaliot speakers, who still use this fixed expression, are not able to fully analyze its internal structure: while they recognize *ajéra* ‘wind’ and *pará* ‘money’ as words of their everyday vocabulary (*pará* being a Turkish loan noun, integrated as *parás* in Greek with the appropriate *-s* Greek nominative ending), they cannot identify the presence and the exact function of the *-si* item.

Apart from this unique example, the absence of transfer of the Turkish compounding pattern in Aivaliot should not come by surprise, since, from the four AMG dialects under investigation, Aivaliot, as well as Pontic, had been the least affected by Turkish: although being part of the Ottoman Empire, the town of Aivali was inhabited only by Greek speaking people (Sakkaris 1920), while Pontus was the last Asia Minor area to be conquered by the Ottomans (fifteenth century), and Pontic is generally considered to be one of the most conservative dialects (Papadopoulos 1955; Drettas 1997; Manolessou & Pantelidis 2011). In contrast, the geographic areas of Cappadocia and Pharsa had been under Turkish dominance already in the eleventh century, and their varieties, Cappadocian and Pharsiot, had been heavily influenced by the Turkish language, showing Turkish features at all levels of grammar (Dawkins 1916; Karatsareas 2011, 2016; Janse 2004, 2019b; Bağrıaçık 2018). In the literature, heavy contact and bilingualism are usually considered to be among the main reasons for extensive borrowing (see, e.g., Thomason 2001; Matras 2009). Therefore, one could expect a Turkish effect on

¹⁴ For the role of stem allomorphy in Greek inflection, see Ralli (2005).

¹⁵ Note that the existence of *ajéra parasi* (or under the form of *aéra parasi*) is not exclusive to Aivaliot. It also occurs in Cypriot and in the Northern Greek dialect of the Greek Macedonian town of Serres. I owe to Io Manolessou this piece of information.

both Cappadocian and Phrasiot compounding. As a matter of fact, the small number of Greek-based compounds in these two varieties, which do not display all categories of Greek compounds but only some NN structures (see 8b, 9b, 10b and 16), might suggest a certain influence of Turkish compounding in Phrasiot and Cappadocian. However, this evidence is weak.

One may, thus, wonder why the structure of Greek-based compounding so strongly resists change,¹⁶ while other structural patterns have been borrowed, such as, for instance, agglutination in inflection in Cappadocian, which, in some cases, has replaced Greek fusional inflection (Dawkins 1916, Janse 2004, 2019a,b, Ralli 2009, Karatsareas 2011, 2016). Consider the following examples:

- (14) a. Greek
 jinek-ón
 woman.F-GEN.PL
 ‘women’
 b. Turkish
 hanım-lar-ın
 woman-PL-GEN
 c. Cappadocian
 nék-es-ju
 woman.F-PL-GEN

In (14a), the Greek inflectional ending *-on* is a portmanteau morpheme, encompassing the features of genitive and plural, while in Cappadocian (14c), there are distinct markers for plural and case, *-es-* and *-ju* respectively, set one after the other, similarly to the agglutination pattern shown by the Turkish inflection in (14b).

In an effort to provide an explanation for this discrepancy, Ralli (2016a) proposed that AMG compounding tends to preserve its native Greek structure because it is entirely different from Turkish (see Sect. 2): as demonstrated in Sect. 2.1 and Sect. 2.2, Greek compounds usually combine stems, while Turkish ones combine words; Greek compounds link their constituents with a compound marker *-o-*, situated in between them, while, in many Turkish occurrences, the equivalent marker *-sI* is placed at the end of the structure; more importantly, typical Greek compounds (one word ones) are entirely inaccessible to syntax, whereas Turkish compounds violate the Lexical Integrity Principle (for more details, see, among others, Bağrıaçık and Ralli 2013, 2015, Göksel 2015, Trips & Kornfilt 2015).

