

Chapter 7

Copying compound structures: The case of Pharasiot Greek

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Unlike other Modern Greek dialects in which compounds are one-word structures, in Pharasiot Greek – an Asia Minor Greek dialect heavily influenced by Turkish – compounds are formed by two fully inflected words, where the left-hand constituent is marked with compound markers whose shape is conditioned morphologically. Based on structural similarities between compound structures in Pharasiot Greek and in Turkish, we claim that Pharasiot Greek compounding is selectively copied from Turkish. The compound marker role in Pharasiot Greek is assumed by what are originally genitive suffixes by identification of the genitive with the Turkish compound marker, which is exapted from a possessive suffix, attaching to right-hand constituent. We correlate certain structural differences between the two languages to the nature and the locus of the compound marker. Among these differences is the occurrence of phrasal constituents in the non-head position in Turkish and lack thereof in Pharasiot Greek. We show that the compound marker in Pharasiot Greek attaches to stems. As such, no phrasal constituent can be hosted in the position to which the compound marker attaches. In Turkish, on the other hand, since the compound marker attaches to the head, the non-head can easily host phrasal constituents. We test this correlation against Khalkha Mongolian, another Altaic language, in which, unlike Turkish, the compound marker attaches to the non-head. We show that similar to Pharasiot Greek, but unlike Turkish,



phrasal constituents cannot be hosted in the non-head position in Khalkha, verifying the correlation we proposed between the locus of the compound marker and the availability of phrasal non-heads.

1 Introduction

Despite the recent plethora of research on copying of morphological items (e.g., Johanson 1992; Gardani 2008; Seifart 2015a,b; Gardani et al. 2015 among many others), and the growing interest on structural copying (Bowerman 2008; Lepschy & Tosi 2006; Lucas 2012; Grimstad et al. 2014; Lohndal 2013; Aboh 2015; Thomason forthcoming), the question whether compounds are prone to borrowing or not is a topic which still awaits addressing, and copying of compounding has been noted only sporadically, and often as calques (cf. Ralli 2014). This seems legitimate as *a priori* it is not clear what can actually be copied as or in a compound since cross-linguistically compounds involve little or no overt functional material. More importantly, compounding cross-linguistically has an unclear status between syntax and morphology (Anderson 1992; Aronoff 1994; Di Sciullo 2005 among many others, see also Scalise & Vogel 2010: 4–5 for an overview). As such, it becomes a challenge to make general arguments on what aspects of a compound could be copied. Given the lack of an established cross-linguistic definition of compounds and a consensus on its locus of generation, rather than attempting to make general arguments about (constraints on) ‘compound copying’, a more fruitful approach would be to document cases of ‘possible compound copying’ between languages whose compound structures are relatively well-documented. This is exactly what the current paper aims at. We present a case study of a compound-structure in Phrasiot Greek (henceforth PhG), an Asia Minor Greek dialect which is on the verge of extinction. We show that compounds in PhG display properties of two typologically different language systems, i.e., Turkish (Altaic) and Greek (Indo-European).

As noted by Ralli (2013b), typical Hellenic¹ compounds involve two lexemes which are concatenated with a compound marker, *-o-*, occurring in between the two. These can be attributive, subordinative or coordinative compounds. Such compounds are usually inflected as single stems and are phonological words bearing single accent. Although some dialects of Modern Greek may not exhibit certain compound types that the others do, across all the modern dialects (1), as well as in older varieties (2), the fact that compounds are concatenations of two

¹ We refer to all diatopic and diachronic varieties of Modern Greek as Hellenic in this paper.

(or more) lexemes with the compound marker *-o-*, i.e., the [X-o-X] template, is constant.²

- (1) a. lemonóðendro (Modern Greek)
 lemon-o-ðendro
 lemon-CM-tree
 ‘lemon tree’
- b. ampelopérvolon (Cypriot Greek, Andreou 2014: 132)
 ampel-o-pervolon
 vine-CM-field
 ‘vineyard’
- c. čavdarópsomin (Pontic Greek, Papadopoulos 1961: 327)
 čavdar-o-psomin
 rye-CM-bread
 ‘rye bread’
- d. ðimunóspurus (Aivaliot Greek, Ralli 2016)
 ðimun-o-spurus
 demon-CM-seed
 ‘very smart person’
- (2) hoplitódromos (Ancient Greek, Ralli & Raftopoulou 1999: 398)
 hoplit-o-dromos
 hoplite-CM-race
 ‘Hoplitodromos, race of soldiers’

² If there is ever a structural head, it is on the right (cf. Ralli 2013b, see also Andreou 2014 for exocentric compounds and definition of head in these compounds). This, however, is not exceptionless. In Ancient Greek (i.a) as well as in Modern Greek dialect of Bovese (i.b) left-headed compounds are attested, albeit in a rather limited number in the latter (Andreou 2014):

- (i) a. hippopótamos (Ancient Greek)
 hipp-o-potamos
 horse-CM-river
 ‘hippopotamus’
- b. ššulófuro (Bovese Greek, Andreou 2014: 134)
 ššul-o-furo
 wood-CM-oven
 ‘wood for oven’

In PhG, however, this Hellenic compounding structure depicted above is absent.³ Instead, PhG compounds are productively formed as concatenations of two lexemes as fully inflected words, whereby the left-hand constituent, the non-head, is marked with a compound marker, *-u* or *-s*, depending on the gender of the noun (3), whose shape, but not distribution, mirrors that of genitive suffixes in the language (4):

- | | | | | | | | |
|-----|----|------------------|---------------|--|----|-------------------|--------------|
| (3) | a. | jorganú | xarái | | b. | matrákas | práða |
| | | jorgan- u | xarai | | | matraka- s | praða |
| | | quilt.N-CM | face.N.NOM.SG | | | frog.F-CM | leg.N.NOM.PL |
| | | ‘quilt cover’ | | | | ‘frog legs’ | |
-
- | | | | | | |
|-----|----|---------------------|-----------------|------------------|-------------------|
| (4) | a. | tu | čoçuxú | ta | γίða |
| | | tu | čoçux- u | ta | γίða |
| | | the.N.GEN.SG | child.N.GEN.SG | the.N.NOM/ACC.PL | goat.N.NOM/ACC.PL |
| | | ‘the child’s goats’ | | | |
-
- | | | | | | |
|--|----|----------------------|-----------------|------------------|-------------------|
| | b. | s | γræs | ta | γίða |
| | | s | γræs- s | ta | γίða |
| | | the.F.GEN.SG | beldam.F.GEN.SG | the.N.NOM/ACC.PL | goat.N.NOM/ACC.PL |
| | | ‘the beldam’s goats’ | | | |

Such concatenations as those in (3) can form subordinate and attributive compounds, and unlike all other Hellenic varieties, coordinative compounds cannot be formed in this way. The constituents in these compounds retain their own accents, thus causing the compound to behave as a phonological phrase in this respect. Besides, such compounds allow limited access to syntactic operations exerted on them, such as external modification of the head or coordination of the constituents. On the other hand, by undergoing derivation as single lexical items, or not allowing certain syntactic operations, such as scrambling or outbound anaphora, they behave as lexical items, hence they constitute an example of compounds as borderline cases between phrase-formation and word-formation.

We interpret the two facts about compounding in PhG, i.e., the lack of Hellenic compound structure [X-o-X] and (the emergence of) the productive subordinate

³ It should be stated at the outset that in Cappadocian Greek, a Modern Greek dialect closely related to PhG, Hellenic compounds are rather restricted. The findings and arguments in this paper may or may not be extended to Cappadocian Greek. Since we have not investigated compounding in this variety, we will not incorporate such discussion into the current paper.

or attributive compounds where the non-head is marked with the compound markers *-u* or *-s*, (indicated hereafter as N-GEN N, by referring to the similarity of the compound markers to genitive suffixes) as one of the many end-products of the heavy and long-lasting influence of Turkish on PhG. More specifically, we argue that the N-GEN N compound pattern is copied from Turkish and incorporated into PhG word formation by evoking native morphological elements. This is verified by a number of interesting common characteristics of Turkish N+N compounds which are marked at their right periphery by the compound marker *-sI*, which itself is *exapted* from a possessive marker. Since no overt possessive markers exist in PhG, the compound marker of Turkish is identified with the PhG genitive marker. In other words, the pattern borrowing has taken place only selectively.

This selective pattern-borrowing account leads to an interesting question: how much of a pattern can be borrowed between (the) two languages? Turkish is known to productively accommodate phrasal strings in the left-hand, i.e., the non-head position of a N+N-*sI* compound. If the compound pattern in PhG is indeed borrowed from Turkish, then should we also expect the PhG N-GEN N compound pattern to be able to accommodate phrasal non-heads? The expectation might be legitimate but it is not confirmed: we will show that nothing of a phrasal sort can be hosted in the non-head position of the PhG N-GEN N template, once again verifying that the pattern is only selectively-copied. What renders phrasal non-heads unavailable in this N-GEN N requires its own story: We will argue that the morphological affixes employed as compound markers in the N-GEN N template are *exapted* from native inflectional affixes. Affixes in PhG, as in all other Hellenic varieties, attach to bare stems. This is a native rule. Thus, no phrasal element, even when the head of the phrase left-aligns with the affix, is a good candidate for this affix-attachment. Hence, the tension between the borrowed pattern and native word-formation rules is resolved by favoring the latter. Thus we see that the pattern is borrowed from Turkish but is constrained with native word-formation rules. Then coordination or external modification facts pertinent to the compounds on the one hand and their peculiar atomic behavior on the other require invoking an analysis which can capture such ‘hybrid’ elements between syntax and morphology. Without following a strict adherence to any in this paper, we will review certain possible analyses that can capture the peculiarities of these N-GEN N compounds as well as their possible locus of generation.

