

# BARE N(OMINAL) N(OMINAL) CONCATENATIONS IN TURKISH: COMPOUNDS OR SYNTACTIC FALLACIES?

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## Abstract

This paper analyses bare N(ominal)N(ominal) concatenations in Turkish, which have been treated as either noun-noun compounds or adjective-noun compounds in the literature. Two issues are clarified throughout the paper: a) that the disagreement about the status of these concatenations stems from the fallacy that adjectives and nouns are taken to be distinct lexical categories in Turkish. We argue that the so-called Turkish adjectives and nouns are, in fact, members of only one category (Nominals) and that the members of this category stand on a continuum according to their varying degree of adjectiveness/nouniness. b) The so called bare NN compounds are only part of a general category of bare NN concatenations which also form a continuum. The members of this category range from compounds to syntactically built noun phrases. In between the two, there are numerous examples of ‘constructs’, which display properties of both compounds and noun phrases, and mark the interaction between word formation and syntax.

## 1 Introduction\*

Two common and productive ways of compound formation in Turkish are a) bare N(ominal) N(ominal) concatenations and b) NN concatenations with a *-(s)I(n)* suffix at the right periphery (see Kornfilt 1997; Göksel 2009, among others). The patterns are exemplified in (1a-b) and (1c-d) respectively, and in literature, each type has been analyzed as a distinct word-formation process.

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- (1) a. taş duvar  
stone wall  
'stone wall'
- b. tahta kafa  
wood head  
'idiot'
- c. diş doktor -u  
tooth doctor -(s)I(n)<sup>1</sup>  
'dentist'
- d. okul gezi -si  
school trip -(s)I(n)  
'school trip'

We focus on the first category, that is on bare NN concatenations (1a-b), which have been traditionally considered as right-headed compounds (see Kornfilt 1997; Göksel & Kerlake 2005; Gökdayı 2007; Göksel 2009). Given that compounds behave as words, the wordhood of these constructions is questionable though, since, as pointed out by Göksel (2009), they also share similarities with typical N(oun) P(hrases). For instance, it is worth pointing out the following properties:

- i. Primary stress in Turkish compounds falls on the stressable syllable of the non-head (the left constituent), which usually coincides with the last syllable (Göksel 2009: 218), and according to Yükseser (1987: 85), the stress site is not affected by the attachment of any suffixes to the head. This is not a peculiar property of compounds though, since NPs are also primarily stressed on the final syllable of the non-head.
- ii. Turkish NPs allow the indefinite determiner *bir* 'one/a(n)', numerals, classifiers, and certain quantifiers in between their constituents with a varying degree of acceptability across construction types and speakers (Göksel 2009: 227). The same visibility to this syntactic operation holds true for some bare NN concatenations, which are classified as adjective-noun compounds, whose "[...] interpretation slightly varies according to the position of the determiner" (Göksel 2009: 227).

In this paper, we argue that not all bare NN concatenations are compounds, and that the main reason for confusing compounds with NPs is the ambiguous lexical status of the two main constituents. We will show that accepting these constituents as clearcut nouns or adjectives leads to an erroneous position to consider all these constructions as compounds in spite of the fact that

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<sup>1</sup> Vowel Harmony is a prominent feature of Turkish, at least across suffixation. The suffix *-(s)I(n)* in Turkish can render itself as one of the allomorphs *-(s)i(n)* [sin], *-(s)ı(n)* [sun], *-(s)u(n)* [sun], *-(s)ü(n)* [syn] according to the [±front] and [±round] features of the final V of the stem. The initial <s> occurs if the stem ends in V, and <n> posits itself only when another suffix is attached after *-(s)I(n)*. See Bağrıaçık & Ralli (forthcoming) for some irregularities in suffixation with *-(s)I(n)*.

many of them behave like NPs. Contrary to the traditional belief that nouns and adjectives are distinct categories in Turkish, we will assume the position taken by Braun & Haig (2000), according to which there is an inclusive category, the so-called nominals, the elements of which stand on a continuum according to their adjective-like or nouny nature. In Braun & Haig's terminology, nominals are distinguished into adj(ective)-like, nouny, and no-pref(erence), depending on their properties. On the basis of this assumption, we will demonstrate that Turkish bare NN compounds may have a phrasal structure, but they are primarily non-compositional from the semantic point of view; they contain the structures [adj-like + nouny], [adj-like + no-pref] and [no-pref + nouny], and are not accessible to basic syntactic operations. We will also demonstrate that the same structures may also appear in the formation of NPs, as well as in that of an intermediate category, the so-called 'constructs', bearing certain properties which are shared by both compounds and NPs. We will further propose that constructs are arbitrary points of a continuum, one end of which is occupied by compounds, whereas the other end contains NPs. It will become obvious that our analysis of bare NN concatenations cuts across word formation and syntax, suggesting a close interaction of the two domains.

