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Typological aspects of phrasal compounds in English, German, Turkish and Turkic

Abstract: This paper discusses the properties of phrasal compounds in English, German, Turkish and Sakha, a Turkic language. Two questions are addressed: 1. What is the formal status of elements building (phrasal) compounds? 2. How can we distinguish compounds from phrasal forms? A number of traditional definitions and criteria are discussed, and the result is that they do not suffice to properly account for compounds, let alone phrasal compounds. The languages under discussion are investigated and compared. The result is that in English, German and Turkish tight semantic relations exist between the phrasal non-head and head, but in Turkish additional structural restrictions apply, (especially in reference to the (non)-argument status of the head) which may be due to the rich morphology of this language. The study on Sakha reveals that some phrasal compound types are similar to the Turkish types, without being identical to them.

Keywords: Lexical Integrity Hypothesis, Germanic languages, Turkish/Turkic languages, semantic approach, argument structure

1 Introduction

At first glance, defining the phenomenon of compounding seems to be straightforward. But by taking a closer look at the numerous definitions proposed in the literature, we quickly realize that it rather is a challenging task. Jespersen (1942: 134f.) defines compounds in a general way as "a combination of two or more words to function as one word, a unit". However, he points out that whereas formal criteria like stress and inflection do not suffice to unambiguously define compounds, the semantic criterion does: for him a word is a compound "if the meaning of the whole cannot be logically deduced from the meaning of the elements separately" (Jespersen 1942: 137). Marchand (1969) provides a much more explicit definition: "When two or more words are combined into a

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morphological unit on the basis of a determinant/determinatum relation we speak of a compound" (Marchand 1969: 11). Although the determinant/determinant relation can be seen as a semantic criterion which then would make the definitions of Jespersen and Marchand similar, Marchand stresses that it is a grammatical criterion as well: in line with the 'sentential source hypothesis' of word formation (Lees 1965), he assumes that compounds, being syntagmas, must be explainable from an underlying sentence whose syntactic relations they reflect. Thus, a compound like *dining room* is explainable from the sentence "(we) dine in the room". The syntactic relations between the verb and its arguments are largely determined by the semantics of the constituent morphemes. Plag (2003: 195) defines a compound as a modifier-head relation where the head is the most important unit modified by another unit which does not have this status. Marchand's determinant/determinatum relation is defined here in more modern (generative) terms along the lines of Williams's (1981) Right-hand head rule: "In morphology, we define the head of a morphologically complex word to be the right-hand member of that word" (Williams 1981: 248). Just by looking at these few definitions makes it clear that up to now no definition for compounds has been proposed which has been unanimously approved by experts in the field of morphology. But why are (conventional) compounds so hard to define? And if compounds consisting of (at least) two words are hard to define, what about compounds containing a phrasal non-head? The task seems to be even more challenging.

Lieber & Štekauer (2009) identify two main reasons: First, many of the definitions are solely based on English data. But we know that cross-linguistically the elements that make up compounds are formally quite different, they need not have the status of free-standing words but can also be stems or roots. Second, sometimes it is very hard to distinguish between a compound and a phrase. For Lieber & Štekauer two questions concomitantly arise: what is the formal status of elements making up compounds? (micro question), and how do we distinguish compounds from phrasal forms? (macro question). The first question relates to a cross-linguistic investigation of compounding which so far has not yielded satisfying results. Donalies (2003) discusses ten criteria which are commonly assumed to define compounds and applies them to nominal determinative[1] compounds in Germanic, Romance, Slavic, Finno-Ugric, Modern Greek, Armenian and Turkish. The results of her study are:

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1 The determinative compound is the type of compound in which the first element semantically determines the second element. For example, *piano player* is a kind of player, so the first element *piano* semantically determines the second element *player*. These types of compound exhibit a modifier-head structure (cf. Marchand 1969, Bisetto & Scalise 2009, and Bisetto, this volume).

Compounds
a.   are complex
     Donalies: compounds consist of at least two constituents
b.   are formed without word-formation affixes
     Donalies: immediately built without word-formation affixes
c.   are written as single words
     Donalies: there is a tendency to write them as single words but sometimes
     this tendency is not adhered to
d.   have a specific stress pattern
     Donalies: in most languages compounds have specific accentual patterns
e.   include linking elements
     Donalies: some compounds include linking elements, some do not
f.   are right-headed
     Donalies: compounds are either right-headed or left-headed just like phrases
g.   are inflected as a whole
     Donalies: yes
h.   are syntactically inseparable
     Donalies: yes, but phrases may sometimes be inseparable as well
i.   are syntactico-semantic islands
     Donalies: sometimes
j.   are conceptual units
     Donalies: yes (like established phrases)

Based on her cross-linguistic investigation of these ten criteria she proposes the
following definition: "Compounds are combinations of at least two constituents.
They are immediately built without word-formation affixes. Compounds are built
by rules of word structure and are not syntactically well-formed phrases built by
syntactic structure. This is evidenced by the fact that they are only inflected on the
head (as opposed to phrases)" (Donalies 2003: 90, translated into English by CT).

