

METIN BAĞRIAÇIK (Ghent University, Belgium) and ANGELA RALLI
(University of Patras, Greece)

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Phrasal vs. Morphological Compounds: Insights from Modern Greek and Turkish¹

In this paper, we compare Modern Greek nominal compounds to their Turkish counterparts and reveal that Modern Greek nominal compounds under investigation are morphological while Turkish ones are syntactically built. Based on this, we offer an explanation for the availability of phrasal compounds in Turkish but not in Modern Greek: phrase-level items can be involved in syntactic compounds, but not in morphological compounds involving solely morphological items. The study reveals that the locus of compound formation is not confined to a single module both cross-linguistically and within a language, but the locus of a specific type of compound in a language entails whether or not phrasal compounds with the same compound structure can also occur in that specific language.

1. Introduction

A compound is a “lexical unit made up of two or more elements, each of which can function as a lexeme independent of the other(s) in other contexts” (Bauer 2001: 695). According to this definition, prototypically, compounding (like other lexeme-formation operations) produces new lexemes, but questions arise with respect to the input of the process, and these questions are reflected in the conflicting views on the locus of compounding. An often observed similarity to syntactic structures have led a number of linguists to consider compound formation, especially formation of synthetic ones,² as a matter of syntax (DI SCIULLO 2005, ANDERSON 1992, LIEBER 1992 among many others). For instance, ANDERSON (1992: 253–319) excludes compounding from his a-morphous morphology component. Similarly, ARONOFF (1994: 16) asserts that compounding should rather be treated as ‘lexeme-internal syntax’. However, structures involving

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² In synthetic compounds, “[...] the lexical head is derived from a verb. [...] The point about [synthetic compounds] is that the non-head of the compound seems to bear a syntactic dependency to the head, realizing its direct object or some other grammatical function.” (Spencer 2005: 88).

combinations of lexemes with morphological categories of an unclear status, so-called ‘affixoids’ (i.e. units which display properties of both stems and affixes), render difficult a radical separation of compounding and derivation: if derivation occurs in morphology, the presence of affixoids advocates a morphological status of compounding as well (see BOOIJ 2005 and RALLI 2010 for details).

SCALISE & VOGEL (2010: 4–5) provide a survey of the different approaches that have been proposed in the literature with respect to compounding and conclude that there is no agreement among scholars on whether a compound is formed in morphology or syntax. It is worth mentioning their remark (2010: 2) that compounds constitute an ‘anomaly’ among grammatical constructions, since they behave like words but bear a type of ‘internal syntax’, which is usually manifested in the relation holding between their basic constituents, or in the theta-role saturation occurring within ‘synthetic compounds’. In addition, the close relation between compounding and syntax is also revealed by the position of overtly realized inflection. Assuming that there is a distinction between inherent and contextual inflection, as proposed by BOOIJ (1994, 1996), and that only inherent inflection appears within word structure,³ compounding violates this rule in some languages. Typical examples can be found in Sanskrit and Ancient Greek, where a contextual case, such as accusative, can appear on the first constituent of compounds, i.e. compound-internally:

- (1) a. Sanskrit [Bauer 2001: 703 (24a)]

dhana-m-jayá
wealth-ACC-winning
‘winning wealth’

- b. Ancient Greek [adapted from Ralli 2013a: 49]⁴

nou-n-ekhé:s
mind-ACC.SG-who.has
‘prudent’

On the basis of the above observations, it is clear that attempts to define compounding and its locus in grammar encounter difficulties and the questions which arise can be resumed in two crucial points: what a compound is and where it is formed.

In this paper, we argue that the locus of compounding, whether it is in morphology or in syntax, is strictly compound-dependent. In other words, we argue that although compounding is ultimately a process of lexeme-formation, the output can be generated either morphologically or syntactically. This, however, does not mean that compound formation is exclusive to one and only one module in a given

³ “[i]t is only certain types of inherent inflection that can feed word formation.” (BOOIJ 1994: 27).

⁴ Throughout the paper, we will give detailed glosses for examples from Modern Greek (e.g. gender, number, case) only when they are directly relevant to the discussion. We choose to do so to avoid excessive morphemic information that might potentially render reading difficult. For a list of abbreviations employed, see section ‘abbreviations’ at the end of the current paper.

language. On the contrary, as will become apparent throughout the paper, both morphologically and syntactically built compounds can occur in one particular language, as also shown by Ralli (2013b). If this proposal is on the right track, we should be able to see empirical correlations of such a dichotomy, both across two (or more) languages and within a single language, since otherwise we would have a redundant model with similar processes and constructions placed into separate components across and within languages. Our results show that such empirical correlations do in fact exist. To this end, we will first consider Modern Greek (henceforth MG) compounds, which, following RALLI (1992, 2005, 2007, 2013a,b), we will label as ‘morphological items’ and Turkish compounds, which following BAĞRIAÇIK & RALLI (2013a) and RALLI (2013b), we will label as ‘syntactic formations’.⁵ This study constitutes a ground where findings in two series of papers by us are compared to each other in a systematic manner. This comparison and our discussion of the locus of compounding bears significant implications on the non-homogenous group of phrasal compounds—compounds in which the non-head can host a phrase-level constituent (see LIEBER 1988, 1992: 11ff for earlier definitions). We will argue that the reason why MG does not allow phrasal elements inside its one-word compounds lies exactly in the fact that MG builds these structures morphologically. On the contrary, the fact that compounding can be syntactic in Turkish entails that this language can also have phrasal elements inside its compounds. Consequently, we will argue that languages in fact do not allow syntactic structures appearing in morphological ones. In that sense, the Lexical Integrity Hypothesis still holds. Lexeme-formation, on the other hand, takes place not only in morphology but in syntax as well, thus, opposing or defending the ‘Lexical Integrity Hypothesis’ becomes relevant only when a certain (group of) lexeme(s) are created in morphology/the lexicon. Lexemes which are syntactically built are irrelevant to the ‘Lexical Integrity Hypothesis’. It should be acknowledged that our multi-component approach to different versions of essentially the same process is not entirely novel and it has also been formulated outside the realm of compounding, e.g. lexical versus syntactic passives (LAKS 2013), lexical versus syntactic reflexivization (REINHART & SILONI 2005) or lexical versus syntactic reciprocalization (SILONI 2012).

The paper is organized as follows: In section 2, we will discuss compounding in MG, NN and AN compounds in particular. We argue that these are morphological in nature. In section 3, we will discuss their Turkish equivalents, which we argue to be syntactic rather than morphological. In section 4, we turn to phrasal compounds in both languages and reveal that MG does not have compounds with clearly phrasal non-heads (which are longer than a lexeme or a word form, cf. the

⁵ In BAĞRIAÇIK & RALLI (2013), we discussed Turkish NN-*s*/ concatenations (see section 3) as “Construct-State Nominals” versus “phrasal compounds”, and argued that they follow distinct derivational routes. If this dichotomy we proposed in fact exists (but see criticisms to this approach in GÖKSEL (this issue)), in the light of the current paper, it should mean that the systematic differences between these two classes of nominal compounds have to be dealt with in syntax itself, and it does not mean that they are generated in distinct modules.

definitions by MONTERMINI 2010, SCALISE & VOGEL 2010), as a result of the fact that, in this language, compounding is a morphological phenomenon. In Turkish, on the other hand, nothing prevents the formation of phrasal compounds as compounding can also be syntactic in this language.⁶ Some restrictions in these compounds, as well as an analysis of these restrictions, are also presented in this section. In section 5, we will discuss a new set of data from MG, which can be considered phrasal compounds. This new set of data suggests that the locus of compounding should not be defined language-specifically, but compound-specifically. Finally, section 6 concludes the paper.