¹⁶ With the exception of Cappadocian and its parent Phrasiot and Silliot, where one-word compounds are not many, one-word compounds abound in all the other Asia Minor dialects. Note that the limited number of compounds is not a characteristic of inner AMG in general -inner AMG consisting of Cappadocian, Phrasiot, Silliot, and Pontic (Manolessou 2019)- since Pontic is also rich in compounds, as illustrated by the big number of occurrences found in Papadopoulou’s (1958) dictionary.

As opposed to compounding, inflection shows a certain correspondence in the two contact languages, where, despite the typological difference (fusional Greek versus agglutinative Turkish), inflection is linearly similar, in that the inflectional markers follow the base, one-by-one, if there is more than one suffix, such as in the following verbal types:

- (15) a. Greek
 káθi-s-a
 sit-PFV-PST.1SG
 ‘I sat’
 versus
 b. Turkish
 otur-du-m
 sit-PST-1SG
 ‘I sat’

In fact, the existence of more than one verbal inflectional suffix and their linear structure have led Philippaki-Warburton (1991) to propose that Greek inflection is not purely fusional but semi-agglutinative. Therefore, in a heavy contact situation, such as in Cappadocian, inflection is more prone to change than compounding, because the difference between the two languages in developing inflected forms is smaller than the difference in building compounds.

Moreover, assuming that morphology and syntax are autonomous grammatical domains (see Ralli 2013a), and since Greek compounds are built in morphology, while Turkish ones are created in syntax, the divergence between Greek and Turkish compounding refers to the organization of grammar. As such, it can be vital for allowing or forbidding major structural changes due to contact. Thus, I would like to claim that another factor for prohibiting the borrowing of a Turkish compounding pattern in Greek is the major change in shifting compounding from one grammatical domain to another, that is, shifting compounding from morphology to syntax.

4 Pattern borrowing in Phrasiot compounding?

Let us now focus on Phrasiot, where, besides a small number of occurrences of Greek-based compounds (16), there are constructions that seem to be situated in between compounds and phrases in that their structure is similar to that of noun phrases, at least superficially, but they also bear some morphological characteristics. Consider the examples in (17):¹⁷

¹⁷ Many examples in this section are drawn from the work by Bağrıaçık, Göksel & Ralli (2018).

- (16) viz-ó-pon-u¹⁸ < vizí pón-us
 [breast-CM-pain].N-NOM/ACC.SG breast.N.NOM/ACC.SG pain.M-NOM.SG
 ‘pain of breast’
- (17) a. zejtín-ú stavr-ós
 olive.N-GEN.SG cross.M-NOM.SG
 ‘cross made of olive wood’
 b. jorgan-ú xarái
 quilt.N-GEN.SG face.N.NOM.SG
 ‘quilt cover’
 c. pejgir-ú mamútsi
 horse.N-GEN.SG fly.N.NOM.SG
 ‘horse fly’

At a first glance, the constructions of (17) resemble phrases, phonologically and structurally, in that each lexeme constituent has its own stress and is a fully inflected word form, contrary to Greek compounds, which have only one stress, involve stem constituents and whose inflection is situated at the right-hand side. In addition, the non-head constituent of these Pharasiot formations ends in *-u* (17a-c), mirroring the inflectional ending of the genitive singular number of most Greek and Pharasiot masculine and neuter nouns, as shown in (18) and (19):¹⁹

- (18) Greek
 a. vun-ú
 mountain.N-GEN.SG
 ‘of the mountain’
 b. lay-ú
 rabbit.M-GEN.SG
 ‘man’s’
- (19) Pharasiot
 a. zejtín-ú
 olive.N-GEN.SG
 ‘of the olive’

¹⁸ The inflectional ending *-o* has become *-u* after a high vowel raising in unstressed word-final position. See also footnote 12.

¹⁹ In Standard Modern Greek, *-u* marks the genitive singular of masculine nouns in *-os* (e.g. *ánthrop-os* ‘man’ *anθróp-u* ‘man’s’) and that of neuter nouns in *-i* (e.g. *spíti* ‘house’, *spítj-ú* ‘of the house’) and *-o* (*vun-ó* ‘mountain’, *vun-ú* ‘of the mountain’). In Pharasiot, *-u* appears in the genitive case of the singular number of masculine nouns in *-os* (e.g. *ay-ós* ‘rabbit’, *ay-ú* ‘of the rabbit’) and has been generalized to all neuter nouns.