In Section 2 we present a brief overview of Hellenic compounding. Section 3 is devoted to the discussion on compounding in PhG and its differences from Hel-

lenic compounding. Presenting certain similarities between PhG and Turkish in terms of their compound structures, Section 4 argues that the PhG compounding pattern is selectively copied from Turkish; however, native functional material is employed in the pattern. Section 5 delves into phrasal compounds in Turkish and lack thereof in PhG and argues that the lack of phrasal non-heads is epiphenomenal on the native compound markers employed in PhG. Section 6 raises some residual questions about the locus of N-GEN N compounding in PhG and provides tentative answers to these questions. Section 7 concludes.

2 Hellenic compounding

In a prototypical Hellenic compound, two lexemes are juxtaposed with a compound marker *-o-* interpolating between the two (Ralli 2008). The output, i.e., the compound, is a phonological word with a single stress (Nespor & Ralli 1994; 1996). The compound marker originates from an ancient thematic vowel, but became a compound marker already in the Hellenistic period (ca 3rd c. BCE – 3rd c. CE) (Anastasiadi-Symeonidi 1983; Ralli & Raftopoulou 1999; Ralli 2007; 2013b). At different periods of the language, the lexemes involved in compounding have been realized as roots or stems, yet at least in Modern Greek there is no difference between the two (cf. Ralli 2005: 23, Ralli 2013b: 8) and therefore, we will simply use the term ‘stem’ in the rest of the paper. A stem is a lexeme that cannot stand in a syntactic position on its own but can do so only when it is a word, i.e., when it bears (inherent or structural) inflectional material which can be overt or covert. The stems are inflected for gender, case and number, and they are assigned to distinct inflectional classes (ICs) (Ralli 2000; 2005). Such ICs are based on the presence of systematic stem allomorphy (for stem allomorphy see below) and the form of the entire set of fusional inflectional endings that are combined with the stems. In such a system, gender is a feature inherent to the stems, and nouns of the same gender value may inflect according to different paradigms or conversely, nouns of different gender values may inflect according to the same paradigm. An example of a stem as the representative of IC1 is given in Table 1 below.⁴

As shown in Table 1, the stem *anθrop-* carries the encyclopedic information, ‘meaning’, ‘gender’ and ‘IC’. In this case it is ‘masculine’ and it belongs to IC1. IC1 involves (masculine or feminine) nominals which decline according to the paradigm in Table 1. According to Ralli (2000), there are eight ICs (IC1–IC8) active

⁴ Henceforth, stems will be glossed with small capitals and word forms will be written in minuscule.

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Table 1: The declension of the stem ‘*anθrop-*’, ‘HUMAN’ (masculine) in IC1.

Singular	nominative		accusative		genitive	
	stem	inflection	stem	inflection	stem	inflection
	anθrop	-os	anθrop	-o	anθrop	-u
	HUMAN	-NOM.SG	HUMAN	-ACC.SG	HUMAN	-GEN.SG
	‘human’ (nom.)		‘human’ (acc.)		‘human’ (gen.)	
Plural	nominative		accusative		genitive	
	stem	inflection	stem	inflection	stem	inflection
	anθrop	-i	anθrop	-us	anθrop	-on
	HUMAN	-NOM.PL	HUMAN	-ACC.PL	HUMAN	-GEN.PL
	‘humans’ (nom.)		‘humans’ (acc.)		‘humans’ (gen.)	

in Modern Greek today. The number of ICs, the way they are structured and which nouns belong to which ICs vary vastly both diachronically and among different dialects; however, for all Modern Greek dialects, as far as we can tell, there are ICs and nouns are located in different ICs.

In a typical Hellenic compound, the non-head, i.e., the left hand constituent of a compound is obligatorily a stem (which is formulated as *Bare-Stem Constraint* by Ralli & Karasimos 2009). As for the head position, i.e., the right-hand position of the compound, it can either be occupied by another stem or a word. Hence, the structures in (5) are available in Modern Greek as compound structures:

- (5) a. [word [stem [stem STEM] -CM- [stem STEM]] -INFLECTION]
 b. [word [stem STEM] -CM- [word STEM-INFLECTION]]
 (Ralli 2013b: 79, ex. (9))

The structure in (5a) is exemplified as (6a) and the structure in (5b) is exemplified as (7a). The compound constituents in their word forms are presented in (6b–c) and (7b–c) respectively:⁵

⁵ In the following Modern Greek examples from this point onwards, we do not provide information about the gender of the stems, which is tangential to the current paper.

- (6) a. ανθρωπόμορφος
 ανθρωπ-ο-μορφ-ος
 HUMAN-CM-SHAPE-NOM.SG
 ‘anthropomorphic’
- b. άνθρωπος
 ανθρωπ-ος
 HUMAN-NOM.SG
 ‘human’
- c. μορφή
 μορφι-∅
 SHAPE-NOM.SG
 ‘shape’
- (7) a. ανθρωποθεϊσμός
 ανθρωπ-ο-θεϊσμος
 HUMAN-CM-THEISM.NOM.SG
 ‘anthropotheism’
- b. άνθρωπος
 ανθρωπ-ος
 HUMAN-NOM.SG
 ‘human’
- c. θεϊσμός
 θεϊσμ-ος
 THEISM-NOM.SG
 ‘theism’

Notice that as a reflex of the *Bare-Stem Constraint*, in both (6a) and (7a), the non-head is a stem (cf. the word forms in (6b) and (7b) respectively). The compounds in (6a) and (7a) differ, however, as to the shape of the head: in (6a), the head of the compound is realized by a stem. This is witnessed by the fact that the inflectional ending of the overall compound in (6a), i.e., *-os*, is different than the inflectional ending which the stem in head position would get in isolation (i.e., *-∅*, cf. (6c)). In other words, the compound stem in (6a) is assigned to a different IC than the head noun (i.e., *μορφ(i)* ‘shape’). Moreover, the stress of the overall compound is realized on a different syllable than when it falls on its constituents (cf. (6a) with (6b) and (6c)). This is formalized as the *Compound Specific Stress Rule* by Nespor & Ralli (1996), which operates on compounds where both constituents are stems, by assigning the stress to the antepenultimate syllable. Hence, the compound in (6a) has the templatic structure shown in (5a). In the compound in (7a), on the other hand, the head position is realized by a word-form, i.e., a lexeme with its own inflection. This is so since the inflectional ending of the compound (7a) and of the head word in isolation (7c) coincide; in other words, the compound in (7a) inherits its IC from its head. Moreover, the stress of the compound and the stress

of the head noun in isolation fall on the same syllable (cf. (7a) with (7c)). Hence the compound in (7a) is formed on the template in (5b).⁶

Another peculiar characteristic of Hellenic nouns, which is directly relevant to compound formation, is the phenomenon of stem allomorphy. In Hellenic varieties, while a certain allomorph of a stem undergoes certain affixation, another allomorph of the same lexeme can be employed in other affixation processes. To illustrate the case, the lexeme ‘body’ shows this allomorphy between *soma-* and *somat-*. While the former is employed in singular nominative and accusative forms, the latter is employed in singular genitive, as well as in all the plural forms (see Table 2). More relevant to our paper, the latter, i.e., *somat-* is also the one which undergoes derivation (8a), and can also be employed in certain compounds as a stem (8b, 8c):

Table 2: *soma-* ~ *somat-* (neuter) ‘BODY’ stem allomorphy in IC8

	singular		plural	
nominative	soma	-Ø	somat	-a
accusative	soma	-Ø	somat	-a
genitive	somat	-os	somat	-on

(8) a. somatíðio
 somat-iðí-o
 BODY-DER-NOM.SG
 ‘particle; corpuscle’

b. somatofilakas
 somat-o-filakas
 BODY-CM-GUARD.NOM.SG
 ‘bodyguard’

c. kiknosómatos
 kikn-o-somat-os
 SWAN-CM-BODY-NOM.SG
 ‘swan-bodied’

Note that in a few cases, the other stem, i.e., *soma-*, can also be employed in a compound (see 8d below). In this case, at first glance it is not clear whether the lexeme employed in the head position is the stem or the word form of the lexeme

⁶ The templates in (5) are not the only ones operative in Modern Greek, nor is the compound type depicted here, i.e., [X-o-X] the sole compound structure. The discussion of all the compound types in Modern Greek is well beyond the aims of the current paper. For these cases, the reader is referred to Ralli (2013b).

since their overt forms coincide when the word is in nominative case (cf. Table 2). The difference in the position of stress between the compound and the head noun in isolation, however, suggests that the form employed is a stem (cf. the stress on the compound in (8d) and the stress on the head constituent in isolation 8e):⁷

- | | | | | |
|-----|----|--|----|---|
| (8) | d. | xromósoma
xrom-o-soma-Ø
COLOR-CM-BODY-NOM.SG
'chromosome' | e. | sóma
soma-Ø
BODY-NOM.SG
'body' |
|-----|----|--|----|---|

The structures presented as templates in (5) are highly productive in standard Modern Greek and in most Modern Greek varieties, and the permutations allowed are the following: N+N, A+A, V+V, A+N, N+V, Adv+V which are exemplified in (9–14) respectively:

- | | | |
|------|-------------------|--|
| (9) | N+N (stem + word) | |
| | a. | anθropoθeizmós
anθrop-o-θeizmos
HUMAN-CM-THEISM.NOM.SG
'anthropotheism' |
| | b. | ánθropos
anθrop-os
HUMAN-NOM.SG
'human' |
| | c. | θeizmós
θeizm-os
THEISM-NOM.SG
'theism' |
| (10) | A+A (stem + stem) | |
| | a. | asprómavros
aspr-o-mavr-os
WHITE-CM-BLACK-NOM.SG
'black and white' |
| | b. | áspros
aspr-os
WHITE-NOM.SG
'white' |
| | c. | mávros
mavr-os
BLACK-NOM.SG
'black' |

⁷ If the compound head is a word, it always retains its own stress. See Ralli (1988), where the location of word stress in Modern Greek is morpho-phonologically accounted for.