The layout of the paper is as follows: In section 2, we briefly summarize the main points of the existing studies on bare NN concatenations. In section 3, we argue for the inexistence of adjectives and nouns as distinct categories. Section 4 contains the analysis of bare NN concatenations in terms of compounds, constructs, and phrases, and section 5 has the concluding remarks.

## 2 Previous Literature

Bare NN concatenations have generally been cited as compounds or, with the Turkish term, *tamlama*. As far as their analysis is concerned, two different approaches have been developed concerning the category of their internal constituents: *bare noun-noun compounds* (Hatipoğlu 1972: 18; Atabay & Kutluk & Özel 1983: 56; Koç 1995: 432-436; Kornfilt 1997; Gencan 2001: 188-189; Eker 2003: 366) and *bare adjective-noun compounds* (Şimşek 1987: 357; Ergin 1989: 359; Banguoğlu, 1990: 345; Ediskun 1992: 122-123; Zülfikar 1995: 789; Korkmaz 2003: 275; Gökdayı 2007).

The claim that these concatenations are noun-noun compounds is based on the following properties:

- i. Since the left constituent is a noun, it can be substituted only with other nouns, such as *çelik* 'steel', *tahta* 'wood', *ağaç* 'tree, wood' etc.

The substitution of the left constituent with an adjective, such as *büyük* ‘big’, *dar* ‘narrow’, *küçük* ‘small’ etc., yields to an NP.

- ii. The underlying meaning of the construction is that the ‘head (the right constituent) is made of X’ (the left constituent), where X’ is the non-head. For instance, lexemes like DEMİR ‘iron’, TAŞ ‘stone’, TAHTA ‘wood’ (first constituent) are entities denoting what the second constituent (e.g. *duvar* ‘wall’ in (1a)) is made of.<sup>2</sup> Once the concatenation is created (*taş duvar* ‘stone wall’), only then can it be modified with an adjective, e.g. *büyük taş duvar* ‘big stone wall’.
- iii. The change in some toponyms from noun+noun-(s)I(n) concatenations into today’s constructions without -(s)I(n), e.g. *Topkapı* < Top Kapı-sı ‘canon + door/gate-(s)I(n)’, *Kadıköy* < Kadı Köy-ü ‘qadi + village-(s)I(n)’, *Hacettepe* < Hacet Tepe-si ‘cleanness hill-(s)I(n)’ (Koç 1995: 436) constitutes an evidence for the existence of noun-noun compounds.
- iv. From a diachronic perspective, the existence of noun-noun compounds is taken for granted for Old Turkic (e.g. *Türk bodun* ‘Turkic nation’ < Turk + nation, *Ötüken yış* ‘Mother Earth’ < Ötüken + upland with valleys; place for settlement’), Old Anatolian Turkish (e.g. *Kayın ana* ‘mother-in-law’ < in-laws + mother, *Kadın ana* ‘dear mother’ < woman + mother), and Modern Turkish (Koç 1995: 435).

On the other side, those who defend the view that the concatenations are adjective-noun compounds justify their position by appealing to the following properties:

- i. Although the non-head conveys the meaning of what the head is made of, it is erroneous to consider it a N<sup>0</sup>. Instead, it should be viewed as the elliptic form of a participial clause:<sup>3</sup>

(2) demir -den yap -ıl -mış kapı > demir -den kapı >  
iron -ABL make -PASS -PTCPL door iron -ABL door  
‘door which is made of/from iron’ ‘door from iron’

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<sup>2</sup> See Johanson (1990, 2006) for a discussion of nouns as entity denoting lexemes.

<sup>3</sup> The following abbreviations are used in this paper: ABL: ablative, ADJR: adjectivizer, AOR: aorist, INT: intensifying prefix, int: intended interpretation, LV: light verb, PASS: passive, PAST: past, PF: Phonological Form, PRV: privative, PTCPL: participial, REL: relational.

demir kapı  
iron door  
'iron door'

- ii. Many Turkish dictionaries list the lexemes DEMİR, TAŞ, TAHTA (first constituent) as both adjectives and nouns.
- iii. Compounds which are cited as noun-noun compounds such as *yılan kadın* 'insidious woman' < *yılan* 'serpent' + *kadın* 'woman' should be accepted as adjective-noun compounds, since what is denoted by the non-head is not actually the entity of the reptile, but the attribute 'insidious' which identifies it.