- b. ay-ú
 rabbit.M-GEN.SG
 ‘of the rabbit’

However, the genitive marker *-u-* in Greek (18) is not exactly the same as the *-u* in Phrasiot (19), for the following reasons:

(a) in Phrasiot, *-u* is the genitive singular marker of masculine nouns in *-os* (19b) but not of those ending in *-as* when used as independent words (20b-c). Curiously, formations containing masculine nouns in *-as* as a first constituent (20a) display an *-u-* instead of the expected zero marker:

- (20) a. γυjmað-ú koftéð-a
 ground.meat.M-GEN.SG meatball.M-NOM.PL
 ‘(type of) meatballs’
- versus*
- b. Singular
- | | | |
|-----|---------|--|
| NOM | γυjμά-s | |
| ACC | γυjμά-ø | |
| GEN | γυjμά-ø | |
- c. tu γυjμά i muruðía
 tu γυjμά-Ø the smell
 the.M.SG.GEN ground.meat.M-GEN.SG
 ‘the smell of the ground meat’

(b) *-u* is attached to a stem allomorph *Xð-*, employed in constructions of the (20a) type, whereas this allomorph does not appear in the singular when the word occurs autonomously (20b,c).²⁰

I conclude that the presence of *-u* on the left constituent makes Phrasiot structures like those of (17) differ from common noun phrases.

Another property that differentiates the Phrasiot formations from noun phrases is the ability to become bases of derived words (21a), similarly to what Greek compounds usually do (21b), due to their facility to accept derivational suffixes at their right-hand side, after being stripped of their inflectional ending (in Greek, derivation is stem-based, see Ralli 2005, 2013a):

- (21) a. Phrasiot

²⁰ See also Sect. 3 and example (13) for a case of stem allomorphy containing the *-ð-* formative.

širið-ú γavurmá-s	<i>versus</i>	[širið-ú γavurma]-lú-s ²¹
pork kavurma		[pork kavurma]-DER-NOM.SG
‘pork kavurma’		‘kavurma with pork’

b. Greek

xart-o-péz-o	<i>versus</i>	[xart-o-peks]-ía-s ²²
card-CM-play-1SG		[card-CM-play]-DER-GEN.SG
‘I play cards’		‘of the act of playing cards’

As Bağrıaçık (2018) and Bağrıaçık et al. (2018) have shown, no phrase in Phrasiot, or in Greek in general, admits derivation of any sort. This characteristic, together with the properties of phrasal accentuation and overt inflection on the constituents, may align the Phrasiot constructions in (17), (20a) and (21a) with syntactically-built genitive phrases. However, the possibility to undergo derivation as well as the peculiar marker *-u* of the left constituent render these formations different from common genitive phrases. Therefore, the question is whether they are not phrases, but types of compounds with phrasal properties. If they are compounds, the *-u* ending of the left constituent should not mark the genitive case, but is a rather invariable vowel and, as such, a possible candidate for being a compound marker.²³ In other words, the inflectional status of *-u-* has been reduced into that of a simple marker denoting the process of compounding. Since this change is functional, it can be considered as a case of exaptation, along the lines of Norde & Van de Velde (2016) and Gardani (2016).

At the same time, the Phrasiot formations diverge from Greek compounds as well because they allow an external modification of the head, which breaks the internal cohesion of the structure by inserting another item (22b), contrary to Greek compounds, which do not allow any insertion and behave like islands to internal modification (23):

(22) a. Phrasiot

yuval-ú	álima-Ø
water.buffalo.M-CM	butter.N-NOM.SG
‘buffalo-butter’	

²¹ *-lu* originates from the Turkish suffix *-lı* which attaches to nouns to form nouns and adjectives of a relational meaning (Göksel & Kerslake 2005, Kornfilt 1997). In Modern Greek dialects affected by Turkish, like for instance in Aivaliot, which do not display a systematic vowel harmony, the /l/ Turkish vowel is sometimes realized as [i] and sometimes as [u], without any particular phonological motivation.