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(11) V+V (stem + word)

a. anavosvíno
anav-o-svin-o
TURN.ON-CM-TURN.OFF-1SG
'I turn on and off'

b. anávo
anav-o
TURN.ON-1SG
'I turn on'

c. svíno
svin-o
TURN.ON-1SG
'I turn off'

(12) A+N (stem+word)

a. kalóyeros
kal-o-yer-os
GOOD-CM-OLD.MAN-NOM.SG
'monk'

b. kalós
kal-os
GOOD-NOM.SG
'good'

c. yéros
yer-os
OLD.MAN-NOM.SG
'old man'

(13) N+V (stem + word)

a. layokimáme
lay-o-kim-ame
HARE-CM-SLEEP-1SG
'I doze'

b. layós
lay-os
HARE-NOM.SG
'hare'

c. kimáme
kim-ame
SLEEP-1SG
'I sleep'

(14) Adv+V (stem + word)

a. krifokitázo
krif-o-kitaz-o
SECRET-CM-LOOK-1SG
'I peek'

b. krifá	c. kitázo
krif-a	kitaz-o
SECRET-ADV	LOOK-1SG
‘secretly’	‘I look’

The information we provided above concerning Hellenic compounding might be the tip of an iceberg to the interested reader. However, this information is sufficient for the purposes of the current paper. For a more detailed account of compounding in (Modern) Greek, we refer the reader to Ralli (2013b).

3 Compounding in Pharasiot Greek

The dialect of Pharasa, along with the dialects spoken in Cappadocia, Pontus and Silli, is an Asia Minor Greek dialect which was spoken in at least seven villages in the southeast Kayseri province and north of Adana province of modern-day Turkey, in the area known also as Pharasa (Dawkins 1916) until 1923. In the years following 1923, the PhG speaking population was relocated to a few villages in Northern Greece according to the population exchange that was enacted as a supplementary protocol to the Treaty of Lausanne signed in 1923. The exact number of speakers before the population exchange is difficult to state as the accounts pertinent to the population of Pharasa also include the Turkish-speaking Orthodox population of the region. Based on earlier accounts (Xenofanis 1896, 1905–1910; Sarantidis 1899; Kyrillos 1815; Dawkins 1916), Bağrıaçık (in preparation) estimates that the number of PhG speakers before the population exchange was around 2000. Today, the dialect is spoken by about 25 second generation refugees in a few villages of Northern Greece. The dialect has long been assigned an unclear status, such as being a sub-dialect of Pontic (cf. Dawkins 1916, Dawkins 1937: 27), which nevertheless has curious connections with the dialect of Cyprus (Dawkins 1940: 22). It is also often treated as a variant of Cappadocian (Anastasiadis 1976), justified mostly by its geographical proximity to Cappadocia. The growing interest in micro-comparative work on Greek dialects and work especially on PhG, however, reveals that PhG must have diverged at a much earlier time-period than Cappadocian and Pontic (Karatsareas 2011, Bağrıaçık in preparation). Similar to other Asia Minor Greek dialects, PhG has been isolated from the rest of the Greek speaking world possibly in the early Medieval Greek period, and it had been heavily influenced by (Old) Anatolian Turkish at all levels of grammar. The dialect was also influenced by the neighboring Armenian dialects, though mostly at the lexical level. Beside retentions or innovations common to

all Asia Minor Greek dialects, the dialect also exhibits remarkable differences from the rest of the Asia Minor Greek dialects at all levels of its grammar. Since the speakers of PhG have been living in Greece for the last 90 years, and are thus bilinguals in Standard Greek and PhG, the influence of Modern Greek is also observed in certain domains (see Bağrıaçık in preparation).

Of the numerous peculiar properties of PhG, one is the lack of prototypical Hellenic compounding depicted in section 2. The collections in the dialect both prior to the population exchange (e.g., de Lagarde 1886; Levidis 1892; Grégoire 1909; Dawkins 1916) or texts written in and on the dialect after the population exchange (e.g., Theodoridis 1960; 1964; 1966) contain no tokens of Hellenic-style compounding [X-o-X]. A recent dictionary of the dialect (Papastefanou & Karakelidou 2012) contains only a few instances of [X-o-X] compounds, which, however, seem to be borrowed from Modern Greek since they belong to medical or scientific jargons:

- (15) emoréja
 em-o-reja
 BLOOD-CM-BURST.F.NOM.SG
 ‘hemorrhaging’ (cf. Modern Greek, *emoréja*)

This, however, does not mean that compounding is missing altogether in the dialect. There is a productive N+N compound structure in which both the head, i.e., the right hand constituent, and the non-head, i.e., the left-hand constituent, are word forms.^{8,9}

⁸ Such examples abound in the dictionary by Papastefanou & Karakelidou (2012). However, the indication of stress in these compounds is arbitrary; sometimes it is shown only once, sometimes both are indicated and sometimes they are omitted altogether. We assume that this is either because PhG does not have a uniform orthographic convention, or the stress pattern was unknown to the authors.

⁹ There are also certain attributive A+N combinations (i), or N+N combinations (ii) as coordinate structures that are possible candidates for compounding. These structures, however, do not involve a compound marker and both constituents bear their own inflection and stress (see Bağrıaçık in preparation and Bağrıaçık et al. forthcoming for further details.):

- (i) traxariéris nomáts
 hairy.M.NOM.SG man.M.NOM.SG
 ‘ogre’
- (ii) ma tatá
 mother.F.NOM/ACC.SG father.M.NOM/ACC.SG
 ‘mother-father’

We will not discuss the structures in (i–ii) in the current paper.

However, the inflection of the non-head constituent varies according to the gender of the base that it attaches to. Similar to Modern Greek, PhG nouns, simplex or complex (i.e., compounds or derived words), are assigned to different ICs. While masculine and neutral nouns of various ICs are affixed with *-ú* (16a), feminine nouns of various ICs are affixed with *-s* (17a). These suffixes are also employed for expressing the genitive in masculine/neuter and feminine nouns respectively (cf. (18a) and (18b)):

- (16) a. *zejtinú álima*
zejtin-u alima-Ø
 OLIVE.N-CM OIL.N-NOM.SG
 ‘olive oil’
- b. *zejtín*
zejtin-Ø
 OLIVE.N-NOM.SG
 ‘olive’
- c. *álima*
alima-Ø
 OIL.N-NOM.SG
 ‘oil’
- (17) a. *matrákas práði*
matraka-s práði-Ø
 FROG.F-CM LEG.N-NOM.SG
 ‘frog leg’
- b. *matráka*
matraka-Ø
 FROG.F-NOM.SG
 ‘frog’
- c. *práði*
praði-Ø
 LEG.N-NOM.SG
 ‘leg’
- (18) a. *tu zejtinú o fajdás*
tu zejtin-u o fajda-s
 the.N.GEN.SG OLIVE.N-GEN.SG the.NOM.SG BENEFIT.M-NOM.SG
 ‘the benefit of the olive’
- b. *s matrakas ta ftálmæ*
s matraka-s ta ftalm-æ
 the.F.GEN.SG FROG.F-GEN.SG the.N.NOM/ACC.PL EYE.N-NOM/ACC.PL
 ‘the frog’s eyes’

Therefore, at first glance it might be stated that *-u* or *-s* are genitive markers in (16)–(17) similar to the case in (18), and the structures in (16)–(17) are thus not

compounds but indefinite/non-specific genitives. Below, we will provide detailed evidence for the fact that the structures in (16)–(17) are indeed compounds, behaving differently than the phrases in (18); however, for the time being, let us show that this view is in error by stating that the structure exemplified in (16)–(17) can also generate compounds where the constituents are not in a possession relation (19a). Moreover, attributive compounds (in the sense of Scalise & Bisetto 2009) can also be formed based on the same template (19b):

- (19) a. pejgirú mamútsi
 pejgir-u mamutsi-Ø
 HORSE.N-CM FLY.N-NOM.SG
 ‘horse fly’
- b. θalú tupéki
 θal-u tupeki-Ø
 STONE.N-CM MORTAR.N-NOM.SG
 ‘stone mortar’

Note that the genitive phrasal counterpart of (19a) in (20) does not show the semantic integrity that (19a) does; rather it refers to a discourse-salient entity:

- (20) tu pejgirú to mamútsi
 tu pejgir-u to mamutsi-Ø
 the.N.GEN.SG HORSE.N-CM the.N.NOM/ACC.SG FLY.N-NOM.SG
 ‘the fly of the horse’

Moreover, PhG genitive phrases in (18) and (20) clearly differ from the N-GEN N compound structures (16)–(17) by the fact that in a genitive phrase the genitive article is obligatory:

- (21) *(tu) zejtinú o/an fajdás
 *(tu) zejtin-u o/an fajda-s
 the.N.GEN.SG OLIVE.N-GEN.SG the.NOM.SG/a BENEFIT.M-NOM.SG
 ‘the/a benefit of the olive’

By not involving this genitive article, the structures in (16)–(17) and (19) diverge from genitive phrases.