Apart from these two approaches, Johanson (2006: 66-67) has accepted that nouns and adjectives form distinct lexical categories in Turkic/sh. He has stated that when nouns fill the modifier position in an NP, they function as restrictive attributes, but they are *not* adjectivized. Basing his arguments on Dixon (1977, 1982, 2001), he assumes that adjectivization in Turkic languages is instantiated through affixation with certain derivational affixes. However, in cases where a non-derived noun appears in a modifier position, there is a shift from its primary use as a noun to a secondary attributive use, without the use of zero-derivation or a grammaticalization process. For Johanson (1990: 190), nouns in modifier position still refer to entities and not to properties and he calls this phenomenon "identity apposition". He further posits that concatenations where two such lexemes come aligned are compounds, but he refrains naming them as noun-noun or adjective-noun compounds.

### 3 The Problem of 'Nouns' and 'Adjectives'

As shown in the previous section, there is a strong disagreement on what lexical category – adjective or noun – the constituents of bare NN concatenations belong to. It is observable that both approaches attempt to analyze the concatenations as compounds by restricting their attention to the identification of the lexical status of their constituents, *i.e.* by pointing them as nouns or adjectives, instead of trying to determine the behavior of the constructions as word ( $X^0$ ) items, which would justify their compound status.

It is worth stressing the fact that discovering the category of a given lexical item X is not an easy task, since one should not only consider the semantic information it carries, but all the morpho-syntactic similarities and differences that X bears when compared to another lexical item of a supposed category Y. This task is particularly difficult in Turkish, where there are no

morphosyntactic properties, as for instance, gender or inflection class, which clearly distinguish nouns from adjectives in a language like Greek. In fact, some studies do exist for Turkic/sh, which propose that nouns and adjectives do not form distinct lexical categories. Grönbech (1936), for instance, has argued that (non-derived) lexemes which are labeled as adjectives do not differ from the so-called nouns.<sup>4</sup> According to him the impossibility of conceptual distinction between nouns and adjectives leads to the inexistence of distinct lexical categories.

“The reason for this is that one cannot establish a conceptual distinction between them. The nominals do not refer to beings or things; the notion [...] does belong to neither substantives nor adjectivals; this means that one uses the notion without paying attention to whether the notion denotes thing or property”.

(1936: 3, our translation)

Some others have alleged that a certain lexeme in Turkish may posit itself both as noun or adjective. Godel (1945: 45), for example, has stated that “the transposition of an adjective to noun or a noun to adjective is rather free, even for lexemes with [derivational] suffixes”. Moreover, according to Baskakov (1958: 60), adjectives are barely differentiated from nouns and adverbs in Turkic languages, with some exceptions, *e.g.* Altay, where adjectives tend to develop as a distinct lexical category.<sup>5</sup> The inexistence of distinct lexical categories as nouns and adjectives has also been traced in Old Turkic, and motivated on pragmatic grounds (Hopper & Thomson 1984; Erdal 1991). Erdal (1991: 132, footnote 187) states that “[t]he question is not whether a given lexeme can be put solely to nominal or solely to adjectival use, but what the addressee or reader takes it to be, where the text gives him no clue for choice”.<sup>6,7</sup>

In this study, we adopt the view that Turkish nouns and adjectives do not form distinct lexical categories. Following Braun & Haig (2000), we assume

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<sup>4</sup> Grönbech’s argument was for the whole Turkic language family.

<sup>5</sup> According to Baskakov, the development of adjectives in Altay is induced by its contact with Russian.

<sup>6</sup> Some typologically important characteristics of Old Turkic, which pose a challenge to the distinction between nouns and adjectives, can also be found in Erdal (2004:143ff).

<sup>7</sup> The argument that distinct lexical categories do not exist is not only restricted to Turkish (or Turkic languages), but covers all the Altaic language family. See Bağrıaçık (2010), and the references therein for a general overview of the noun/adjective distinction in Altaic languages.

that there is one set of lexical items, which we call *nominals*,<sup>8</sup> the elements of which stand on a continuum ranging from *nouny* to *adj(ective)-like*, depending on how much of adjective or noun characteristics they show. Between the two ends, there are *no-pref(erence)* items which are quite high in number. It should be noticed that the proposal in this paper is not a new classification from a two-fold lexical category distinction into a three-fold one. For us, no-pref items denote arbitrary points on the continuum and a certain item may show slightly more adj-like characteristics than another, but for the sake of ease, both are cited as no-pref items.