2. MG Compounds

MG has rich and productive compounding, whereby two stems, i.e. units smaller than words (2a), or a stem and a word (3a) are concatenated with a compound marker *-o-* interpolating in between the two. Lexemes created as the output of this process have idiosyncratic properties, such as unique stress, graphic unity, lexical integrity and so on, some of which are discussed in sections 2.1–2.5 (see RALLI 2013a: 13–25 for the full list of the criteria for MG ‘compoundhood’). Compare the compounds in (2a),(3a) to (2b),(3b), respectively, where the free, fully inflected word forms of the members of (2a),(3a) are given:

- (2) a. *trapez*_[stem] *-o-* *mándil*_[stem] *-o*
 table -CM- cloth -NOM.SG
- b. *trapézi* ; *mandíli*
 table.NOM.SG cloth.NOM.SG
- (3) a. *mavr*_[stem] *-o-* *pínakas*_[word]
 black -CM board.NOM.SG
 ‘black board’
- b. *mávros* ‘black’ ; *pínakas* ‘board’
 black.NOM.SG board.NOM.SG

NN (2a), AN (3a), AA (4a) AdvV (4b), NV (4c), VV (4d) are possible and productive combinations (the respective word forms of the compounds are given next to the examples, examples are taken from RALLI 2013a: appendix II):

- (4) a. *makr*_[stem] *-ó-* *sten*_[stem] *-os* cf. *makrís* ‘long’ ; *stenós* ‘narrow’
 long -CM- narrow -NOM.SG
 ‘long (and) narrow’
- b. *krif*_[stem] *-o-* *tróyo*_[word] cf. *krifá* ‘secretly’; *tróyo* ‘to eat’
 secretly -CM- eat.1SG

⁶ Yet, phrasal compounds only occur as a type of exclusively syntactic compound (see footnote 18).

‘eat secretly’

c. *thalas*_[stem] -o- *pníyome*_[word] cf. *thálasa* ‘sea’ ; *pníyome* ‘to drown’
sea -CM- drown.1SG
‘drown in the sea’

d. *aniy*_[stem] -o- *klíno*_[word] cf. *aníyo* ‘to open’ ; *klíno* ‘to close’
open -CM- close.1SG

In the following sub-sections, we will show with a number of tests that MG compounds are one-word formations (for the tests in general see TEN HACKEN 1994), the structure of which cannot be affected by syntactic operations, such as binding, movement and ellipsis. Our arguments are mainly based on NN or AN compounds, but the argument developed in this paper carries over to other types of compounds as well.

2.1. Word Atomicity

When we consider ‘word atomicity’, MG compounds differ from their phrasal counterparts in six related respects:

Consider the AN compound in (5a) and its phrasal counterpart in (5b). First, compounds differ from their phrasal counterparts with respect to the fact that they do not allow insertion of another (functional or lexical) element within their structure (such as the adjectival stem *mavr-* of the word *mávri* ‘black’) (6a)), as opposed to their phrasal counterparts where this is possible (cf. the interpolated adjective *mávri* in (6b)):

- | | |
|---|--|
| (5) a. <i>ayri-ó-yata</i>
wildcat (<i>Felis silvestris</i>) | b. <i>áyria yáta</i>
wild cat |
| (6) a. * <i>ayri-o-mavr-ó-yata</i>
wild black cat
int. ‘wild-black-cat’ | b. <i>i áyria mávri yáta</i>
the wild black cat
‘the wild black cat’ |

Second, none of the constituents of a compound can be modified by, for instance, a degree modifier, which is in fact possible in the case of phrases ((7a) vs. (7b) respectively, see also (6a) and (6b)):

- | | |
|--|---|
| (7) a. * <i>poli-ayri-ó-yata</i>
very wild cat
int. ‘very wildcat’ | b. <i>polí áyria yáta</i>
very wild cat
‘very wild cat’ |
|--|---|

Third, no constituent in a compound can be coordinated ((8a) vs. (8b)) or elided ((9a) vs. (9b)):

- | | |
|--|--------------------------------|
| (8) a. * <i>ayri-o-ke-meyal-ó-yata</i> | b. <i>áyria ke meyáli yáta</i> |
|--|--------------------------------|

wild and big cat
int. 'wild- and big- cat'

wild and big cat
'wild and big cat'

- (9) a. **o Marios íðe tin ayri-ó-yata ke o Yanis tin meyal-(ó)-yata*
the Marios saw the wild-CM-cat and the Yanis the big-CM-

- b. *o Marios íðe tin áyria yáta ke o Yanis (íðe) tin meýáli -yáta*
the Marios saw the wild cat and the Yanis (saw) the big
'Marios saw the wild cat and Yannis (saw) the big (one)'

Fourth, no word-internal inflection can appear within compounds ((10a) vs. (10b)). In other words, the whole concatenation is inflected as one word (see also section 2.5):

- (10) a. **ayri-es-ó-yat-es*
wild-NOM.PL-CM-cat-NOM.PL

- b. *áyri-es yát-es*
wild-NOM.PL cat-NOM.PL
'wild cats'

Fifth, no constituent in a MG compound can be wh-moved/wh-questioned (cf. BRESNAN & MCHOMBO 1995) ((11a) vs. (11b)):

- (11) a. **pjá_i e_i -ó-yata ine áyria?*⁷
which -CM-cat is wild?

- b. *pjá_i [DP e_i yáta] ine áyria?*
which cat is wild?

Finally, pronominal reference (outbound anaphora, POSTAL 1969) to either of the constituents is ungrammatical ((12c) vs. (12d)), as (morphological) words seem to be anaphoric islands. Notice that in the compound (12c) the pronoun cannot take the non-head of the compound as its antecedent. The compound form and its phrasal counterpart in isolation are given in (12a) and (12b) respectively:

- (12) a. *arxond-ó-spit-o* cf. *árxondas* 'nobleman' ; *spíti* 'house'
nobleman-CM-house-NOM.SG
'noble(man)-house'

- b. *spíti* *árxonda*
house.NOM.SG nobleman.GEN.SG

⁷ Note that the ungrammaticality of (11a) is not (morpho-)phonologically driven, although it is true that in a compound, the CM "[phonologically] appears on the first member of Greek compounds." (ANDREOU 2014: 49). The structure does not become grammatical even when a preceding eligible phonological host, albeit a fully inflected word and not a stem, is present (10a). This suggests that the ungrammaticality of (11a) is not due to the CM per se, but due to the fact that overall atomicity of the structure is violated. We thank Jaklin Kornfit for raising this issue.