More important evidence for the fact that structures built on the N-GEN N template are not genitive phrases comes from a group of masculine nouns which receive the *-u* suffix only when they are in the non-head position of a compound (22). When they are in a genitive phrase, the suffix marking the genitive is zero (Ø) (23):

- (22) $\gamma\upsilon\iota\upsilon\mu\alpha\delta\acute{\upsilon}$ $\text{kofte}\acute{\delta}\alpha$
 $\gamma\upsilon\iota\upsilon\mu\alpha\delta\text{-}u$ $\text{kofte}\delta\text{-}a$
 GROUND.MEAT.M-CM MEATBALL.M-NOM.PL
 ‘(a type of) meatballs’

- (23) tu $\gamma\upsilon\iota\upsilon\mu\acute{\alpha}$ i $\text{muru}\acute{\delta}\acute{\iota}\alpha$
 tu $\gamma\upsilon\iota\upsilon\mu\alpha\text{-}\emptyset$ i $\text{muru}\delta\acute{\iota}\alpha\text{-}\emptyset$
 the.M.GEN.SG GROUND.MEAT.M-GEN.SG the.F.NOM.SG SMELL.F-NOM.SG
 ‘the smell of the ground meat’

The difference in the stem choice in (22) and (23) is an instance of stem allomorphy in PhG as $\gamma\upsilon\iota\upsilon\mu\alpha\text{-} \sim \gamma\upsilon\iota\upsilon\mu\alpha\delta\text{-}$, identical to stem allomorphy in Modern Greek (cf. Section 2). It is the stem $\gamma\upsilon\iota\upsilon\mu\alpha\delta\text{-}$ which is employed in compounding. The same stem is also employed in plural inflection, while $\gamma\upsilon\iota\upsilon\mu\alpha\text{-}$ receives singular inflectional suffixes. This latter point is exemplified by another lexeme of the same IC, $zopa\text{-} \sim zopa\delta\text{-}$ ‘STOVE’ in Table 3 below:

Table 3: $zopa\text{-} \sim zopa\delta\text{-}$ (neuter) ‘STOVE’ stem allomorphy in PhG (corresponding to IC2 of Modern Greek)

	singular		plural	
nominative	$zopa$	$-s$	$zopa\delta$	$-i$
accusative	$zopa$	$-\emptyset$	$zopa\delta$	$-i$
genitive	$zopa$	$-\emptyset$	$zopa\delta$	$-i/iun$

If genuine genitive suffixes were employed when (masculine) nouns of IC2 are in the non-head position of a compound, then in (22) we would expect the zero genitive marker (\emptyset), and not $-u$, contrary to fact.¹⁰ Therefore, we argue that the compound structure N-GEN N is not a genitive phrase (see also below for more

¹⁰ There is another possible account for the $-u$ attaching to IC2 stems in PhG, which ultimately cannot be maintained:

Such IC2 stems can occur in the non-head position of a compound, not only in PhG but in Modern Greek or in other dialects as well. Consider (i) and (ii) which are from Modern Greek and Lesbian/Aivaliot respectively:

- | | |
|--|---|
| (i) $\text{kima}\delta\text{omixani}$
$\text{kima}\delta\text{-o-mixani}$
GROUND.MEAT-CM-machine
‘meat grinder’ | (ii) $\text{kima}\delta\text{umixani}$
$\text{kima}\delta\text{-u-mixani}$
GROUND.MEAT-CM-machine
‘meat grinder’ |
|--|---|

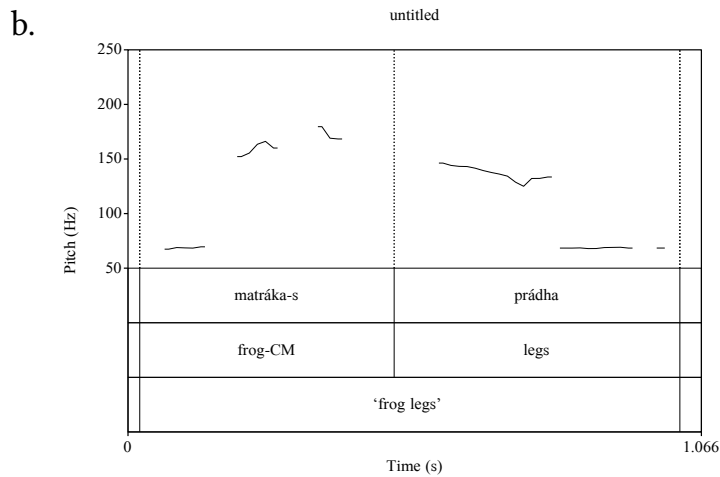
structural differences between the two). Concomitantly, the *-u* and *-s* suffixes are not genuine genitive suffixes in the template N-GEN N. This means that they are in fact compound markers marking the process of compounding in PhG, which are exapted from the genitive suffixes, where *exaptation* should be defined as an unpredictable and leap-like shift of the function of a specific morpheme (Norde & Van de Velde 2016: 8). This is another difference between Hellenic compounding and PhG compounding: while in the former the compound marker is exapted from an ancient thematic vowel (see Section 2), PhG compounds are marked by compound markers exapted from the genitive and are sensitive to the gender of the base they attach to.

Another salient difference between Hellenic compounding and PhG compounding lies in the stress. As was discussed in Section 2, Hellenic compounds are phonological words. The stress falls on the stressed syllable of the head if the lexeme occupying the head position is a word. Otherwise, the *Compound Specific Stress Rule* positions the stress on the antepenultimate syllable. In either case, though, the whole juxtaposition has single stress. In PhG compounds, on the other hand, both constituents retain their own stress, hence the whole concatenation acts as a phonological phrase. While the primary accent falls on the stressable syllable of the non-head, the head carries a secondary stress. Hence the stress pattern of PhG compounds resembles that of respective genitive phrases (if there is a corresponding genitive phrase). The figures in (24b) and (25b) show the resemblance of the stress patterns of compounds and genitive phrases respectively (where the leftmost constituent receives main stress):¹¹

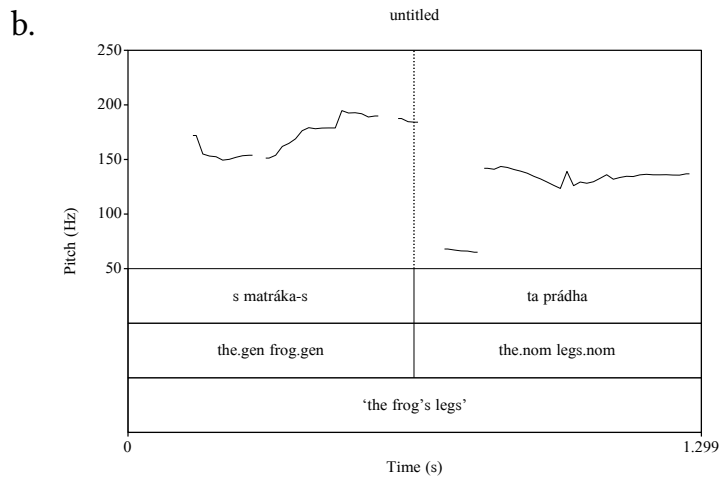
- (24) a. ((matrákas)_ω (práða)_ω)_φ
 matraka-s práða
 FROG-CM legs
 ‘frog legs’

The only difference between (i) and (ii) is the fact that in (ii), which is from Lesbian/Aivaliot, the compound marker is realized not as *-o-*, but as *-u-*. This, however, is only due to a phonological process in Northern Greek dialects, namely the raising of unstressed [o] to [u], cf. Chatzidakis (1905). In fact, such raising of unstressed [o] to [u] occurs in some villages of Pharsa, albeit not systematically, contrary to the case in Northern Greek dialects where the raising takes place across the board. Still, the *-u* attaching to IC2 stems in PhG (or to stems of any IC for that matter) might be argued not to be a genuine suffix exapted from the genitive, but to be underlyingly the compound marker [o], raised to [u]. This, however, cannot be maintained, since *-u* is always stressed (cf. (22)) and for [o] > [u] raising to take place *-u*, which, according to the scenario, is the hypothetical compound marker *-o-*, should have been unstressed.

¹¹ Hereafter, in order to avoid redundant morphemic glossing, we will not provide gender, case or number information in the examples when they do not directly affect the discussion.



- (25) a. ((s matrakas)_ω (ta prada)_ω)_φ
 s matraka-s ta prada
 the.GEN frog-GEN the legs
 'the frog's legs'



The affinity of compounds in PhG to genitive phrases is not only witnessed by the origin and the gender-sensitivity of the compound markers, and the phonological phrasehood of the compound. N-GEN N compounds also behave similar to genitive phrases in certain syntactic constructions. Such behavior again clearly sets them apart from Hellenic compounds which show no affinity with phrases.