Three of Braun & Haig's (2000) morpho-syntactic tests (3c-e), and two of ours (3a,b), which we apply to examples in table (1), reveal the nouny, no-pref and adj-like items:

- (3) a. Modifiability  
 b. *bir* 'one/a(n)' insertion  
 c. Suffixation with 'REL' *-li* and 'PRV' *-siz*  
 d. Gradability  
 e. Intensifying reduplication

Adj-like	No-pref	Nouny
<i>kara</i> BLACK	<i>taş</i> STONE	<i>duvar</i> WALL

**Table 1: Adj-like, no-pref and nouny lexemes in Turkish**

**a. Modifiability:** As can be seen in the examples (4a-c), among the items of the continuum (Table 1), modification ranges from left to right, *i.e.* adj-like + no-pref; no-pref + nouny; adj-like + nouny. This indicates that an adj-like item, such as *kara*, modifies a no-pref or a nouny item, while a no-pref item, such as *taş*, can only modify a nouny item:

- (4) a. *kara taş*                      b. *taş duvar*  
 black stone                      stone wall  
 black stone'                      'stone wall'

<sup>8</sup> Swift (1963: 3) also rejects the terms 'nouns' and 'adjectives' since they "generally describe [...] a hybrid class called 'part of speech'". Instead, he uses the term substantives to describe a class whose lexical items can be syntactically nouns or adjectives.

- c. kara duvar  
black wall  
'black wall'

However, the modification from right to left is possible, but is bound to the emergence of a suffix *-(s)I(n)* on the right periphery, which, according to Kornfilt (1997), Göksel (2008), Göksel & Kerslake (2005), and Ralli (2008), should be considered as a compound marker (COMP):<sup>9</sup>

- (5) a. \*taş kara                      b. taş kara -sı  
stone black                      stone black -{sIn}  
'stone black'
- c. \*duvar taş                      d. duvar taş -ı  
wall stone                      wall stone -{sIn}  
'wall stone'

**b. *bir* insertion:** *bir* 'one/a(n)' is the Turkish indefinite determiner (Göksel & Kerslake 2005: 324). Canonically, it appears between a modifier and a modified item. Once a nominal is modified, the modifier that is the constituent preceding *bir*, can be either an adj-like element or a no-pref element (see examples 6a and 6b, respectively):

- (6) a. kara bir taş                      b. taş bir duvar  
black one stone                      stone one wall  
'a black stone'                      'a stone wall'
- c. \*duvar bir taş  
wall one stone

**c. Suffixation with REL *-I* and PRV *-sIz*:** Adj-like items do not allow combination with a REL or a PRV suffix (as illustrated in 7a and 7c), whereas such suffixation is grammatical for no-pref (7b) and more-nouny items (7d):

- (7) a. \*kara -lı                      b. taş -lı  
black -REL                      stone -REL  
'with stone(s)'

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<sup>9</sup> See Bağrıaçık & Ralli (forthcoming) for an analysis of concatenations with *-(s)I(n)*.



- c. \*kara -SIZ  
black -PRV
- d. duvar -SIZ  
wall -PRV  
'without wall(s)'

**d. Gradability:** Comparatives and superlatives are formed with *daha* 'more' or *en* 'the most', preceding the nominal item (Göksel 2005: 176,178). As illustrated in (8a,d), adj-like items can be graded with *daha* and *en*, whereas nouny items cannot (8c,f). Although questionable, the use of *daha* and *en* with a no-pref item, such as *taş*, can be acceptable (8b,e):

- (8) a. daha kara  
more black  
'more black'
- b. ?daha taş  
more stone  
'more stony'
- c. \*daha duvar  
more wall
- d. en kara  
the most black  
'the most black'
- e. ?en taş  
the most stone  
'the most stony'
- f. \*en duvar  
the most wall

**e. Intensifying reduplication:** While the meaning of adj-like items can be intensified by a reduplicated syllable (9a), nouny items do not allow this type of intensification (9c).<sup>10</sup> Intensification of no-pref items is questionable, but can be acceptable (9b):

- (9) a. kap- kara  
INT- black  
'black as pitch'
- b. ?tap- taş  
INT- stone  
'all in stone'
- c. \*dup- duvar  
INT- wall

The results of the tests are summarized in Table 2. Tests a,b,d,e are the positive criteria for adj-like items, while test c is the only positive criterion for

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<sup>10</sup> Göksel & Kerslake (2005: 90-91) name the phenomenon "emphatic reduplication" and define it as "the attachment of a prefix to an underived adjective in order to accentuate the quality of the adjective". See Göksel & Kerslake (2005) for more examples and some irregularities.

nouny items. No-pref elements, however, respond to all tests positively, despite a varying degree of acceptability among speakers.

Test/Category	Adj-like	No-pref	Nouny
a. modifiability	YES	YES	NO
b. <i>bir</i> insertion	YES	YES	NO
c. suffixation with REL and PRV	NO	YES	YES
d. gradability	YES	YES	NO
e. intensifying reduplication	YES	YES	NO

**Table 2: Distribution of the tests to adj-like, no-pref and nouny items**

It should be noted that the above observations concerning the nature of the lexical items are, according to us, direct consequences of their formal properties. Contrary to some early discussions (*i.e.* that of Grönbech 1936), we do not defend that nouns and adjectives are members of the same category due to their ‘context of occurrence’ and/or their lexical semantic meaning (solely). We will develop this idea in the subsequent paragraphs.