‘nobleman’s house’

- c. **Píya* *sto* *arxond_ióspito* *ke* *ton_{*i/j}* *iða*
 went.1SG to.the noble(man)house and him saw.1SG
 him≠nobleman, him=somebody else
- d. *Píya* *sto* *spíti* *tu árxonda_i* *ke* *ton_{i/j}* *iða*
 went.1SG to.the house the nobleman.GEN.SG and him saw.1SG
 ‘I went to the nobleman’s house and I saw him’
 him=nobleman, him= somebody else

2.2. Involvement of Functional Categories

MG compounds display a semantically empty linking element between the first and the second constituents (-*o*-), the presence of which is compulsory. RALLI (2008) defines it as a ‘compound marker’, that is, a functional element which marks the process of compounding. In other words, it is present exclusively in compound formations. As shown by ANASTASIADI-SYMEONIDI (1983), RALLI & RAFTOPOULOU (1999) and RALLI (2007), -*o*- originates from an ancient thematic vowel, but became a compound marker already in the Hellenistic period (ca 3rd c. BC – 3rd c. AD) (see also NIKOLOU 2003, RALLI 2013a: section 2.3.4 for some phonologically conditioned irregularities concerning the CM, and RALLI 2013a: section 4 for some morphological irregularities):

- (13) *psar -o- táverna* cf. *psári* ; *táverna*
fish -CM- tavern
'fish tavern'

2.3. Idiosyncratic Stress

Beside their morphological properties, Greek compounds are also phonological words as they bear single stress, which, in many cases, falls on a different syllable from the stressed syllables of the two constituents in isolation ((14a) vs. (14b)) (see also NESPOR & RALLI 1994, 1996 and RALLI 2013a: section 2.3.1 for details on the morphological conditioning of stress):

- (14) a. *ayri-ó-yata*
wildcat
b. *áyria yáta*
wild cat

Since the presence of single (main) stress accent characterizes wordhood in Greek (ARVANITI 2007: 130, and the references cited there; JOSEPH 2002: 256), this phonological property can be added to the morphological properties mentioned so far for determining the morphological status of MG compounds.

2.4. Bound Constituents

The formation of Greek compounds usually involves stems, that is, parts of words without any inflectional ending.⁸ While the morphological category of the first constituent in a compound is always a stem, the category of the second constituent may be a stem or a word, depending on the compound. This has been formulated as the ‘Bare-Stem Constraint’ in RALLI & KARASIMOS (2009). Example (15a) is a compound both members of which are stems since their inflectional endings are different from that of the second member when considered independently (15b). The compound in (16a) has a word as the right-hand constituent, as demonstrated by the identical inflectional ending of both the compound and the second constituent (cf. 16b) (see also (2)–(3) for more examples):

(15) STEM+STEM

a. *anemónvroxo*
wind-rain

b. *ánemos* ; *vroxí*
wind rain

(16) STEM+WORD

a. *lemonanθós*
lemon flower

b. *lemóni* ; *anθós*
lemon flower

2.5. Inflection

Related to the discussion in sections 2.1 and 2.4 is the fact that MG compounds are inflected as single stems. Compare, for instance, (17a) where a compound is inflected as one stem to (17b) where the respective phrase is case-marked both on the head and the non-head (MG DPs exhibit phi-feature agreement, i.e. agreement in terms of person, number, gender and case) between a head and (a) non-head(s)):

(17) a. *tis ayrióyata -s* b. *tis áyria-s yáta-s*
of.the wildcat.FEM-GEN.SG⁹ of.the wild.FEM-GEN.SG cat.FEM-GEN.SG

In the case of the STEM+STEM type, the inflection of the whole concatenation is often different than that of the head in isolation (see section 2.4). Compare first the nominative inflection on the compound in (18a) to the nominative inflection on both the non-head and the head of the phrase in (18b):

(18) a. *ayrioyúrún-o* b. *áyri-o yurúni-Ø*
boar.NEUT-NOM.SG wild.NEUT-NOM.SG pig.NEUT-NOM.SG

⁸ In Modern Greek—as opposed to Ancient Greek—there is no synchronic difference between a root and a stem (RALLI 2005: 23, 2013a: 8). Hence, these two terms should be taken as synonyms as far as MG word formation is considered.

⁹ According to RALLI (2002), gender is a lexically specified feature of stems while case and number belong to inflectional suffixes.

And now compare the examples in (18a,b) to the genitive case marked counterparts (19a,b):

- (19)a. *tu ayrioýurun- u* b. *tu áyri-u yurunj-ú*
of.the boar.NEUT-GEN.SG of.the wild.NEUT-GEN.SG pig.NEUT-NOM.SG

The tests applied so far to MG compounds can be summarized in the following table:

<i>Test</i>	<i>Compounds</i>	<i>Phrases</i>
Insertion	–	+
Independent Modification	–	+
Coordination/ellipsis	–	+
Internal inflection	–	+
Wh-extraction	–	+
Pronominal Reference	–	+
Compound-specific marker	+	–
Idiosyncratic Word-Stress	+	–
Bound constituents	+	–
External Inflection	+	–

Table 1. *Properties of compounds and phrases in MG*

Following RALLI (2013a,b), we interpret these discrepancies between the phrases and compounds as follows: compounding in MG is a process which is governed by properties different from those which characterize phrases. Therefore, it is safe to assume that MG compounds are morphologically built objects. Beside being subject to lexical integrity, they are single prosodic words and involve constituents that do not have a direct active role in the formation of phrases, i.e. stems, as well as a linking element *-o-* which marks the process of compounding itself. In other words, the compounding mechanism produces stems (notated for ease as X^{-1}), or full words (X^0).

3. Turkish compounds

Turkish NN concatenations with the $-(s)I(n)^{10}$ suffix at the right edge (henceforth NN-*sI*) (20a,b) have often been called ‘possessive compounds’ (SCHAAIK 1992, HAYASHI 1996, YÜKSEKER 1998) or simply ‘compounds’ (HANKAMER 1988, KORNfilt 1997a, GÖKSEL 2009). The suffix *-sI* is called either a ‘compound marker’ (SCHAAIK 2002, KORNfilt 1997a) or ‘linking element’ (GÖKSEL 2008, 2009) and is generally said to have originated from a third person singular

¹⁰ The phonemes inside parentheses surface in well defined phonological contexts. The phoneme in capital is an archiphoneme whose value is defined by vowel harmony.

possessive agreement suffix (21) but to bear no meaning of possession in these concatenations (GÖKSEL & KERSLAKE 2004: 104):

- (20) a. *kapı kol -u*
door hand -sI
‘door handle’
b. *çamaşır makına -sı*
laundry machine-sI
‘washing machine’
- (21) *Can -ın araba-sı*
Can-GEN.3sg car-POSS.3SG
‘Can’s car’

Similar tests applied in section 2 to MG compounds reveal that their integrity differs only minimally from that of phrases.

3.1. Word atomicity

Turkish NN-*sI* compounds do not freely allow insertion of any other material in between the two constituents: the result of such interpolation is marginal at best. Compare (22a), in which the particle *bile* ‘even’ is inserted between the head and the non-head of the compound *içişleri bakanı* ‘minister of internal affairs’, to (22b) where a genitive-possessive phrase freely allows insertion of the same element:

- (22) a. ??/*[[*içişleri*] *bile bakan-ı*] *ol-abil-ir-Ø*
‘internal.affairs even minister-sI be-ABIL-AOR-3SG
int. ‘He can be even the minister of internal affairs’
b. *Burası, [[ayyaş-lar-in] bile ev-i] ol-du-Ø*
Here.NOM drunkard-PL-GEN even home-POSS.3SG be-PAST-3SG
‘Here, it became the house of even drunkards’

Second, contrary to phrases which freely allow modification of both the head and the non-head (23c), compounds allow only a modified non-head ((23a) vs. (23b)).¹¹

- (23) a. [*beyaz zambak-lar*] *ülke-si*
white lilly-PL country-sI
‘The country of white lilies’
b. *gemi* [(**uzun*) *direğ-i*]
ship long pole-sI
int.: ‘long mast’
c. [[(*küçük*) *çocuğ-un*] [(*büyük*) *oyuncağ-ı*]]
little kid-GEN.3SG big toy-POSS.3SG
‘The big toy of the little kid’

Third, both constituents in an NN-*sI* compound can be coordinated, as illustrated by (24a) for the non-head, and by (24b,c) for the head:

- (24) a. [*yemek ve yatak*] *oda-sı*
b. *ülke* [*birlik ve beraberliğ-i*]

¹¹ Except for a few recent compounds where the head can be directly modified (GÖKSEL & KERSLAKE 2004: 99, ÖZSOY 2004).

food and bed room-sI
'dining and bed room'

country unity and solidarity-sI
'national unity and solidarity'

c. *ülke* [birliĝ -i ve beraberliĝ -i]
country unity-sI and solidarity-sI
'national unity and solidarity'

(24b)–(24c) illustrate the phenomenon of ‘suspended affixation’ (KORNFILT 1984, 2012) of *-sI*, i.e. the optional elision of *-sI* in all conjuncts but the last one in a coordination structure. This is also observed in phrases:

(25) *gösterici-ler-in yoğun çaba (-sı) ve ısrar-ı*
demonstrator-PL-GEN.3SG vigorous effort(-POSS.3SG) and insistence-POSS.3SG
'The vigorous efforts and the insistence of the demonstrators'

If suspended affixation is a phenomenon operant on syntactic affixes, i.e. functional heads, as it has been argued by Kornfilt (1998, 2012) and as it is exemplified in (25), then according to us, the suspended affixation of *-sI* constitutes evidence for the syntactic nature of the compounds (24b)–(24c).¹² The possibility of chunking, a case of coordination without overt coordinator, in both constituent sites provides corroborative evidence for the fact that neither the head nor the non-head are atomic units:

(26) a. [*televizyon, radyo, teyp, ütü*] *tamir-i*
TV radio tape.recorder iron repair-sI
'repair of TV, radio, tape recorder, iron'

b. *otomobil* [*akü(-sü), şanzıman(-ı), karoser*(-i)*]
car battery(-sI), gearbox(-sI), body-sI
'car battery, car gearbox, car body'

Fourth, only the (structural) non-head can be elided in Turkish compounds (27a). The ellipsis of the (structural) head yields to ungrammaticality (27b):

(27) a. ?*Eda grev gözcü-sü ben ise ~~grev~~ sözcü-sü*
Eda strike observer-sI I or spokesman-sI
'Eda is the picket and I am the spokesperson of the strike'

b. **Ali bir ders kitab-ı al-dı-Ø, Veli de okuma ~~kitab-ı~~*
Ali a lesson book-sI buy-PAST-3SG, Veli and reading
int. 'Ali bought a textbook, and Veli a reading (book).'

¹² A comprehensive discussion of suspended affixation is beyond the scope of the current paper but the reader is referred to KORNFILT (1996); INKELAS & ÖRGÜN (1998); KABAK (2007); GÖKSEL (2007:66–68) and KAHNEMUYIPOUR & KORNFILT (2011) for certain conditions that suspended affixation is subject to.

The ungrammaticality of (27b), according to us, does not indicate similarity of these constructions to morphological compounds (cf. (9a)) but should be explained by the fact that in Turkish (complex) NPs, there is a very strong ban against their lacking an overt head N, as shown KORNfilt (2005) with evidence from free relatives and by VON HEUSINGER & KORNfilt (2005: especially section 4.2) with evidence from partitive constructions.

Fifth, there is at least contrastive evidence to MG compounds in that PL inflection can appear on non-heads in Turkish compounds ((28), see also (23a)):

- | | |
|--|--|
| (28) a. <i>öğretmen-ler ev-i</i>
teacher-PL house-sI
'teacher's lodge' | b. <i>Şah-lar şah-ı</i>
Shah-PL shah-sI
'Shahanshah' |
|--|--|

Sixth, the constituents in a compound can be wh-extracted:¹³

- | | |
|---|---|
| (29) a. <i>ne_i e_i gazı kullan-mış-lar de-di-n?</i>
what gas-sI use-EV-3PL say-PAST-2SG
'What (sort of) gas did you say that they used?' | a'. <i>biber gaz-ı</i>
pepper gas-sI
'pepper spray' |
|---|---|

Seventh, pronominal reference to the non-head seems grammatical ((30a) which suggests that the non-head of the compound can bear some degree of referentiality; compound form is given in isolation in (30b) and the phrase is given in (30c):

- | | | |
|---|---|---|
| (30) a. <i>diş_i ağrı-sı durum-un-da Ø_i dolgu-sun-da bir sorun ol-abil-ir</i>
tooth ache -sI case-sI-LOC filling-sI-LOC a problem be-ABIL-AOR.3SG
'In case of toothache there might be a problem in its filling' | b. <i>diş ağrı-sı</i>
tooth ache-sI
'toothache' | c. <i>diş-in dolgu-su</i>
tooth-GEN.3sg filling-sI
'the filling of the tooth' |
|---|---|---|

3.2. Involvement of Functional Categories

The *-sI* suffix that occurs in an NN-*sI* compound has various functions (see GÖKSEL & KERSLAKE 2004: 70 for a description), only one of which is marking a compound. As we have mentioned in section 3, the other relevant function of *-sI* for the purposes of this paper is its function as a 3rd person possessive agreement marker in genitive-possessive constructions, as illustrated in (21). That these two functions are related has been subject to debate, especially when pairs such as those in (31a) are taken into consideration (cf. DEDE 1978: 50–59 for a discussion). It can occur only once in a concatenation, even in those cases where its presence (outside a compound) would otherwise be syntactically and semantically required.

¹³ To be more exact, Turkish is a wh-in-situ language and thus there is no extraction of wh-words for that matter. Thus, the *e* category in (29a) by no means implies a syntactic analysis and is used only for expository reasons.

For example, consider the compound *biber gaz-ı* (pepper gas-sI) ‘pepper spray’, which occurs in the head position of a genitive-possessive construction (31a). In this case, the co-occurrence of *-sI* with the third person possessive agreement suffix results in ungrammaticality (31b). This is valid for all person possessive agreement suffixes (LEWIS 1967, DEDE 1978, KORNFILT 1986, GÖKSEL 1988, 1993, SCHROEDER 1999, SCHAAIK 2002). That the possessive agreement suffix is actually required in a genitive-possessive construction is illustrated in (31c) where the head of the genitive-possessive construction is occupied by a non-compound:¹⁴

The suffix *-sI* has to occur last within the functional elements of a word, excluding the functional elements that link the word to higher structures, e.g. case. This property of *-sI* has been noted to form bracketing paradoxes (GÖKSEL 1988, 1993). The plural form of NN-*sI* compounds are expected to display the sequence *-sI+PL*, whereas the grammatical form is *PL+*-sI** (cf. (32a) vs. (32b) respectively):¹⁵

Nor can *-sI* precede derivational suffixes, even though this might be the compositionally ‘correct’ position, hence the ordering of derivational suffixes and *-sI* is DER+*-sI* ((33b) vs. (33c)).¹⁶

¹⁵ The ill-formed versus grammatical sequences that we have mentioned here in (32a) and (32b) respectively, with respect to PL and *-sI* in compounds, constitute only a subset of similar ordering constraints with respect to PL and AGR, observed most saliently in Turkish free relatives. Discussing this ordering constraint in Turkish free relatives is well beyond the scope of the current paper (see KORNfilt 1997b, 2005 and GÖKSEL 2007 for this constraint in free relative clauses). It should only be noted here that the *-sI* in Turkish compounds behaves like its agreement counterpart, or any agreement morpheme—i.e. nominal agreement, in terms of ordering with respect to PL.