Hellenic compounds are known not to allow any syntactic operation on their structure (Ralli 2007; 2013b); for example, the constituents in a Hellenic compound cannot be coordinated. Compare the ungrammatical coordinate structure in (26) to grammatical compounds in (27):

- (30) a. $\gamma uval\acute{u}$ $\check{c}erat\acute{u}$ $\check{c}e$ $pets\acute{i}$
 $\gamma uval-u$ $\check{c}eratu$ $\check{c}e$ $petsi$
 WATER.BUFFALO-CM horn and skin
 ‘water buffalo horn and skin’
- b. $\gamma uval\acute{u}$ $\check{c}erat\acute{u}$ c. $\gamma uval\acute{u}$ $pets\acute{i}$
 $\gamma uval-u$ $\check{c}eratu$ $\gamma uval-u$ $petsi$
 WATER.BUFFALO-CM horn WATER.BUFFALO-CM skin
 ‘water buffalo horn’ ‘water buffalo skin’
- (31) a. * $\gamma ai\delta ur\acute{u}$ $gaf\acute{a}s$ $\check{c}e$ $mel\acute{i}si$
 $\gamma ai\delta ur-u$ $gafas$ $\check{c}e$ $melisi$
 DONKEY-CM head and bee
 int.: ‘yackety-yak and wasp’
- b. $\gamma ai\delta ur\acute{u}$ $gaf\acute{a}s$ c. $\gamma ai\delta ur\acute{u}$ $mel\acute{i}si$
 $\gamma ai\delta ur-u$ $gafas$ $\gamma ai\delta ur-u$ $melisi$
 DONKEY-CM head DONKEY-CM bee
 ‘yackety-yak’ ‘wasp’

As far as we can tell, *ke* ‘and’ in Hellenic varieties is a phrasal coordinator (see Ingria 2005 for Modern Greek). *Če* ‘and’ in PhG, which is ultimately the Hellenic *ke*, is, similarly, a phrasal coordinator. In (32) below, two genitive phrases are coordinated with *če*:

- (32) tu $Andri\acute{a}$ $\check{c}e$ s $Nerk\acute{i}zas$ to $f\acute{s}ax\acute{o}kko$
 tu $Andria-\emptyset$ $\check{c}e$ s $Nerkiza-s$ to $f\acute{s}axokko$
 the.GEN Andreas-GEN and the.GEN Nerkiza-GEN the son
 ‘the son of Andreas and Nerkiza’

Hence, coordination facts on the one hand differentiate PhG compounds from Hellenic compounds and on the other hand underline the similarities between the PhG compounds and genitive phrases. Note, however, that unlike genitive phrases, coordination in compounds is not limitless and is constrained by the availability for the recovery of the semantic compositionality from the coordinated constituents.

Another difference between PhG and Hellenic compounding surfaces in external modification of the constituents. Although neither Hellenic nor PhG compounds allow the external modification of the non-heads, there is some evidence

that PhG, but not Hellenic, compounds allow for the external modification of the head. In (33a), the ungrammaticality of the structure stems from the attempt to modify the non-head to the exclusion of the head of the Modern Greek compound. The PhG structure, similarly to (33a), is also ungrammatical (34a):

(33) Modern Greek

- a. *kaloayrotóspito
kal-o-ayrot-o-spit-o
GOOD-CM-FARMER-CM-HOUSE-NOM.SG
int.: '[good farmer]'s house'
- b. ayrotóspito
ayrot-o-spit-o
FARMER-CM-HOUSE-NOM.SG
'farmer's house'

(34) PhG

- a. *méya yiðú tiri
meya yid-u tiri
big GOAT-CM cheese
'int.: [big goat] cheese'
- b. yiðú tiri
yid-u tiri
GOAT-CM cheese
'goat cheese'

Such constraints do not operate on phrases (cf. 33a with 35 and 34a with 36):

(35) poli meýálo spíti (Modern Greek)
very big house
'very big house'

(36) to méya tu yiðú ta čérata (PhG)
to meya tu yid-u ta čerata
the big the.GEN goat-GEN the horns
'the horns of the big goat'

Although the facts pertinent to external modification of the non-head are the same between PhG and Modern Greek, the two systems show differences in external modification of the head of a compound. Modern Greek does not allow this either, however in PhG, such modification is acceptable (37 vs. 38a):

- (37) * ayrotomeyalóspito (Modern Greek)
ayrot-o-meýal-o-spit-o
FARMER-CM-BIG-CM-HOUSE-NOM.SG
int.: ‘big [farmer’s house]/ farmer’s [big house]’
- (38) PhG
- a. yuvalú tazó álima
yuval-u tazó alima
WATER.BUFFALO-CM fresh butter
‘fresh buffalo butter’
- b. yuvalú álima
yuval-u alima
WATER.BUFFALO-CM butter
‘buffalo butter’

Similarly to the case in (36), the head of a genitive phrase can also be externally modified, as in (39):

- (39) tu yiđú ta méya ta čérata (PhG)
tu yiđ-u ta meya ta čerata
the.GEN goat-GEN the big the horns
‘the big horns of the goat’

The discussion so far has shown that N-GEN N compounds are structurally not on par with Hellenic compounds. Moreover, it has become clear that there is a striking parallelism between genitive phrases and N-GEN N compounds in PhG, albeit not an absolute one. Modern Greek compounds have long been discussed as morphological objects on which syntax cannot operate (cf. Ralli 2013b, for some dialects see also Andreou 2014). This is also shown partially in Section 2, and above with respect to the external modification and coordination facts. On the other hand, the phonological phrasehood of the compounds in PhG, the use of (originally) syntactic material to mark compounding, their visibility to syntactic coordination or modification – albeit to limited extent – imply their structural affinity to syntactic phrases. However, the differences between compounds and genitive phrases in terms of external modification of the non-head cast doubt on identification of phrases with compounds in PhG. There are in fact other peculiarities of these compounds that distinguish them from syntactic phrases. Although PhG DP is head final, as in other Asia Minor Greek dialects, fronting the head over the non-head is possible in genitive phrases (Bağrıaçık in preparation):

- (40) ta čarúxa s nékas
 [ta čaruxa]_i s neka-s e_i
 the shoes the.GEN woman-GEN
 ‘THE SHOES of the woman’

N-GEN N compounds behave similar to Hellenic morphological compounds in disallowing such scrambling (see Bağrıaçık & Ralli 2015):

- (41) a. * čarúxa nékas b. nékas čarúxa
 [čaruxa]_i neka-s e_i neka-s čaruxa
 shoes woman-CM woman-CM shoes
 int.: ‘women’s SHOES’ ‘women’s shoes’

In a similar fashion, due to the non-referential character of the compound constituents, these constituents cannot be antecedents in outbound anaphora (Postal 1969; Sproat 1988) under normal circumstances, as shown in (42):¹²

- (42) Čas iđini ta γaiđurú melísa đóčin da.
 čas iđini ta [CMPND γaiđur-u_i melisa] đóčin da*_i
 when saw.3SG the DONKEY-CM bees hit.3SG 3OBJ.CL
 ‘When he saw the wasps, he hit it.’ (it ≠ donkey, cf. (31c))

Finally, similar to Hellenic compounds, PhG compounds can also undergo derivation by suffixation. There are two points, however, concerning this derivation. First, similar to the case across all Hellenic varieties, in PhG as well, derivational affixes attach to stems, i.e., to lexemes stripped of their inflection. This is shown with the non-derived noun in (43a), and denominal verbalizer, *-lat*, attaching to the bare stem of (43a) in the example in (43b):

- (43) a. talyás b. talyalátízi
 talya-s talya-lat-iz-i
 WAVE-NOM.SG WAVE-VBLZ-IPFV-3SG
 ‘wave’ ‘it waves/undulates’

Concerning N-GEN N compounds, similarly to simplex nouns, a derivational suffix attaches to a compound only when the head noun is stripped of its inflection. Hence the compound in (44a) acts as a stem (without the inflection on

¹² Such anaphoric reference to word constituents, however, can become grammatical by pragmatically evoking a suitable referent corresponding to a noun in the compound/complex word (Ward et al. 1991).

the head noun) in (44b), where the derivational suffix, in this case the relational suffix,¹³ is attached to it:

- (44) a. širiðú γavurmás
 širið-u γavurmas
 PORK-CM kavurma
 ‘pork kavurma’
- b. širiðú γavurmalús
 širið-u γavurma-lu-s
 PORK-CM KAVURMA-REL-NOM.SG
 ‘with pork kavurma’

The derivational suffixes that can attach to these N-GEN N are virtually limited to two suffixes that are also borrowed from Turkish. One is the relational suffix, exemplified in (44b), and the other is the privative suffix *-súz(i)* exemplified in (45b):¹⁴

- (45) a. zejtinú álima
 zejtin-u alima
 OLIVE-CM oil
 ‘olive oil’
- b. ?zejtinú alimasúzi
 zejtin-u alima-suz-i
 OLIVE-CM OIL-PRV-NOM.SG
 ‘without olive oil’

No phrase in PhG, or in Hellenic in general, admits derivation of any sort. This is shown with the following PhG example. (46a) is a head-final relative clause. In (46b), the relational suffix is attached to the head of the relative clause which is stripped of its inflection; nevertheless the result is ungrammatical. That the ungrammaticality of (46b) does not stem from the head noun per se is witnessed by the grammatical (46c) in which the relational suffix attaches to the head noun of (46b) in isolation and the result is grammatical:

¹³ The relational suffix *-lú(s)* (< Turkish *-li*) is attached to nouns to form nouns and adjectives where the entity described possesses, is characterized by, or is provided with the object or quality expressed by the base (definition after Göksel & Kerslake 2005: 60–61, see also Kornfilt 1997: 445–446, Lewis 1967: 60–62).

¹⁴ It should be noted that not all simplex or compound bases that admit the relational suffix also admit the privative suffix in PhG (cf. Bağrıaçık et al. forthcoming). We leave the investigation of the reasons for this discrepancy for future research.

- (46) a. tu xeč čo pnóni to šexéri
 [RelC tu xeč čo pnoni to šexeri]
 that never not sleep.3SG the city
 ‘the city that never sleeps’
- b. * tu xeč čo pnóni to šexerlús
 [RelC tu xeč čo pnoni to šexer]-lu-s
 that never not sleep.3SG the CITY-REL-NOM.SG
 int.: ‘native/inhabitant of the city that never sleeps’
- c. šexerlús
 šexer-lu-s
 CITY-REL-NOM.SG
 ‘urban’

The discussion so far reveals that PhG N-GEN N compounds are of a ‘hybrid’ status between phrases and lexical items. Due to the fact that (i) they exhibit phrasal accent, (ii) their constituents are inflected lexemes, i.e. words, rather than bare lexemes, i.e., stems, and (iii) their constituents can be coordinated, and (iv) at least the head can be modified externally, they align with genitive phrases. However, they also diverge from genitive phrases at various points: they do not involve overt genitive articles (although they involve suffixes exapted from the genitive suffixes) and they do not allow focus extraction or outbound anaphora. More strikingly, unlike genitive phrases (or phrases in general) they undergo derivation – albeit with a limited number of affixes – as long as the head of the compound is stripped of its inflection. In section 6, we will present some possible solutions for their status between morphology and syntax, but before doing so, we will present a brief discussion on their origin and provide some further constraints on their structure in the next two sections.