²² The Greek suffix *-ia* is often attached to verbal stems to form deverbal nouns (Ralli 2005).

²³ An anonymous reviewer asks why from all morphological markers available in Phrasiot, *-u* is the one that assumes the role of a compound marker. A tentative answer could be that Phrasiot compounds have borrowed the Turkish N N compound pattern, where the first noun is a possessive modifier of the second, and possession in Greek is marked with the genitive on the modifier.

b. Phrasiot

yuval-ú	taz-ó	álima-Ø
water.buffalo.M-CM	fresh-NOM.SG	butter.N-NOM.SG
‘fresh buffalo-butter’		

(23) a. Greek

fistik-o-vútir-o
 peanut.N-CM-butter.N-NOM.SG
 ‘peanut butter’

b. Greek

*fistik-o-fresk-o-vútiro
 peanut-CM-fresh-CM-butter
 ‘peanut fresh butter’

As further shown by Bağrıaçık et al. (2018), another affinity of these Phrasiot constructions to phrasal formations, which differentiates them from Greek compounds considerably, is the possibility to have a limited coordination of two non-head constituents combined with an overt coordination conjunction. Compare the Phrasiot formation in (25a) and the ungrammatical Greek construction in (24a):

(24) Greek

*vamvak-o-ke-kapn-o-xóraf-o
 cotton-CM-and-tobacco-CM-field-NOM.SG
 ‘cotton and tobacco field’

from

vamvak-o-xóraf-o	kapn-o-xóraf-o
cotton-CM-field-NOM.SG	tobacco-CM-field-NOM.SG
‘cotton field’	‘tobacco field’

(25) Phrasiot

koč-ú če rov-ú tópus
 barley-CM and alfalfa-CM field
 ‘a field where barley and alfalfa are planted’

from

koč-ú	tópus	rov-ú	tópus
barley-CM	field	alfalfa-CM	field
‘field with barley’		‘field with alfalfa’	

So far the discussion has made clear that the Phrasiot formations under investigation have a peculiar status: they seem to be situated between phrases and compounds, for they share properties with both Greek compounds and genitive phrases, albeit there is no absolute similarity with either of them. On the one hand, they have limited accessibility to syntax, display phrasal accent, and their constituents are fully inflected word forms. These properties differentiate them from typical Greek compounds, which are not accessible to syntactic operations, are phonological words, and are made up of stems. On the other hand, the Phrasiot formations undergo derivation, like Greek compounds, and their left-hand constituent ends in an element which could be considered as a compound marker exapted from a genitive suffix (although it differs from the Greek compound marker, which derives from a thematic vowel, as shown by Anastasiadi-Symeonidi 1983 and Ralli & Raftopoulou 1999). Therefore, I believe that the Phrasiot formations are types of compounds which are not morphological, like the Greek ones, but phrasal, like the Turkish ones. In concordance with Bağrıaçık et al. (2018), I hypothesize that the origin of these peculiar Phrasiot formations lies in Turkish N N phrasal compounding: most likely, Phrasiot, under the pressure of dominant Turkish started replacing its native Greek-based compounding structure by a more Turkish-like one. Following the borrowing of a new N N compound structure, the genitive suffix *-u* of the left constituent was refunctionalized as a phrasal compound marker. However, this new structure is not entirely identical to the original Turkish source. The available written sources (Dawkins 1916; Papastefanou & Karakelidou 2012) and field data collected by Metin Bağrıaçık between 2013 and 2015 show that there are major differences between Phrasiot N N formations and Turkish compounds, as follows:

- (a) The Turkish compound marker *-sI* is completely absent from the Phrasiot formations;²⁴
- (b) the *-u* of the Phrasiot left-hand constituent may have become a phrasal compound marker, but, due to its provenance (i.e., the genitive suffix of the left constituent), it differs from the Turkish compound marker *-sI*, which originates from a third person possessive suffix situated at the right periphery of the construction;
- (c) the non-head of Turkish compounds can host phrases (26a), while this is not possible in Phrasiot (26b).