- (33) a. at araba-sı
horse coach-sı
'(hackney) coach'
- b. at araba-cı-sı
horse coach-DER-sı
'coach rider'
- c. *at araba-sı-cı

From the discussion above, it becomes clear that *-sı* is a closing suffix (GÖKSEL 2009, GÖKSEL & HAZNEDAR 2008:17ff). It can be followed only by case morphology, but not by other inflectional (32) or derivational morphology (33)—a peculiarity that it shares with other nominal agreement markers in Turkish (see footnote 15 for an exemplar case). This also means that contrary to the case of MG CM, *-sı* is *not* only relevant to compounds but functions actively when the compound is connected to higher structures in syntax as well.

3.3. Stress in Compounds

The primary stress in NN-*sı* compounds falls on the stressable syllable of the non-head, which is usually the final syllable of the first constituent (see GÖKSEL 2009, GÜNEŞ 2009) (34). However, in genitive-possessive constructions as well, the primary stress falls on the ultimate syllable of the non-head (35):

- (34) *Gemí halat-ı*
ship rope-sı
'warp'
- (35) *polis-in müdahale-si*
police-GEN.3SG intervention-POSS.3SG
'the intervention of the police'

Based on the phonological similarity between pairs such as (34)–(35), KAMALI & İKİZOĞLU (to appear) argue that productive NN-*sı* compounds are syntactic and the stress pattern of these compounds is the expected stress pattern of a phrase.

3.4. Free Constituents

As should have become clear on the basis of the relevant examples given thus far, compounds in Turkish are built on words, i.e. on free items, not on stems.

of explanatory adequacy in cases where a compound with (a degree of) idiosyncratic meaning, such as (ia), enters into derivation, and where the idiosyncratic meaning of the input compound is retained in the derived compound (ib):

- (i) a. *şıllık tatlı-sı*
hussy dessert-sı
'a type of baklava-like dessert'
- b. *şıllık tatlı-cı-sı*
hussy dessert-DER-sı
'someone who sells the dessert in (ia)'

See HAYASHI (1996) for a similar approach as we have developed here to the interaction of derivation and compounding.

3.5. Inflection

In Turkish, there is evidence that inflectional elements occur within the structure of an NN-*sI* compound. Note that the PL suffix occurs to the left of the -*sI* suffix (32b). In phrases as well, the PL marker precedes the possessive agreement suffix (36a). On the other hand, both case suffixes and clitics follow the -*sI* in compounds and possessive agreement in genitive-possessive constructions ((36b) vs. (36c) respectively):

- (36) a. *Can-in akraba-lar-ı*
 Can-GEN.3SG relative-PL-POSS.3SG
 ‘Can’s relatives’
- b. *at araba-sın-da*
 horse coach-SI-LOC
 ‘in (the) hackney coach’
- c. *Can-in akraba-sın-dan*
 Can-GEN.3SG relative-POSS.3SG-ABL
 ‘from Can’s relative’

The results of the discussion so far can be summarized as follows:

<i>Tests</i>	<i>Compounds</i>	<i>Phrases</i>
Insertion	??/*	+
Independent Modification	+ (non-head only)	+
Coordination/ellipsis	+	+
Internal inflection	+/?	+
Wh-extraction	+/? (non-head only)	+
Pronominal Reference	+	+
Compound-specific marker	– ¹⁷	–
Idiosyncratic Word-Stress	–	–
Bound constituents	–	–
External Inflection	+	+

Table 2. *Properties of compounds and phrases in Turkish*

As clear from the discussion and the table above, compounds in Turkish are to a large extent sensitive to syntax and its operations, although not quite as much as genuinely independent phrases (see especially examples in (27) and the discussion following the examples).

3.6. Interim Results

¹⁷ It should be noted that the suffix -*sI* in Turkish compounds has been glossed as CM by various authors (e.g. KORNFILT 1997, SCHAAIK 2002, RALLI 2008, GÖKSEL this issue) or as a linking element (GÖKSEL 2008, 2009). In this study, we do not want to take a stand on this terminological issue, thus this entry in the table only means that from a morpho-phonological point of view, there is no compound-specific marker in Turkish which has a synchronically different shape from another marker, i.e. 3rd person possessive.

The results drawn from Turkish compounds in the preceding section clearly contrasts with those drawn from compounds in MG whose identity has been given in section 2 with identical tests:

<i>Tests</i>	<i>MG</i>	<i>Turkish</i>
Insertion	–	??/*
Independent Modification	–	+ (non-head only)
Coordination/ellipsis	–	+
Internal inflection	–	+/?
Wh-extraction	–	+/? (non-head only)
Pronominal Reference	–	+
Compound-specific marker	+	–
Idiosyncratic Word-Stress	+	–
Bound constituents	+	–
External Inflection	+	+

Table 3. *Comparison of compounds in MG and Turkish*

The interim result of the study are as follows:

MG clearly has compounds which are built in morphology, the items of which only morphology itself is responsible for. In contrast, we can legitimately claim that Turkish NN-*sI* compounds are made up of syntactic elements and are therefore built in syntax, despite the fact that there are certain differences between the respective derivations of compounds and phrases (see BAĞRIAÇIK & RALLI 2013a for details). Turkish compounds are discussed as ‘phrasal compounds’ in BAĞRIAÇIK & RALLI (2013a), and RALLI (2013b).¹⁸ It is important to note that being phrasal formations, Turkish compounds use a marker which can be characterized as a functional element employed in syntax. In this, they contrast with the morphologically built MG compounds, the specific marker of which originates from a purely morphological segment, the Ancient Greek thematic vowel *-o-*, which was nothing but a stem formative.

Our interim results provide supportive evidence for the ‘Lexicalist approach’ (LIEBER & SCALISE 2006, BRESNAN & MCHOMBO 1995: 181, ANDERSON 1992: 84, DI SCIULLO & WILLIAMS 1987: 49, BOTHA 1984, SELKIRK 1982: 70,

¹⁸ This should not be taken as a robust generalization for ‘all’ types of compounding in Turkish: Apart from NN-*sI* compounds, Turkish also has bare compounds (those without *-sI* suffix) as NN, AN, AA, NV, VV concatenations (see GÖKSEL 2009: 214–216 for a neat list of these types). Discussing all these compound types and their locus of generation is beyond the scope of the current paper. It has been argued elsewhere (GÖKSEL 2009, BAĞRIAÇIK & RALLI 2013b) that the formation of these types is spread between the morphological module and the syntactic module, suggesting that in terms of their structure, the members of these compound sets stand on a continuum between being outputs of pure lexical derivation and of syntactic generation and semantic endocentricity/exocentricity does seem to play a crucial role in the syntactic transparency of these compounds. This means that in Turkish there *are* morphological compounds as well.

LAPOINTE 1980: 8), but only on the condition that words—in our case compounds—are created in the morphological component of the grammar.¹⁹ The discussion so far, on the other hand, suggests that word formation may apply in syntax as well (see section 3), contrary to Bresnan’s argument that word formation is exclusively a morphological process and that syntactic rules have no access to internal word structure and hence cannot create words (BRESNAN 1997, 2001):

¹⁹ Aslı Göksel points out that an assumption about the Lexical Integrity Hypothesis (LIH) that applies only to morphological mechanisms (but not to syntactic ones) seems to make the LIH unfalsifiable, and she asks what a possible example of a LIH violation would be. According to this line of thinking, an example such as

- (i) *on-suz-luk*
 him/her-PRV-ness
 ‘the state of being without him/her’

would not violate LIH because it would be considered a syntactic formation, whereas the ungrammaticality of

- (ii) **on-lu-luk*
 him/her-REL-ness
 ‘int: the state of being with him/her’

would support the LIH because a word is an anaphoric island (according to Bresnan & Mchombo 1995).