4 On the origin of N-GEN N compounds

The loss of the Hellenic compounding template is probably an epiphenomenon of the emergence of the new type of N-GEN N compounds and the structure has possibly disappeared gradually. Such cyclical changes abound in languages (van Gelderen 2011), the most notable one being the negative cycle (Jaspersen’s cycle). As such, in PhG, we may tentatively postulate a ‘compound cycle’, the (possibly gradual) replacement of a purely morphological compound structure [X-o-X], by the N-GEN N compound structure, which as we have seen in Section 3, has a hybrid status showing both phrasal and lexical idiosyncrasies. These idiosyncrasies,

current paper. Here, we will discuss a certain type of compounding in which two (or more) noun words¹⁶ are juxtaposed with a compound marker (a.o. Kornfilt 1997: 474, Göksel 1988; van Schaaik 2002), namely *-(s)I(n)*¹⁷ at the right periphery (this compound structure will henceforth be referred as N-N-*sI*):

- (47) *yemek oda-sı* (Turkish)
 food room-CM
 ‘dining room’

The compound marker at the right periphery is form-wise identical to the third person singular possessive suffix (48) (cf. Göksel 2009):

- (48) *Çağla-nın oda-sı*
 Çağla-GEN.3SG room-POSS.3SG
 ‘Çağla’s room’

-sI in N-N-*sI* compounds does not mark possession; nevertheless it retains some structural affinity with the possessive marker as the compound marker and the possessive marker (all members of the paradigm) are in complementary distribution (49), and both the possessive marker and the compound marker are closing suffixes (Göksel 2009), i.e., they both have to follow the plural marking (50) (Lewis 1967; Dede 1978; Kornfilt 1986; Göksel 1988; 1993; Schroeder 1999; van Schaaik 2002):

- (49) *Çağla-nın yemek oda-sı* / **oda-sı-sı*
 Çağla-GEN.3SG food room-POSS.3SG / room-CM-POSS.3SG
 ‘Çağla’s dining room’
- (50) *yemek oda-lar-ı* / **oda-sı-lar*
 food room-PL-CM / room-CM-PL
 ‘dining rooms’

In (49), the N-N-*sI* compound, *yemek odası* ‘dining room’ is embedded under a genitive-possessive construction, and is restricted by the genitive possessor. In such embedding, it is the possessive agreement marker, in this case the third

¹⁶ We will refer to these constituents as words to separate them from the usage of the term ‘stem’ in Hellenic, remaining loyal to the convention adopted for Hellenic lexemes in sections 2 and 3. Nouns in Turkish do not differentiate between stems and words the way Hellenic does and nouns which are constituents in a compound are also word forms (i.e. they can stand alone).

¹⁷ [s] in parentheses is deleted if the base ends in a consonant. [n] in parentheses surfaces only when case suffixes follow.

singular agreement marker, rather than the compound marker that is attached to the head noun (Dede 1978; Göksel 1988; Kornfilt 1986; van Schaaijk 2002). In (50), it is shown that the plural marker has to attach directly to the head and the compound marker follows the plural marker, similar to the case in genitive-possessive constructions (cf. (51)):

- (51) Çağla-nın oda-lar-ı
Çağla-GEN.3SG room-PL-POSS.3SG
'Çağla's rooms'

It is partly due to this parallelism that N-N-*sI* compounds are often referred to as 'possessive compounds' (van Schaaijk 1992; Hayashi 1996; Yüksekler 1998). There are in fact some other structural similarities between possessive constructions and N-N-*sI* compounds, such as suspended affixation of -*sI*, i.e., the optional elision of -*sI* in all conjuncts but the last one in a coordination structure (cf. Kornfilt 2012 for suspended affixation, for compounds Bağrıaçık & Ralli 2015) as in (52), or ability of these compounds to host coordinate structures in both head and the non-head positions as in (53a)–(53b) respectively, or *wh*-extraction from the non-head position (54) (Uygun 2009; Göksel 2009; Bağrıaçık & Ralli 2013; 2015). Moreover, as it has been argued by Kamali & İkizoğlu (2015), the stress pattern of N-N-*sI* compounds is the expected stress pattern of a phrase; the primary accent falls on the stressable syllable of the non-head and the head is somewhat deaccentuated (55):

- (52) otomobil akü(-sü), şanzıman(-ı) ve karoser*(-ı)
car battery-(CM), gearbox-(CM) and body-CM
'car battery, car gearbox and car body'
- (53) a. ülke birliğ-i ve/ile beraberliğ-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'
- (54) a. portakal ne-si?
orange what-CM
'the what (made) of orange?'

- b. portakal çekirdeğ-i
orange pit-CM
'orange pit'

- (55) ((gemí)_ω (halat-ì)_ω)_φ
ship rope-CM
'warp'

However, the two constructions, N-N-*sI* compounds and genitive-possessive constructions, are not identical across the board. Scrambling of the constituents is strictly ungrammatical in N-N-*sI* compounds (Bağrıaçık & Ralli 2015) (56a), whereas in genitive-possessive constructions such scrambling is allowed (56b):¹⁸

- (56) a. * oda-sı yemek *e_i* (cf. (47))
room-CM food
'dining room/ROOM'
b. oda-sı Çağla-nın *e_i* (cf. (48))
room-POSS.3SG Çağla-GEN.3SG
'Çağla's room/ROOM'

Similarly, the head of the compound cannot be modified by head-adjacent functional elements such as the indefinite article or quantifiers; these constraints are illustrated in (57b) (Göksel 2009):¹⁹

- (57) a. bir/her dükkan vitrin-i
a/every shop window-CM
'the window of a/every shop'
b. * dükkan bir/her vitrin-i
shop a/every window-CM
int.: 'one/every shop window'

¹⁸ Such scrambling can be the result of focusing of the possessee or backgrounding of the possessor.

¹⁹ But adjectival modification of the head is allowed, albeit rather limitedly, with constructions denoting official positions or organizations (Hayashi 1996; Özsoy 2004):

- (i) maliye eski bakan-ı
finance former miniter-CM
'former minister of finance'

The occurrence of such striking similarities and differences between possessive constructions and N-N-*sI* compounds triggers differing views on the internal structure of the latter. Various scholars argue for the morphological status of Turkish compounds (Schroeder 1999; van Schaaik 2002; Aslan & Altan 2006; Kunduracı 2013). According to another view, the internal structure of N-N-*sI* compounds, which is formally identical to that of possessive constructions, belongs to the morphological module (Göksel 2009). Yet for other researchers, (Yükseler 1998; Bozşahin 2002; Uygun 2009; Güner 2010; Bağrıaçık & Ralli 2015; Trips & Kornfilt 2015), N-N-*sI* compounds are generated syntactically and the differences between the possessive constructions and N-N-*sI* compounds are results of different syntactic structures. Tat (2013), on the other hand, argues that a post-syntactic morphology component must be responsible for the derivation of N-N-*sI* compounds. Reviewing all these accounts is beyond the aim of the current paper; directly relevant to our paper is the striking similarities between PhG N-GEN N compounds (Section 3) and Turkish N-N-*sI* compounds as depicted above. Such similarities underline their ambiguous status between lexical elements and phrases.

Both PhG and Turkish compounds involve compound markers exapted from nominal inflectional markers despite the difference between the exact source for the compound marker in the two languages: in PhG the source is the genitive, but in Turkish it is the possessive marker. As an extension of this, the Turkish compound marker is located at the head of the compound whereas the PhG compound marker attaches to the non-head. Another striking fact of similarity between the two compound structures comes from their stress patterns; in terms of their phonological structures both PhG compounds and Turkish compounds align with phonological phrases in the respective languages. Similarities also exist in how they react under syntactic operations: both languages allow hosting coordinate structures in the head or the non-head positions (or both), as long as, of course, the compounds are semantically transparent. External modification of the constituents is also possible to a certain degree. PhG compounds allow for the modification of the head by adjectives (38a); in Turkish, on the other hand, although functional elements cannot modify the head, adjectives can – albeit in a rather limited fashion (cf. fn. 19). Moreover, the non-head in Turkish can be modified externally, even by a relative clause:

- (58) lise-ye yeni başla-yan ergen tavr-ı
high.school-DAT new start-SBJREL adolescent attitude-CM
‘[adolescent who has just started high school] attitude’

(Kamali & Ikizoğlu 2015)

Hence both languages allow for external modification of certain constituents, but the availability of such modification seems to roughly correlate with the position of the compound marker; the lexeme hosting the compound marker cannot undergo external modification (except for the limited cases mentioned above). Such similarities between PhG and Turkish compounds and their differences from Hellenic compounding underline the close affinity of compounding in both languages to genitive constructions. Note once more that such modification is strictly ungrammatical for Hellenic compounds which have elsewhere been discussed as morphological compounds (cf. Ralli 2013b) and this morphological nature of Hellenic compounds is also presented briefly in Section 2.