The categorial status of adjectives and nouns, *i.e.* whether they form universally distinct lexical categories is a much-debated issue. For centuries, in European tradition, adjectives were taken to be non-distinct from nouns due to their shared features with nouns in terms of gender, number and case (Hajek 2004).<sup>11</sup> Even though in most European languages the clear-cut distinction between adjectives and nouns had long been established by the twentieth century, adjectives still remained the least universal of the lexical categories, and the one which is subject to cross-linguistic variation (see Dixon 1982, Schachter 1985, Dixon & Aikhenvald 2004). While functionalist-typological views construe a continuum of nouns-adjectives (-verbs) based on lexical semantics, and accept the possibility that the distinction between nouns and adjectives may be neutralized in some languages (Bhat 1994), variation and neutralization across languages is usually expressed on formal grounds in terms of various possible permutations of complexes of features (see, for instance, Chomsky’s 1970 distinctions +/-N, +/-V distinctions).

Contrary to the common view of functionalism and formalism stated above, the existence of a distinct category of adjectives (and hence nouns) has been supported by some linguists (see, among others, Croft 1991, Baker 2004). More particularly, Baker (2004) is the most comprehensive study of the universality of nouns and adjectives as distinct categories on generative grounds. According to him, the difference between adjectives and nouns

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<sup>11</sup> The growing emphasis on syntax brought along the observation that adjectives may constitute a sub-class of nouns (*nominem adiectivum* vs. *nominem substantivum* for Thomas of Erfurt).

should be explained by the existence or absence of one single feature pertinent to one single category. In his account, nouns constitute the sole category with such a feature, the so-called ‘criterion of identity’, which enables them to bear referential indices. Adjectives, on the contrary, lack this feature.<sup>12</sup> Such a classification based on the existence or absence of only one feature, rather than complexes of features, eliminates the possibility that various permutations on the combinations of features may result in variation in lexical categories among languages. Moreover, such a classification predicts that every single lexical item should be the member of only one lexical category, and that there is no way of having a category that falls between two lexical categories, such as those of adjectives and nouns.

Baker’s argument is a strong one, which we partly align with. We agree with him in that all languages – including Turkish – have lexical items that behave as *prototypical* adjectives and *prototypical* nouns (in Baker’s parlance or in that of any other linguist who accepts a sharp distinction among lexical categories). These prototypical lexical items, in our account, are clustered in or towards both ends of our continuum (Table 1). It is thus no surprise that we use terms such as adjective-like or nouny (aligning with Braun & Haig 2000). We also agree with Baker’s account that no lexical item can have ‘66 percent of a referential index’ or ‘half a specifier’ (p. 239) —absurd but sole possible formalizations in his theory that would yield to lexical categories half way between nouns and adjectives, or verbs and adjectives respectively.

Even though the claim on the sharp distinction between the lexical categories is a strong one, Baker also recognizes the existence of ‘kinds of words that are *ambiguously* nouns or adjectives cross-linguistically’ (p. 184, our emphasis). According to him they designate materials, sex or nationality (or they express other meanings which he does not mention). However, he does not give a formal account of this ambiguous cross-linguistic category, which in turn yields to the reading that its members (1) do optionally have a criterion of identity, (2) obtain one in the context of occurrence, or (3) have ‘66 percent (or slightly lesser) of referential index’—three possible explanations all of which threaten his theory. Moreover, the span and limits of this category is prone to cross-linguistic variation itself. For example, words designating professions in Turkish may unexceptionally be subsumed into this category while this would be erroneous in a language like English or Russian.<sup>13</sup> In addition, words which belong to this ‘ambiguous class’ may outnumber

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<sup>12</sup> Nor are they bearers of a specifier position—the feature exclusively peculiar to verbs.

<sup>13</sup> Note that they can still be(come) modifiers on heads in these languages, but this is realized in terms of suffixation with a derivational suffix or by morphological merge – two operations redundant in Turkish (concerning the specific lexical items).

the prototypical adjective or noun classes, depending on the language. Finally, even if the existence of such an ambiguous category were to be taken for granted, this would be of no theoretical use as its uniformity would be highly questionable. In fact, the sensitivity of Baker's 'ambiguous words' to the five criteria given above varies from one item to the other<sup>14</sup>, which makes it impossible for these lexical items to be subsumed uniformly into a unique set whose boundaries are clearly differentiated from those of adjectives and nouns.