According to us, if the LIH is violable without yielding ungrammaticality, then the structure is not a morphological one. In that sense, the hypothesis is teleological, it is a test for the locus of a certain structure. In Turkish, both the privative and the relational suffixes are phrasal suffixes (cf. BAĞRIÇIK & RALLI 2013a) given that both can select phrases:

- (iii) [karşı dağın ardındaki kasaba]-lı,
 opposite mountain.GEN beyond.POSS.LOC.RTV town -REL
 ‘someone from the town beyond the opposite mountain’

Yet, they have to attach to the head of the phrase (cf. Input Correspondence, ACKEMA & NEELEMAN 2004: 164). Therefore, according to us, the ungrammaticality of (ii) does not mean that *-li* is a lexical suffix and hence the ill-formedness is due to words’ being anaphoric islands. First, note that examples such as *Ahmet Hakan-lı bir haber programı* ‘a news program with Ahmet Hakan’ or *Cem Adrian-lı bir toplantı* ‘a meeting with Cem Adrian’ where *-li* attaches to referential elements are grammatical although further affixation of the derivational suffix *-lik* makes the structures ungrammatical, i.e. **Ahmet Hakan-lı-lık* ‘int.: the state of being with Ahmet Hakan’. This is not unexpected since suffixes may be subject to combinatorial ordering restrictions (cf. GÖKSEL 2007). Second, the relational *-li* suffix is subject to more selectional constraints: *kimse-siz* ‘without anyone’ is grammatical whereas **kimse-li* is ill-formed, although *kimse* ‘anyone’ is not a referential element. Thus, the ungrammaticality of **on-lu*, according to us, is due to a competition between itself and the committative *-(y)la*: *on-la/on-un-la* ‘with him’, *kimse-yle* ‘with anyone’ are perfectly grammatical. Such suppletive forms in a paradigm are everywhere in natural languages, although at this moment and in our case we are not sure what causes the suppletion.

Note that even if our argument is on the wrong track, we should still clarify that even the seemingly same suffix might attach syntactically and morphologically, but only in the first one is it not subject to the LIH, e.g. *-mA* in Modern Turkish (KORNFILT 2012: 188–189).

“Morphologically complete words are leaves of the c-structure [syntactic, M.B. & A.R.] tree and each leaf corresponds to one and only one c-structure node.”

(Bresnan 2001: 92)

The ‘relaxation’ that we have proposed with respect to mechanisms of compound-formation, and ultimately to the Lexical Integrity Hypothesis (in its many different guises) leads to the following hypothesis: Since MG has only morphological compounds where only elements of morphology are involved, phrasal compounds, i.e. compounds where the non-head is a phrase-level constituent, should not be able to occur in this language. On the other hand, in Turkish where compounding can also be syntactic and—at least—the non-head is phrasal, nothing should preclude the productive occurrence of phrasal constituents in the non-head position. In the next section, we will test this hypothesis.

4. Phrasal Compounds in MG and Turkish

Germanic languages have been reported to productively generate phrasal compounds where the non-head is a phrasal projection (TRIPS 2012, MEIBAUER 2007, LIEBER & SCALISE 2006, SCALISE & GUEVARA 2005, ACKEMA & NEELEMAN 2004, BOOIJ 2002, WIESE 1996, LIEBER 1992 to name a few, examples in (37) are from MEIBAUER 2007: 235–6).²⁰

- (37) a. [*lach of ik schiet*] *humor*
 laugh or I shoot humor (Dutch)
- b. *der [Vater-und-Sohn] Konflikt*
 the father and son conflict (German)
- c. *an [ate-too-much] headache*
- d. [*God is dod*] *theologie*
 God is dead theology (Afrikaans)

MG, in contrast, does not allow phrase-level projections in the non-head position, contrary to Germanic languages. Compare the ungrammatical (38a,c,e), where the non-heads are phrasal, with the NN compounds in (38b,d,f):

- (38) a. *[_{CP} *mi rixnete skupiðja*]-(*o*)²¹-*simo* b. *oð-ó-simo*
 not throw.2PL garbage-CM-sign road-CM-sign
 int.: ‘do-not-litter’ sign ‘signpost’

²⁰ For a categorization of phrasal compounds in English see TRIPS (2012) and in German MEIBAUER (2007).

²¹ The overt occurrence of the CM in these examples or lack thereof is not related to the ill-formedness of the examples in (38), (40) for reasons that become clear in the text below.

- | | |
|--|---|
| c. * _[PP] <i>me tin próti matjá</i> -(o)-érotas
with the first sight -CM-love
int.: ‘love at first sight’ | d. <i>jerond-o-érotas</i>
old.man-CM-love
‘love at old age’ |
| e. * _[DP] <i>i néa kúkla</i> -(ó)-spito
the new doll -CM-house
int.: ‘new-doll house’ | f. <i>kukl-ó-spito</i>
doll-CM-house
‘doll house’ |

That MG does not allow phrasal non-heads, on the one hand, provides evidence for the Lexicalist approach, and on the other provides counter-evidence to approaches to phrasal compounds which involve (almost limitless) interaction between morphology and syntax. For example, in ACKEMA & NEELEMAN’s approach (2004), syntactic constituents can be inserted into a morphological unit as long as feature matching takes place between the inserted maximal projection and the non-maximal projection into which the relevant element is inserted. However, as is clearly shown above in (38), MG does not allow this type of ‘Generalized Insertion’. To our knowledge, MG is not the sole language of this type; as far as compounding, and the appearance of a phrase-level constituent inside a compound is considered, Armenian and Slavic languages behave similar to MG. Given this idea, it is in fact not clear why phrasal constituents cannot be inserted into the non-head position, as opposed to, say, their Germanic counterparts. One might argue that feature matching does not take place between the insertee X and the inserted XP, yet ACKEMA & NEELEMAN do not provide an account for what these features can be. Following MEIBAUER’s reasoning, one can argue that the related feature is [+/-nominal], and that MG phrases do not qualify as [+nominal]. However, see (38e) where the non-head clearly bears the [+nominal] feature. Besides, MG has CP-level nominalizations where a CP, selected by an overt functional nominal element, D, becomes a DP (39b) (for further details of nominalization see BORSLEY & KORNFILT 2000, KORNFILT & WHITMAN 2011) and can occur in case positions (39c,d):

- | | |
|--|--|
| (39) a. <i>éfiye</i>
s/he left | b. <i>to óti éfiye</i>
the that s/he.left
‘that s/he left’ |
| c. [<i>to óti éfiye</i>] <i>apoðikníi tin enoxí tis</i>
the that left.3SG show.3SG the guilt her
‘that s/he left proves his/her guilt’ | (ROUSSOU 1991:87 [=25a]) |
| d. <i>ðen amfísvitó</i> [<i>to óti éfiye</i>]
not dispute.1SG the that left.3SG
‘I do not dispute the fact that s/he left’ | (BORSLEY & KORNFILT 2000:114 [=56]) |

Returning to the issue of MG compounds, even these nominalized CPs, which are DPs and clearly [+nominal], cannot be inserted into the non-head position:

- (40) **[to óti éfiye]-(o)-jeyonós*
 the that s/he left-CM-fact
 int: ‘that-(s)he-left-fact’

Why they cannot appear in the non-head position neatly follows from the discussion in section 2. MG compounds are purely morphological, whereby the left-hand constituent is always a stem (X^{-1}), never a phrase-level projection (XP). Therefore regardless of the exact nature of the phrase to be inserted in the non-head position, no phrase-level constituent can function as a stem.