However, such similarities should not identify these compounds with genuine phrases. There are also some similarities between PhG and Turkish compounds that indicate that their structure diverges from genuine phrases. We have seen in Section 3 that outbound anaphora in PhG compounds is allowed only when the referent can be pragmatically evoked. This is also valid for Turkish N-N-*sI* compounds. In both languages, compounds undergo derivation as long as native word formation rules are observed: In PhG, this requires the compound to be stripped of its inflection (44b, 45b) and in Turkish, the derivational suffix should precede the compound marker, since the latter is a closing suffix (59b):²⁰

- (59) a. *şillik tatlı-sı*
 hussy dessert-CM
 ‘a type of baklava-like dessert’
- b. *şillik tatlı-cı-sı*
 hussy dessert-DER-CM
 ‘someone who makes/sells the dessert in (59a)’

Based on such similarities between PhG N-GEN N compounds and Turkish N-N-*sI* compounds, we assume that PhG productive N-GEN N compounds are built on a pattern copied from Turkish. However, it is obvious that this pattern copying is not global (Johanson 1992, Johanson 1993: 201–202), i.e., not all struc-

²⁰ Moreover, in neither of the languages is scrambling (from) within the compound allowed (see (41a) for PhG and (56a) for Turkish). Even though this similarity between compound structures in two languages and the contrast these compounds show with genitive phrases in the respective languages which allow scrambling of constituents are remarkable, we avoid making a strong statement with respect to availability of scrambling in compounds as a clear diagnosis for differentiating between morphological versus syntactic constructions. For a variety of reasons, in various languages, syntactic configurations exist where constituents are “frozen” so to speak, and thus cannot undergo any kind of movement. We thank Jaklin Kornfilt for pointing out this issue to us.

tural properties of compounding in Turkish are copied into PhG. As there are no overt possessive markers in Hellenic, the Turkish compound marker which retains strong affinity with the possessive agreement marker in its distribution and origin is identified with the native genitive markers in PhG. Some structural differences between the compound structures in the two languages seem to depend on the position and type of compound markers. One overt reflex of this became obvious in the degree of acceptability of externally modified constituents above. In both languages, the modifiability of a certain constituent correlates with whether the constituent is the one hosting the compound marker or not. Another such difference is the availability of suspended affixation, i.e., elision of affixation under coordination. In Turkish, functional heads allow for elision, and so does the compound marker which still retains its affinity to the possessive agreement marker (52). In PhG, or generally in Hellenic, such elision does not exist since affixes attach to stems which cannot stand alone in argument positions. As such, the compound marker in PhG cannot be elided in coordination:

- (60) *koč- če rovú tópus
 koč-*(u) če rov-u topus
 BARLEY-*(CM) and ALFALFA-CM field
 ‘a field where barley and alfalfa are planted’ (cf. (28))

Such minor differences between N-GEN N compounds and N-N-*sI* compounds reveal that the borrowed pattern is actually integrated into the native system of the recipient language by employing material already at its disposal (hence the selective copying of the pattern, Johanson 1992). The idiosyncrasies of this native material bring along certain structural constraints on the borrowed pattern. Since the native material employed is an affix, it exhibits the peculiarities of being an affix in PhG: Since affixes in PhG attach to stems, and because there are no word-level or phrase-level affixes in PhG, modification of their base becomes unavailable or these affixes can not be elided leaving behind stems. In the next section, we will present another difference between Turkish and PhG that once again stems from the nature of the compound markers involved.²¹

²¹ Phrasal compound formation with the employment of genitive markers is also observed in Modern Greek, where the order of the non-head and the head follows the order of the genitive phrases. Ralli (2013b) argues for two types of a NN-GEN template. The first one, constructs (i.a), behaves similar to ordinary phrases in that they tolerate insertion of parentheticals and allows scrambling. The second type, dubbed as phrasal compounds by Ralli (2013b), emerged only in the last two centuries as calques from French (i.b). The order of their constituents cannot be scrambled nor can their structural integrity be interrupted by independent modification or by parenthetical insertion.

5 Phrasal compounds

Turkish N-N-*sI* compounds are notable for being able to host larger strings, phrases, in the non-head position (cf. van Schaaik 2002; Gürer 2010; Göksel 2015; Bağrıaçık & Ralli 2015; Trips & Kornfilt 2015 to name a few). An example of such compounds is already given in (58). Such phrases can also be full-blown finite clauses or nominalized clauses, and their status as bona fide phrases (as opposed to quotations) is discussed in Göksel (2015). The fact that these are compounds is witnessed by the occurrence of the compound marker on the head of the construction and by the strict adjacency between the clausal portions and the head:

- (61) polis orantısız güç kullan-dı-Ø haber-i
 police disproportionate force use-PST-3SG news-CM
 ‘the news that the police used disproportionate force’
- (62) polis-in orantısız güç kullan-dığ-ı haber-i
 police-GEN.3SG disproportionate force use-FNOM-3SG news-CM
 ‘the news that the police used disproportionate force’

(62) is the nominalized counterpart of (61) as the lack of tense marker and the occurrence of the factive nominalizer witness.²² If we maintain that PhG com-

-
- (i) Modern Greek
- a. parayoyí kapnú
 parayoy-i kapn-u
 PRODUCTION-NOM.SG TOBACCO-GEN.SG
 ‘tobacco production’
- b. ayorá eryasías
 ayora-Ø eryasia-s
 MARKET-NOM.SG JOB-GEN.SG
 ‘job market’

Concatenations such as (i.a) existed in Medieval Greek as well, yet as ordinary noun phrases which are not subject to constraints which PhG compounds show. Therefore we think that PhG compounding is a novel type of compound, as (i.b) is in Modern Greek.

²² Bağrıaçık & Ralli (2015) relate the availability of phrasal non-heads to the assumption that N-N-*sI* compounds are syntactically generated in Turkish. Göksel (2015), on the other hand, analyzed them as being generated by morphology. Trips & Kornfilt (2015) argue that phrasal compounds with nominalized non-heads (62) bear tighter semantic and syntactic connections between the non-head and the head than those where the non-head is finite (61), and they are governed by stricter selectional requirements between the nominalized non-head and the head. Reviewing all the accounts for Turkish phrasal compounds is beyond the aims of the current paper, therefore we ignore the details about phrasal compounds and focus on the fact that

pounds are in fact formed on a pattern copied from Turkish, then we would legitimately expect phrases in the non-head position of PhG N-GEN N compounds. However, just as the non-head position in an N-GEN N compound cannot host a noun externally modified by a simplex adjective (34a), neither can larger phrases with a predicate, e.g., nouns modified by relatives, be accommodated in the same position:

- (63) * tu čo katéš ywóses o nomatú xáli
 [REL_C tu čo kateš ywoses o nomat]-u xáli
 that not understand.3SG languages the.NOM.SG man-CM situation
 int.: ‘[the man who does not listen to reason] situation’
 int.: ‘the situation of someone who does not listen to reason’

In (63), the head noun stem *nomat-* ‘man’ is modified by a relative clause. The structure is ungrammatical even when the head of the relative clause is stripped of its inflection (cf. the word form in nominative *nomáts* with the stem *nomat-*) as the compound marker requires. This is expected as the compound marker attaches morphologically to a stem. It is not a phrasal affix which might attach to a bar-level projection. Phrases, relative or adjectival, are syntactic objects and thus are not eligible hosts for the compound marker, even though the head of the phrase aligns with the compound marker and even though the base is stripped of its inflection.

As can be expected, clauses without a head noun are not allowed in the non-head position, either. In (64), a finite non-embedded clause occupies the non-head position. In (65), the proposition is embedded under the factive complementizer *tu* (cf. Bağrıaçık in preparation. for complementation in PhG). In both (64) and (65), the results are ungrammatical, even if the noun left-adjacent to the compound marker is stripped of its inflection:

- (64) * kačevún ta pejgirú meselés
 [kačevun ta pejgir-]-u meseles
 speak.3PL the HORSE-CM claim
 ‘the horse(s) speak(s)’ claim’
- (65) * tu kačevún ta pejgirú meselés
 [tu kačevun ta pejgir-]-u meseles
 that speak.3PL the HORSE-CM claim
 int.: ‘(the) claim that the horse(s) speak(s)’

Turkish N-N-*sI* compounds can host in the non-head position both phrases with a predicate, i.e., clauses, and phrases without predicates (for an interesting argument about the existence of predicate in the phrase, see Trips 2012 et seq).

The ungrammaticality of (64) and (65) can be reduced to the non-existence of a nominal head to which the genitive attaches. However, even in the existence of an noun, we saw that phrasal constituents are strictly barred from the non-head position (cf. 63) as the compound marker, being a morphological element, cannot take a phrase as its base.

Such an approach ties the non-availability of phrasal non-heads in PhG to the obligatory occurrence of the compound marker on the non-head and its selectional restrictions imposed on its base. As the compound marker is hosted on the head noun in Turkish, no such restriction occurs on the non-head. Note that a similar restriction occurs in Khalkha (Mongolian), which, although typologically related to Turkish, does not allow phrases with predicates in the non-head in their compound structure. The compound template in Khalkha is virtually identical to that in PhG, N-GEN N as in (66); the difference between the two is that while genitive is attached to a stem in PhG, in Khalkha it attaches to a word form. The compound structure is form-wise identical to genitive phrases in (67):

(66) nom-yn san (Khalkha, Svantesson 2003: 162)
 book-CM storage
 ‘library’

(67) Baatar-yn mal
 Baatar-GEN livestock
 ‘Baatar’s livestock’
 (Khalkha, Gaunt et al. 2004: 16)

Now, although the non-head can host a coordinate structure in Khalkha, whereby ellipsis of affixation is observed (68), finite clauses cannot be hosted in the same position (69):

(68) Soyol Sport Ayalal.žuulčlal-yn yam
 culture sports tourism-CM ministry
 ‘The Ministry of Culture, Sports and Tourism’
 (Ágnes Birtalan, pers. comm.)