(26) a. Turkish

liseye yeni başlayan [ergen tavr-ı]
 high.school new start adolescent behavior-CM

‘adolescent-who-just-started-high-school-behavior’

(Kamali & İkizoğlu 2015, copied from Bağrıaçık et al. 2018)

b. Phrasiot

*	tu	čo	katěš	ywóses	o	nomatú	xáli	
	[[RelCl	tu	čo	kateš	ywoses	o	nomat]-u	xali]
	that	not	understand.3SG	languages	the.NOM.SG	man-CM	situation	

²⁴ As an anonymous reviewer has observed, this may be borrowing of the Turkish pattern without *-sI*.

‘[[the man who does not listen to reason] situation]’
 or ‘the situation of someone who does not listen to reason’

By distinguishing, in Johanson’s (1992, 1993) terms, between ‘global copying’ and ‘partial copying’, I consider the Turkish pattern borrowing in Phrasiot an instance of partial borrowing. In other words, the pattern is implemented selectively, with native material used for the integration of borrowed structures, as is the case with the Greek genitive suffix *-u* exapted into a compound marker.

This analysis was already given in Bağrıaçık et al. (2018). However, diverging from that, I would like to appeal to the criterion of the language-internal factor proposed by Thomason (2001, 2010), Winford (2010), Karatsareas (2011) and Andreou (2014), which tests whether a pattern can be transferred from a donor to a recipient language without the necessary mediation of lexical borrowing. This allows me to test the validity of the hypothesis of a selective pattern borrowing of Turkish compounding in Phrasiot. As a closer inspection of the history of Greek reveals, constructions similar to N N right-headed phrasal structures are attested in various periods of the Greek language and its dialects. In Ancient Greek, a genitive noun can both precede and follow the head noun; there is no “canonical” position for indefinite noun phrases (27) but the post-nominal position is more common (27a). In definite noun phrases, the “normal” position of the genitive attribute is between the article and the noun (28a) and secondarily after the noun (28b). The post-nominal position is rarer (28b), but gradually grows in frequency, until, from the Koine (Hellenistic) period onwards, it becomes the normal one. A pre-articular position (28c) was focused and emphatic already in Ancient Greek, and has remained so throughout the history of Greek (for a detailed account, see Manolissou 2000:ch.2 and Schwyzer 1950:89-137).

(27) Ancient Greek

a. ἔρκος ὀδόντων
 [erkos odontɔ:n]
 wall teeth.GEN
 ‘wall of teeth’

b. κισσοῦ στέφανος
 [kissu: stefanos]
 ivy.GEN wreath
 ‘wreath of ivy’

(28) Ancient Greek

a. ὁ τοῦ βασιλέως θρόνος
 [ho tou basileɔ:s thronos]
 DET.NOM DET.GEN king.GEN throne.NOM
 ‘the king’s throne’

b. ὁ θρόνος τοῦ βασιλέως

	[ho	thronos	tou	basileō:s]
	DET.NOM	throne.NOM	DET.GEN	king.GEN
	‘the king’s throne’			
c.	τοῦ	βασιλέως	ὁ	θρόνος
	[tou	basileō:s	ho	thronos]
	DET.GEN	king.GEN	DET.NOM	throne.NOM
	‘the king’s throne’			

Note that a genitive noun preceding the head noun is available in all periods of Greek, but its frequency diminishes after the ancient period. Today, it is most frequently found in texts of a lively-oral narrative character, in poetic texts, in fixed phrases and collocations, and under focus.