At the end of the day, we still hold the idea that prototypical nouns and adjectives do exist in every language (with varying limits) but the transition between these two end points is not a rigid one. Therefore, we claim that also in Turkish there are lexical items that are prototypical nouns and prototypical adjectives. However, given that there are intermediate focal points whose adjective-like or nouny nature varies from one item to the other, a full account of lexical items cannot be reduced to the existence or absence of one single formal property and each lexical item should be listed with its *sui generis* formal properties.

#### 4 Analysis of Bare NN Concatenations

##### 4.1 Constituent Categories

Our classification given above has a crucial implication on the lexical categories of the constituents involved in compounds. All the concatenations which are cited either as *adjective-noun compounds* or as *noun-noun compounds* prove to be inter-categorical concatenations of the following types:

- |      |    |                 |    |                  |
|------|----|-----------------|----|------------------|
| (10) | a. | [no-pref+nouny] | b. | [adj-like+nouny] |
|      |    | taş duvar       |    | al bayrak        |
|      |    | stone wall      |    | red flag         |
|      |    | 'stone wall'    |    | 'Turkish flag'   |

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<sup>14</sup> This is valid for a few more 'empirical' tests mentioned in Baker (2004) but not exemplified in this study. In Baker's account, verbalizing without a systematic change in the meaning is taken as a property of adjectives, or being subject to (pseudo-)noun incorporation a property of nouns. The members of this so-called ambiguous set show variation even in terms of sensitivity to these tests.

- c. [adj-like+no-pref]  
 kara tahta  
 black board  
 ‘blackboard’

Intra-categorical concatenations of [nouny+nouny], [adj-like+adj-like] or [no-pref+no-pref] type are not productive in Turkish. The existence of few examples is bound to a light verb on the right periphery:<sup>15</sup>

- (11) a. [nouny+nouny+LV]    b. [nouny+nouny+LV]  
 el ayak ol-                baş göz et-  
 hand foot be                head eye make  
 ‘help sb’                      ‘marry off sb’
- b. [nouny+nouny]            c. [nouny+nouny]  
 \*el ayak                      \*baş göz  
 hand foot                      head eye

#### 4.2 Compounds, Constructs or Phrases

Two most salient criteria used in literature for determining compoundhood, *i.e.* stress and internal insertion, do not play a determinative role in the exact classification of bare NN concatenations into compounds and NPs.

End-stress is considered to be an indication of wordhood in Turkish, as noted by Lees (1961) and Kabak & Vogel (2001).<sup>16</sup> Assuming that Turkish compounds are right-headed (see Kornfilt 1997; Göksel & Kerslake 2005), they should bear end-stress. However, as shown by Yüксеker (1987) and Göksel (2009), the so-called noun- and adjective-noun compounds are usually stressed on the final syllable of the non-head, whereas only exceptional cases bear head stress, those containing a (de)verbal element (Göksel 2009: 218):

<sup>15</sup> Göksel (2009) cites two examples which could be accepted as intra-categorical concatenations within the framework of the current paper: *ızgara balık* ‘grilled fish’ < *ızgara* ‘grill’ + *balık* ‘fish’, or *fırın patates* ‘baked potatoes’ < *fırın* ‘oven’ + *patates* ‘potato’.

<sup>16</sup> There are, however, some instances where the word stress does not fall on the ultimate syllable. See Sezer (1981), Inkelas & Orgun (1998, 2003), Kabak & Vogel (2001), Revithiadou *et al.* (2004), among others, for various discussions about these ‘exceptional cases’ to end-stress.

- (12) a. çek yát  
pull lie.down  
'sofa bed'
- b. al bas -tı  
red descend -PAST  
'puerperal fever'
- c. bilgi say -ár  
information count -AOR  
'computer'

Crucially, phrasal stress primarily falls on the final syllable of the non-head as well, as illustrated by (13):

- (13) a. küçúk çocuk  
small child  
'small child'
- b. açık kapı  
open door  
'open door'

Therefore, the stress position cannot be a reliable criterion for discovering the compoundhood of the bare NN concatenations.

Internal insertion also fails to differentiate compounds from non-compound concatenations. Many instances of the so-called compounds in the literature, such as *açık deniz* 'open sea' < *açık* 'open' + *deniz* 'sea' or *kurşun kalem* 'pencil' < *kurşun* 'lead' + *kalem* 'pen(cil)' allow insertion of at least the indefinite determiner *bir* in between their constituents (see 18, 23), without a change in the meaning. Interestingly, only semantically opaque bare NN concatenations do not display insertion of an element, as shown in the following paragraphs.

If both these criteria are not sufficient to determine the compound status of bare NN concatenations, the question which arises is whether there are true compounds among them. We propose that only semantically opaque instances can be compounds, since only these constructions are not visible to syntactic operations and display lexical integrity.