(69) * [xen yavax be]-nii asuult
 who go.FUT Q-CM question
 int.: ‘the ‘who will go?’ question’

In fact, propositions can be hosted in the non-head position, but only when the clause hosting the proposition is nominalized:

- (70) ter ir-ž čadax-güi ge-dg-iin učir
 he come-CVB can-MODNEG COMP-NMLZ-GEN reason
 ‘the reason that he cannot come’ (Kullmann & Tserenpil 1996: 309)

- (71) [Bold-ig (ni) ire-x]-iin medee
 Bold-ACC PRT come-NFUT-GEN news
 ‘the news that Bold comes’ (Ágnes Birtalan, pers. comm.)

In (70) the nominalizing suffix *-d(V)g* is attached to the verbal complementizer, literally ‘say so’ (von Heusinger et al. 2011); hence the clause can be viewed as nominalized, and in (71) the future deverbal noun (*nomen futuri*) suffix *-x* is attached directly to the predicate of the clause turning the clause into a nominal. In these examples, (70)–(71), however, which correspond to noun-complement structures in English, it is not entirely clear whether we are facing compounds or genuine syntactic constructions, since the integrity, which can be observed in compounds such as in the Turkish example in (62) between the non-head and the head does not hold in these structures. For example in (72), which corresponds to (71), we see that the postposition *tuxai*, which assigns genitive case to its complement, can intervene in between the non-head and the head:

- (72) [Bold-ig (ni) ire-x]-iin tuxai medee
 Bold-ACC PRT come-NFUT-GEN about news
 ‘the news that Bold comes’ (Ágnes Birtalan, pers. comm.)

Hence, it is highly likely that the genitive in (71) is not inherent to the structure but is assigned by a covert postposition. If this analysis is on the right track, we see a discrepancy between Turkish and Khalkha in whether compounds allow phrases with predicates in their non-head positions. Turkish does, and Khalkha does not, the latter similar to PhG. We think that the reason for this is the position of the compound marker and its inability to take a phrase as its base. Hence, we assume tentatively that the availability of clauses in the non-head position of the compound correlates with whether it is the head or the non-head of the compound that hosts the compound marker.

In summary, although PhG compound structure has been selectively copied from Turkish, it is still constrained by native word-formation strategies. Given that the compound marker in PhG is exapted from the genitive suffix by analogy to the Turkish compound marker exapted from the third person possessive suffix, and given that suffixes in PhG always attach to stems, phrases are not legitimate in the non-head position of a compound. In Turkish, on the other hand, since the

compound marker attaches to the head-noun, phrasal constituents can be hosted in the non-head position. Extending the analysis to Khalkha reveals that, beside the formal properties of the compound marker, the locus of its attachment can also determine whether phrasal constituents can be hosted in the non-head or not.

6 Locus of compounding in PhG

We have stated in the previous section that PhG compounds cannot host phrase-level items in their non-head position. The non-availability of phrasal constituents has been argued to be due to the morphological character of the compound marker attaching to the non-head. Similarly to the rest of the inflectional and derivational suffixes, the compound marker also subcategorizes for a stem (and distinct compound markers subcategorize for stems of distinct genders). As such, phrase level items are banned from hosting the compound marker.

Although the compounds in PhG cannot host phrases in their non-head position, whether the compounds themselves are in fact phrasal or not is a remaining issue. In earlier work, Bağrıaçık & Ralli (2015) tied the availability of phrasal non-heads in a compound to the syntactic nature of the compounds. If this is on the right track, the non-availability of phrasal non-heads could serve as one diagnosis to reveal their non-syntactic character. However, in section 5, we have shown that the non-availability of phrases is an epiphenomenon of the selectional restrictions of the compound head.

Despite the lack of phrasal constituents in the non-head position, these compounds in fact show some characteristics, such as their phonological phrasehood or ability to host coordinate structures, which bring them close to phrases. On the other hand, by accepting certain derivational suffixes as stems and by not allowing constituents to act as antecedents or to scramble away, they behave as words. Hence they have an ambiguous status between word-structure and phrase structure, for both Lexicalist and Non-Lexicalist approaches to word formation, just as certain types of compounds in various other languages do (for Modern Greek, see Ralli 2013b, for Italian, Bisetto & Scalise 1999; Bisetto 2015, for Romance languages in general, see the papers in Scalise & Massini 2012). One way of accounting for this hybrid status is to posit that N-GEN N compounds are in fact outputs of a certain syntactic word formation process, and their structural tightness is analogous to syntactic incorporation of indefinite/generic complements to Vs (73). Notice that in (73), the complement does not bear an overt definite article and is marked as nominative instead of accusative. Furthermore,

it is strictly adjacent to the head. However, it can host a coordinate structure (74):

- (73) píčin yámus
píčin yam-us
made.3SG wedding-NOM.SG
's/he made (a) wedding'
- (74) píčin semáði če yámus
píčin semaði-Ø če yam-us
made.3SG engagement-NOM.SG and wedding-NOM.SG
's/he made (an) engagement and (a) wedding'

Another way of accounting for the status of N-GEN N, again in a Lexicalist framework, is to assume that N-GEN N compounds are in fact morphological, (assuming that (inflectional) affixation is a lexical phenomenon, cf. Chomsky 1995) and what seems as the phrasal coordinator *če* 'and' is also a morphological coordinator. This option, however, falls short of explaining why external modification of the head, even though limited, is available in N-GEN N compounds and why these compounds have phrasal accent. These problems can be circumvented, however, once we assume that these compounds are morphological but nevertheless belong to a 'transitional' category between morphology and syntax, (cf. Kageyama 2001, see also Borer 1998), such as Word+ (Kageyama 2001), which denotes units larger than words (assuming the hierarchical structure of words in morphology, cf. Halle & Vaux 1998) but belong to the realm of morphology. As such although component-wise they belong to morphology in terms of word atomicity, they behave also like phrases, thereby showing differences from other levels of morphological units, i.e., roots, stems and words. Another alternative, without adhering to Lexicalist Hypothesis, N-GEN N compounds can be argued to be formed post-syntactically, assuming that there is a morphology component after syntax but before PF (cf. Halle & Marantz (1993)).

A final alternative account of these compounds would be to assume, following Ralli (2013a), that compounding can have its own peculiar characteristics since it often cuts across the two domains, morphology and syntax. Once not a radical separation but a gradual transition is admitted between morphology and syntax, compounding can be located in between the two, exhibiting properties of both core morphological elements and core syntactic structures. Phrasal compounds, in such a view, are most often not strictly syntactic and morphological compounds are often not strictly morphological.

In this paper, we are not proposing a strict adherence to any of the options above. Suffice it to state here that N-GEN N compounds in PhG present a challenge for compounding as exclusively a morphological phenomenon or as exclusively as a syntactic phenomenon. This challenge is inherited as such by the borrowed compounding pattern into the dialect from Turkish.

7 Conclusions

In this paper, we presented an account of subordinative (and attributive) compounds in PhG, an endangered Asia Minor Greek variety heavily influenced by Turkish. As opposed to various other Hellenic varieties, compounds in PhG are exclusively composed of two fully inflected nouns, where the non-head, the left-hand constituent, is marked with one of the two compound markers, *-u* and *-s*, whose shape is conditioned morphologically. We proposed that these compound markers have been exapted from the genitive markers in the variety. Showing that Hellenic compound structure is built on at least one stem and involves a unique compound marker exapted from an Ancient Greek thematic vowel; we argued that PhG compound structure cannot be associated with Hellenic compounding. Certain structural similarities between the compound structures in PhG and in Turkish, however, enabled us to propose that PhG compounding is selectively copied from Turkish. The compound marker role in PhG is assumed by what are originally genitive suffixes, by possible identification of the genitive in PhG with the Turkish compound marker, which is exapted from the third person possessive suffix, attaching to the head noun, i.e., the right-hand constituent. We correlated certain structural differences between the two languages, PhG and Turkish, to the nature and the locus of the compound marker. Among these differences is the occurrence of phrasal constituents in the non-head position in Turkish and lack thereof in PhG. We have shown that the PhG compound marker, being a purely morphological affix, attaches to stems, similar to all affixes in the language (as well as in all Hellenic varieties). As such, no phrasal constituent can be hosted in the position to which the compound marker attaches. In Turkish, on the other hand, since the compound marker attaches to the head, the non-head can easily host phrasal constituents. We also tested this correlation against Khalkha Mongolian, another Altaic language, in which, however, the compound marker attaches to the non-head. We have shown that similar to PhG, but unlike Turkish, phrasal constituents cannot be hosted in the non-head position in Mongolian, verifying the correlation we proposed between the locus of the compound marker and the availability of phrasal non-heads. Apparent counterexamples in

Khalkha, we argued, should involve a covert preposition which assigns genitive case, hence these are not compounds.

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Abbreviations

ACC	accusative	NFUT	future nominal
ADV		NMLZ	nominalizer
	adverbial suffix	NOM	
CM	compound marker		nominative
CMPND	compound	OBJ.CL	object clitic
COMP	complementizer	PL	plural
CVB	converbial	POSS	
DAT	dative		possessive
DER	derivational suffix	PRT	particle
F	feminine	PRV	privative
FNOM	factive nominalizer	PST	past
FUT	future	Q	question marker
GEN		REL	relational
	genitive	RelC	
IPFV	imperfective		relative clause
M	masculine	SBJREL	subject relativizer
MODNEG	modal negation	SG	singular
N	neuter	VBLZ	verbalizer

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