Based on this fact, we argue that ‘Generalized Insertion’ cannot be generalized to languages where compounding is without a doubt morphological and involves only morphological units.

Turkish, on the other hand, allows larger phrases in the non-head position, i.e. as noun complements (see SCHAAIK 2002 who discusses them as ‘higher-order compounds’):

- (41) *[polis-in orantısız güç kullan-dığ-ı] haber-i*
 police-GEN disproportionate force use-FNOM-3SG news-sI
 ‘the news that the police used disproportionate force’

In the example above (41), the whole TP is nominalized (KORNFILT & WHITMAN 2011: 1302) by the Factive Nominalizer (FNOM), as also indicated by the 3rd singular agreement suffix. The subject is in genitive case which is assigned by the head of the nominalizing functional projection.²²

That DPs and any D-related projection, e.g. NumP, are allowed even in non-head position in Turkish is witnessed by the following example where the non-head is a Numeral phrase in (42):

- (42) *iki adam boy-u*
 two man length-sI
 ‘the height of two men’

The elements that make use of the D-projection of the noun phrase have been claimed to be excluded in compounds (DI SCIULLO & WILLIAMS 1987: 50;²³

²² In earlier work, the nominalizing functional projection is claimed to be an AgrNP (BORSLEY & KORNFILT 2000, KORNFILT 2003) and in recent work a DP, (KORNFILT & WHITMAN 2011), but nothing hinges on this. Genitive subjects are licenced by movement to Spec,DP via Spec,TP.

²³ DI SCIULLO & WILLIAMS’s original argument (1987: 50) is primarily based on proper names and pronouns—more specifically inbound anaphora, according to which a word cannot contain pronouns that are referential. According to them, famous proper names constitute an exception to this, but in such cases the names are not referential. General objections to the restriction both on inbound anaphora and on the occurrence of proper names have been put forward by HARRIS (2006). Since we

POSTAL 1969), yet the Turkish data do not obey this generalization (42). Note that these constructions are not allowed in MG (see also the ungrammatical (38e)):

- (43) *[*tria peðj(a)*]-*o-latríá*
 three children-CM-love
 int: ‘love for three children’

as opposed to

- (44) *peð-o-latríá*
 child-CM-love
 ‘love for children’

If there are syntactic compounds in Turkish, then nothing should preclude the involvement of another syntactic unit in these compounds; in this case a DP which is the nominalized phrasal projection of a TP (41), since the verbal terminus, TP, and the functional projections below become irrelevant to further syntactic operations. In other words, contrary to what would follow from ACKEMA & NEELEMAN (2004), in Turkish, there is no morphological compound in which a syntactic unit is inserted. Rather the entire compound formation takes place in syntax, and the non-head is perfectly eligible for phrasal projections, a DP projection being only one of the possibilities.

Additional evidence for the irrelevance of the terminal projection of the non-head, and the functional projections below it when it enters a compound formation, comes from examples in (45), where finite IPs/CPs occur in the non-head position:

- (45) a. [*polis orantısız güç kullan-dı-Ø*] *haber-i*
 police disproportionate force use-PAST-3SG news-sI
 ‘the news that the police used disproportionate force’
 b. [*polis orantısız güç kullan-dı-Ø mı?*] *soru-su*
 police disproportionate force use-PAST-3SG Q question-sI
 ‘the question “did the police use disproportionate force”’
 c. [*dayan Gezi*] *slogan-ı*
 resist.IMP Gezi (Park) slogan-sI
 ‘the slogan ‘Resist Gezi (Park)’

(45) shows that there are also non-nominal phrases (e.g. IPs/CPs) which can occur as non-heads. Note that this constitutes another problem for ACKEMA & NEELEMAN’s argument about ‘Generalized Insertion’: We have seen in MG compounds that even though feature matching might occur, phrasal elements are

are not sure at the moment about the properties of proper names, we refrain from incorporating them into our discussion.

still excluded from the non-head position in this language. In (45), we see that even though it is inconceivable what features are common to the terminal node of the compound structure and the inserted phrase (CP/IP), these phrases can still occupy the non-head position of Turkish compounds.²⁴

So far, we have shown that MG does not but Turkish does have ‘phrasal compounds’ where the non-head position is occupied by a phrase-level projection. The ungrammaticality of such phrasal compounds in MG follows from the fact that compounding in MG is solely a morphological process that requires—at least—non-heads to invariably be stems. On the contrary, Turkish allows phrase-level projections in the non-head position, arguably because (apart from morphological compounds (see footnote 18)) there are compounds as outputs of a syntactic word-formation process in Turkish. So far, we have not come across formations where syntactic constituents occur inside morphologically built constituents. Therefore, the Lexical Integrity hypothesis, according to us, still holds, though one should be careful in which language and on which type of concatenations the hypothesis is tested.

5. Phrasal Compounds in MG

Does the whole discussion in section 4 mean that MG *cannot* have phrasal compounds at its disposal in any process of word formation?

Our answer to this question is negative. MG does in fact have two (innovative) types of concatenations where the constituents are not stems but fully inflected words. These types are quite recent formations (observed only in the last two centuries), are almost always confined to specific jargon, and have most probably emerged under the influence of French and English (RALLI 2013a). The types involve AN and NN-GEN concatenations (46a, 46b respectively):²⁵

²⁴ According to GÖKSEL (this issue), NN-*s/* compounds with phrasal non-heads fall into two distinct categories, citational compounds and quotational compounds and she shows that there are certain structural differences between the two. She interprets this dichotomy as follows: only citational compounds are syntactically transparent and are ‘phrasal compounds’. They can be of categories CP, IP, DP/NP and N. Quotational compounds on the other hand are syntactically opaque, and are compounds where there is an ‘IS A’ relationship between the non-head and the head. They can be only Ns, but without having the syntax corresponding to Ns. Although her argument about the need for bifurcation is very well supported by empirical evidence, her approach faces the same problem present in ACKEMA & NEELEMAN’s approach: it is not entirely clear how to deal with the structural placement of a quotation within a compound.

²⁵ There is another small group of non-homogenous concatenations, namely NN ones with two inflected words:

(i) *léksi* *kliđi*
word.NOM.SG key.NOM.SG
‘key word’

The members of this category do not behave uniformly with respect to further inflection and insertion. RALLI (2013a: 255) calls them phrasal-compound-like phrases and claims that “[...] they are under the process of desyntacticisation, in the sense that they are progressively passing from a full syntactic status to that of phrasal compounds”. The reader is referred to RALLI (2013a) for a detailed account of these concatenations.