Let us consider the examples given in (14a,b), all of which are semantically non-compositional. We observe, first, that they do not allow insertion of an element in between their constituents (14c,d):

- (14) a. tahta kafa  
wood head  
'idiot'
- b. kara dul  
black widow  
'black widow: spider'
- c. \*tahta bir kafa  
wood one head
- d. \*kara bir dul  
black one widow

Second, their non-head cannot be independently questioned with the wh-words *hangi* ‘which’ or *nasıl* ‘how/what sort of’:

- (15) a. \*–*hangi/nasıl* kafa?      b. \*–*hangi/nasıl* dul?  
       which/what sort of head      which/what sort of widow  
       ‘which/what sort of head?’      ‘which/what sort of widow?’
- a'. \*–*tahta* kafa                      b'. \*–*kara* dul  
       wood head                        black widow  
       ‘idiot’                              ‘black widow’

Third, they do not allow ellipsis of the non-head:

- (16) a. \**tahta* kafa ve masa      b. \**kara* dul ve tahta  
       wood head and table      black widow and board  
       ‘idiot and wooden table’      ‘black widow and black board’

Finally, the non-head cannot be reconstructed as a modificational phrase:

- (17) a. \**tahta* ol -an kafa      b. \**kara* ol -an dul  
       wood be -ADJZR head      black be -ADJZR widow  
       ‘head made of wood’      ‘widow made of black’

Crucially, all these tests provide positive results for a set of constructions which are semantically transparent, as the examples listed in (18a-c). When insertion of an element breaks their cohesion, the structure is still grammatical (18d-f):

- (18) a. demir kapı                      b. taş duvar  
       iron door                        stone wall  
       ‘iron door’                        ‘stone wall’
- c. ipek gömlek                      d. demir bir kapı  
       silk shirt                        iron one door  
       ‘silk shirt’                        ‘an iron door’
- e. taş bir duvar                      f. ipek bir gömlek  
       stone one wall                  silk one shirt  
       ‘a stone wall’                      ‘a silk shirt’

The non-head of these concatenations can be questioned with the wh-words *hangi* ‘which’ or *nasıl* ‘how/what sort of’:

- (19) a. –hangi/nasıl kapı? b. –hangi/nasıl duvar?  
 which/what sort of door which/ what sort of wall  
 ‘which door?’ ‘which wall?’
- a'. demir kapı b'. taş duvar  
 iron door stone wall  
 ‘iron door’ ‘stone wall’

Ellipsis of the non-head is always allowed:

- (20) a. demir kapı ve masa b. ipek gömlek ve eşarp  
 iron door and table silk shirt and scarf  
 ‘iron door and i. table’ ‘silk shirt and s. scarf’

Finally, the non-head can be transformed into a modificational phrase:

- (21) a. demir ol -an kapı b. ipek ol -an gömlek  
 iron be -ADJZR door silk be -ADJZR shirt  
 ‘door made of stone’ shirt made of silk’

Since semantically transparent structures react positively to the above tests, it would be legitimate to assume that they are NPs. In contrast, it would also be reasonable to postulate the semantically non-compositional structures as compounds, because they keep intact their semantic and structural cohesion.

Interestingly, there are also numerous examples of bare NN concatenations, which share properties of both compounds and NPs. Consider the following items:

- (22) a. kurşun kalem b. kuru boya  
 lead pen(cil) dry paint  
 ‘pencil’ ‘crayon’

They allow insertion, retaining their structural and semantic compositionality (23a,b), and can be questioned with *hangi* ‘which’ (or *nasıl* ‘how/what sort of’) (24a-d), just like the NPs in (18d-f and 19a-b’):

- (23) a. kurşun bir kalem b. ?kuru bir boya  
 lead one pen(cil) dry one paint  
 ‘a pencil’ ‘a crayon’



- (24) a. –hangi kalem?            b. –hangi boya?  
           which pen(cil)            which paint
- a'. –kurşun kalem            b'. –kuru boya  
           lead pen(cil)            dry paint  
           ‘pencil’                    ‘crayon’

However, ellipsis of the non-head in these examples is not allowed. The same phenomenon is observed in compounds as well (cf. 16a,b):

- (25) a. \*kurşun kalem ve para    b. \*kuru boya ve kayısı  
           lead pen(cil) and coin    dry paint and apricot  
           ‘pencil and lead coin’    ‘crayon and dried apricot’

Finally, although the degree of semantic compositionality varies from one speaker to the other, the non-head in these examples can be transformed into a modificational phrase:

- (26) a. kurşun ol -an kalem    b. ?kuru ol -an boya  
           lead be -ADJZR pen(cil)    dry be -ADJZR paint  
           pencil’                        ‘crayon’

Following Borer (1988, 2009) and Ralli & Stavrou (1998), we call these concatenations *constructs*.<sup>17</sup> The results of the diagnostic tests applied to three categories can be summarized in Table (3):

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<sup>17</sup> The existence of constructs versus compounds has been postulated for Modern Greek by Ralli & Stavrou (1998), as far as multi-word Adjective-Noun concatenations are concerned. In line with Borer (1988), they argue that similar to compounds, certain concatenations of this sort are created in the morphological module, while many others, which mainly consist of the so called-relational adjectives and nouns are generated in syntax.