As it seems, the development of N N phrasal-compound-like formations in Phrasiot can be interpreted as having resulted from heavy contact with Turkish, but the system-internal factor of structural similarity has played a major role: this compounding pattern could be established because it matched the system’s properties of the recipient language, which possessed a similar structure in its phrasal system. Also, because of the properties of the recipient language, the non-matching features of the source language such as a compound marker at the right periphery of the construction were rejected. In other words, the development from N-GEN N phrases into N-CM-N phrasal compounds in Phrasiot may have been triggered by mainly system-external factors, but the recipient language interference has not only facilitated the process, serving as a catalyst to the change, but it has also contributed to shaping the final output.²⁵ In Sect. 3, I have claimed that a pattern would hardly be borrowed if it would imply a shift of grammatical domain. However, the Phrasiot data discussed in this section show that a transfer entailing a passage from one grammatical domain to another can be possible given the condition that the innovative pattern is allowed by the native properties of the recipient language. In assuming this, I align with the weak retentionist position put forward by Jakobson (1938:54), who had proposed that foreign structural elements could only enter a language if they comply with its own tendencies. I believe that before assuming a language-contact effect, the native structures of the recipient languages must be examined in detail.

5 Conclusions

In this article, I have investigated matter and pattern borrowing between two genetically and typologically different languages, Greek and Turkish, in relation with the interplay of endogenous and exogenous factors. My study has revealed that loan lexemes (matter borrowing) may participate in native compound structures with the necessary morpho-phonological changes. More specifically, I have shown that in the four Greek-based Asia Minor dialects Aivaliot, Cappadocian, Phrasiot and Pontic, the left-hand and/or the right-hand slots of Greek

²⁵ See Andreou (2014) for the interplay of endogenous and exogenous factors applied to the creation of left-headed compounds in the Greko variety of Italiot Greek.

compound patterns can be filled by Turkish lexemes which have been reanalyzed as stems and have undergone any necessary phonological change. In case that Turkish compounds are borrowed as lexical entities, they are used as morphologically opaque mono-morphemic items, being also reanalyzed as stems in order to accept Greek inflection.

I have suggested that the transfer of compound patterns from a source into a recipient system is not easy if compounds are built in different grammatical domains. However, it is not impossible, provided that these patterns are allowed by the structural properties of the recipient language. This is the case of the Phrasiot dialect which has been heavily influenced by Turkish: it shows a N N phrasal pattern, not unknown to Greek, reminiscent of Turkish phrasal compounds, while the Turkish compound marker *-sI* never appears in these structures.

In pursuing the research questions formulated in Sect. 1, I have proposed that, in heavy contact situations, the decisive factor making possible the diffusion of a pattern between typologically incompatible systems is the existence of a certain matching between relatively similar patterns in both the source and the recipient language. However, for pattern borrowing to occur, the items participating in the borrowed structure have to be morphologically transparent (speakers can identify their content and function). The Phrasiot N N compound-like structures offer a noteworthy illustration for this proposal: while the N N phrasal compounding pattern was borrowed from Turkish to Greek, the *-sI* compound marker was rejected as being unrecognizable. Instead, the Greek native genitive suffix *-u* assumed the role of a compound marker because it occupied a structurally internal slot, similarly to the native compound internal marker *-o-* (see Sect. 2.1). The lack of morphological transparency could also explain why in Aivaliot, the *ajéra para-si* example (Sect. 3) is the only case of a Turkish compound structure borrowed as such by the Aivaliot speakers.

Besides the importance of structural factors, in Sect. 3 I showed that the intense socio-political contact between Turkish and Cappadocian or Phrasiot led to an impoverishment of typical Greek compound structures in the two dialects, as opposed to the situation of the less affected by Turkish Aivaliot and Pontic, which kept intact both the extent of use and the structure of their native compounds. Finally, I have shown (Sect. 4) that the existence of a certain similarity between two rival structures may overcome the general structural incompatibility of the languages in contact, including the generation of a pattern in two different grammatical domains.

Abbreviations

I=first person, A=adjective, ACC=accusative, Aiv=Aivaliot, AMG=Asia Minor Greek, Cap=Cappadocian, CM=compound marker, DER=derivational suffix, DET=determiner, F=feminine, GEN=genitive, Gr=Greek, INFL=inflection, M=masculine, N=neuter, N=noun, NOM=nominative, PFV=perfective, PL=plural, Pon=Pontic, PST=past, RelCl=Relative Clause, SG=singular, Tr=Turkish, V=verb

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Map 1. Asia Minor before 1922 (copied from Karatsareas 2011:12)