- (46) a. AN
ðimósi-os *ipálil-os* cf. English *civil servant*
 public.MASC-NOM.SG servant.MASC-NOM.SG
 ‘civil servant’
- b. NN-GEN
zóni *asfalía-s* cf. French *ceinture de sécurité*
 belt.FEM.NOM.SG safety.FEM-GEN.SG
 ‘safety belt’

They are termed as ‘phrasal compounds’ (RALLI 2013a) or ‘loose multi-word compounds’ (RALLI 2005, 2007; KOLIOPOULOU 2013) and exhibit hybrid properties: on the one hand, unlike phrases, they share with compounds (cf. section 2) the properties of not allowing D-elements (47), not allowing insertion of other constituents (48), not allowing focalization (49) and not allowing scrambling (50):

- (47) a. **o ðimósios o ipátilos* b. **i zóni tis asfalía-s*
 the public the servant the belt the.GEN safety-GEN
- (48) a. **o ðimósios, kalós, ipátilos* b. **i zóni meyáli-s asfalía-s*
 the public, good, servant the belt big-GEN safety-GEN
- (49) a. **To ðimósio iða ton ipátilo*
 the.ACC civil.ACC saw.1SG the.ACC servant.ACC
 int.: ‘It was the civil servant that I saw’
- b. **ti zóni éðese asfalía-s*
 the.ACC belt.ACC fastened. 3SG security-GEN
 int.: ‘It was the safety belt that s/he fastened’
- (50) a. **o ipátilos o ðimósios* b. **asfalía-s i zóni*
 the servant the public safety-GEN the belt.NOM

On the other hand, similar to noun phrases, they are composed of fully inflected words with case and number (46). Moreover, they are two distinct prosodic domains with distinct stress assignment (51):

- (51) a. *ðimósi-os ipálil-os* b. *zóni asfalía-s*
 public servant belt safety-GEN
 ‘civil servant’ ‘safety belt’

More importantly, however, these two categories behave like phrases when further inflection is involved. In the AN type, PL is realized on both the non-head

and the head (52a), which is reminiscent of the requirements of phi-feature agreement in DPs (52b), while in NN-GEN types, the plural PL is realized only on the head (52c). Compare (52c) to (52d), where the corresponding genitive phrase bears PL marking on the head:

- (52) a. *ðimósi-i ipálil-i*
public-PL servant-PL
'civil servants'
- b. *mávr-i skil-i*
black-PL dog-PL
'black dogs'
- c. *zón-es asfalía-s*
belt-PL safety-GEN
'safety belts'
- d. *ta peðj-á tis jitonjá-s*
the child-PL the.GEN neighborhood-GEN
'the children of the neighborhood'

Finally, although very marginally, there is some rare evidence suggesting that these items could be subject to further compounding of the same type. Consider the AN structure in (53a) and the NN-GEN one in (53b):

- (53) a. *steyn-ó kaθárizma*
dry cleaning
'dry cleaning'
- b. *fak-ós epafí-s*
lens contact-GEN
'contact lens'

In (54), the formations in (53a) and (53b) constitute the heads of the further NN-GEN concatenations ((54a)–(54b) respectively). Notice that in (54b), the GEN suffix is attached to the head of the compound *fakós epafís* 'contact lens':

- (54) a. *??[[steynó kaθárizma] asfalía-s]*
dry cleaning safety-GEN
'dry cleaning with care'
- b. *[iyró [fak-ón epafí-s]]*
liquid lens-GEN.PL contact-GEN
'contact lens solution'

The examples (47)–(50) and (51)–(54) show that the AN and NN-GEN formations show structural similarities to both morphological compounds and syntactic phrases, but diverge radically from the morphological compounds, presented in section 2. Further research is clearly required for the exact status of these new categories, but their resemblance to phrases and difference from morphological compounds strongly suggests that they have a phrasal status, as stated in RALLI (2013a). In this paper, we follow RALLI's (2013a) suggestion that they constitute phrasal compounds.

Notice that when AN phrasal compounds are subject to further derivation, which is a morphological process and hence requires stems as inputs, the phrasal

compounds in (55) are stripped of their inflectional endings, and are, thus, restructured into compound stems, that is, into morphological items (56):²⁶

- (55) a. *ðimósi-os* *ipálil-os*
 public.MASC-NOM.SG servant.MASC-NOM.SG
 ‘civil servant’
- b. *emfíli-os* *pólem-os*
 civil.MASC-NOM.SG war.MASC-NOM.SG
 ‘civil war’
- c. *trít-os* *kózm-os*
 third.MASC-NOM.SG world.MASC-NOM.SG
 ‘Third World’
- (56) a. *ðimosi-o-ipalil-ik-ós* b. *emfili-o-polem-ik-ós*
 civil-CM-servant-DER-NOM.SG civil-CM-war-DER-NOM.SG
 ‘pertaining to civil servants’ ‘pertaining to civil war’
- c. *trit-o-kozm-ik-ós*
 third-CM-world-DER-NOM.SG
 ‘pertaining to the Third World’

As foreseeable, the restructured phrasal compounds (55), which can constitute input for a morphological process such as derivation (provided that they are stripped of their inflectional endings (56)), can also become input for morphological compounding of the type that has been discussed in detail in section 2, as (57) clearly shows:

- (57) a. *meyal-o-ðimosi-o-ipálil-os*
 big-CM-civil-CM-servant-NOM.SG
 ‘big civil servant’
- b. *emfili-o-polem-o-xar-is*
 civil-CM-war-CM-satisfied-NOM.SG
 ‘someone who likes civil war(s)’
- c. *trit-o-kozm-o-fovía*
 third-CM-world-CM-fear.NOM.SG
 ‘fear from the Third World’

This is an expected outcome, given that inflection follows both derivation and morphological compounding.

²⁶ Note that NN-GEN compounds cannot enter into such derivational processes, probably because the internal inflection that should be stripped belongs to the head (see Ralli 2013a for further details).

6. Conclusions

In this study, we have looked at MG NN and AN compounds with the compound marker *-o-* and Turkish NN-*sI* compounds. We have shown that while MG compounds are morphological and hence show no degree of transparency to syntactic operations, Turkish compounds are syntactic and hence reveal a high degree of transparency to syntactic operations. This result has two certain interrelated implications for the ‘Lexical Integrity Hypothesis’, namely: (a) word formation, which also involves compounds with phrasal non-heads, is not confined to morphology (or the lexicon) but can take place in syntax as well; (b), as a result of (a), the Lexical Integrity Hypothesis should be maintained only for items which are morphologically created, as suggested earlier by KORNfilt & WHITMAN (2011) and in the work on which KORNfilt & WHITMAN’s approach is based (see the original work for references).

The fact that compounds can be formed both as morphological and syntactic objects also reveals why certain languages display the so-called ‘phrasal compounds’ but others do not. We have demonstrated that MG is of the latter type, in that this language allows only for purely morphological constituents in the formation of compounds with the compound marker. As a result, syntactic phrases, regardless of their features, are not allowed inside MG compounds. On the other hand, Turkish freely tolerates the appearance of both non-finite and finite IPs/CPs, as well as DPs (and D-related projections), in the non-head position. The fact that these maximal projections can occur as non-heads in NN-*sI* compounds stems from the fact that compounding in Turkish can also be syntactic and can hence involve functional heads and projections.

Finally we have looked at a small, non-homogenous class of compounds in MG, which have been developed analogically to compounds in English and French. We suggested that, given their similarity to phrases, they also bear a ‘phrasal status’, following a previous proposal put forward by Ralli (2013a), albeit in a different fashion than phrasal compounds in Turkish. The overall findings suggest that the locus of compounding should not only be defined language-specifically. Rather, it might be the case that, even within a language, two constructions that can both be *a priori* called ‘compounds’ can be generated in different modules of the grammar.

Abbreviations

ABIL= ability
ACC= accusative
AGR=agreement
AOR= aorist
CM= compound marker
DER= derivational suffix
EV= evidential
FEM= feminine
FNOM= factive nominalizer
GEN= genitive
IMP= imperative

LOC= locative
NEUT= neuter
NOM= nominative
PAST= past tense
PL= plural
POSS= possessive
PRV= privative
Q= question marker
REL= relational
SG= singular
1/2/3= first/second/third person

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Correspondence addresses

Metin Bağrıaçık
 Department of Linguistics
 Ghent University
 Blandijnberg 2, 9000
 Ghent, Belgium
Metin.bagriacik@UGent.be

Angela Ralli
 Department of Philology
 University of Patras,
 Rio, 26504
 Patras, Greece
ralli@upatras.gr