Test\Category	Compounds	Constructs	NPs
	<i>demir el</i> iron hand 'squeezer'	<i>kurşun kalem</i> lead pen(cil) 'pencil'	<i>taş duvar</i> stone wall 'stone wall'
element insertion	NO	?	YES
non-head substitution	NO	YES	YES
ellipsis of the non-head	NO	NO	YES
modificational phrase	NO	?	YES

**Table 3: Distribution of the tests to compounds, constructs and phrases**

The existence of *constructs* is not limited to Turkish. Borer (1988) discusses the existence of *construct (state nominals)* in Modern Hebrew within the *parallel morphology* model (see Borer 1984, 1988, among others), according to which morphology and syntax are grammatical components, with their own operations and constraints, which are not placed in a linear order, but by being parallel, they may interact in several respects. Within this model, word formation occurs at all levels (Deep-/Surface-Structure; PF), and syntactic operations may apply at any stage of derivation.

According to Borer both compounds and constructs are  $X^0$ s since they have a lot in common (main stress on the same place, inability of direct modification of the head...etc). However, although both behave like *words*, compounds have an idiosyncratic meaning, and are syntactically opaque, whereas constructs are up to a certain degree semantically and syntactically transparent. As a result for Borer, compounds are created in morphology and before the application of any syntactic operations, while constructs are built in syntax.<sup>18</sup>

Borer's classification of nominal concatenations seems to provide a tidy account of bare NN concatenations in Turkish as well. Compounds could be postulated to occur within the morphological module, while syntax is responsible for the creation of NPs.

As for constructs, we align with Borer (1988, 2009) in that we propose a syntactic formation but also visibility to certain word-formation rules. However, not all constructs show the same degree of compositionality in the *bir*

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<sup>18</sup> For Borer, the reason why both constructs and compounds behave like *words*, even though they are created in syntax and morphology respectively, is due to a specific operation, which she calls 'secondary percolation', according to which in compounds, morphological information cannot percolate from the head (or from the non-head if the head is feature unspecified) up to the maximal projection, due to the integrity of the internal structure. In contrast, in the syntactically built constructs, the features of the head (or from the non-head if the head is feature unspecified) can percolate to the maximal projection.

insertion test. Constructions such as *kuruşun kalem* ‘pencil’ (23a) are more compositional in structure than *kuru boya* ‘dry paint/crayon’ (23b) which is more resistant to *bir* insertion.

Finally, by taking into consideration the three types of bare NN concatenations, and their varying degree of structural and semantic opacity, we would like to adopt Ralli’s (to appear) proposal about similar cases in Greek, in that they are placed on a continuum. Compounds should occupy one end of the continuum, while the other end, as a logical outcome, must be occupied by NPs. As for constructs, they are situated in between these two ends.

## 5 Concluding Remarks

In this paper, we have attempted to clarify two basic issues with respect to Turkish bare NN concatenations: a) the disagreement among linguists about the lexical category of their internal constituents, and b) the shortcomings of the position of accepting all of them as compounds.

Following Braun & Haig (2000) we demonstrated that nouns and adjectives do not form distinct lexical categories in Turkish. Rather, there is a whole set of nominals, the members of which stand on a continuum according to the varying degree of adjectiveness/nouniness they display. A basic categorization of nominals into adj-like, no-pref and nouny reveals that the bare NN concatenations, cited either as adjective-noun compounds or noun-noun compounds in the literature, are in fact inter-categorial concatenations ([no-pref+nouny], [adj-like+nouny], [adj-like+no-pref]), and that not all these constructions are compounds. Among the bare NN concatenations, true compounds show semantic non- (or semi-) compositionality and their internal structure is not accessible to syntax. Bare NN concatenations also include NPs, which are syntactically and semantically fully compositional, and which may behave as compounds or NPs in certain morpho-syntactic environments. The latter are borderline cases between syntax and morphology, and we call them constructs, aligning with Borer (1988, 2009) and Ralli & Stavrou (1998). Finally we proposed that the three categories are placed on a continuum, the members of which range from compounds to NPs, the constructs being in between the two poles.

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