Clearly, most of the criteria discussed are not reliable and are therefore not
part of Donalies's definition. And even the three criteria she claims to hold cross-
linguistically – compounds are complex (a.), immediately built without word-
formation affixes (b.) and inflected as a whole (g.) – have to be treated with
caution: most of her statements are based on single word analyses which surely
do not provide a comprehensive picture of the languages in question. Moreover,
some criteria do not seem to be very helpful because stating that there is a
difference between compounding (which can include a word-formation affix as
-*ung* in *Verbesserungsvorschlag* 'suggestion for improvement') and derivation
(where the attachment of a word-formation affix as -*ung* in *Verbesserung* creates
a new word) does not explain what the difference really is (criterion b.).

Criterion e. which states that compounds may include linking elements is again too weak although at this point Donalies does take into account cross-linguistic differences. Turkish is a language which exhibits a compound marker on the head of the compound when the non-head is a noun (cf. Kornfilt 1997: 474), for example the compound *buzdolabı* 'fridge' contains the nouns *buz* 'ice' and *dolab* 'cupboard' and the compound marker *-ı* having the same shape as the possessive marker for the third person singular (cf. Donalies 2003: 82). What is immediately not clear is why she classifies this phenomenon as a linking element since obviously the Turkish compound marker does not link the first and the second element in the way that German linking elements like *-s* (*Verbesserungsvorschlag*) or *-en* (*Blumenvase* 'vase') link the nouns within the compound. But it is exactly these differences between languages which should be explicitly discussed and investigated to come to a better understanding of compounding.

All in all we agree with Lieber & Štekauer (2009) when they state that the quest for a proper definition of compounding goes on, and that we need "... to broaden our focus and look for both theoretical perspectives that might bring new insight to the questions that compounds raise, and data from widely diverse languages that might be brought to bear on the issue of definition" (Lieber & Štekauer 2009: 14). And this issue is even more pressing if different types of compounding are taken into account, one such type being phrasal compounds (PCs) which is of main interest in our paper and in the other contributions to this volume.

The second question Lieber & Štekauer raise relates to a clear demarcation of compounding and phrasal forms which in somewhat broader terms tackles the distinction between morphological complexes and syntactic phrases. At the outset of generative morphology it was important to stress that syntactic rules can neither look into nor operate on the internal structure of words. One of the first versions of the *Lexical Integrity Hypothesis* in the eighties postulated that "no syntactic rule can refer to elements of morphological structure" (Lapointe 1980: 8, known as the *Generalized Lexicalist Hypothesis*). In a similar vein, Bresnan & Mchombo (1995) stated in the mid-nineties that words are unanalyzable units:

> A fundamental generalization that morphologists have traditionally maintained is the *lexical integrity principle*, which states that words are built out of different structural elements and by different principles of composition than syntactic phrases. Specifically, the morphological constituents of words are lexical and sublexical categories–stems and affixes–while the syntactic constituents of phrases have words as the minimal, unanalyzable units; and syntactic ordering principles do not apply to morphemic structures (Bresnan & Mchombo 1995: 181).

It should be mentioned that at that time a strong and a weak version of the LIH was distinguished, the former also including inflection (in addition to derivation

and compounding) as word structure which cannot be affected by syntactic transformations (cf. Spencer 1991, Lieber & Scalise 2007).

In their paper on Bantu noun class markers, Bresnan & Mchombo (1995) applied the following five tests of lexical integrity:

1. extraction: constituents of words cannot be extracted by syntactic operations
2. conjoinability: while functional categories do not undergo morphological derivation and thus can link syntactic categories, stems and affixes cannot
3. gapping: syntactic constituents can be gapped, morphological constituents cannot.
4. inbound anaphoric islands: while phrases can contain anaphoric and deictic uses of syntactically independent pronouns, derived words and compounds cannot.
5. phrasal recursivity: word-external phrases allow embedding of syntactic phrasal modifiers whereas word-internal constituents do not.

According to Bresnan & Mchombo (1995), these operations are not possible in words, i.e. lexical integrity holds. Phrasal compounds, however, challenge the notion of lexical integrity: First of all, in this type of compound a syntactic phrase occurs as non-head which is a violation (of the strong version) of the *Lexical Integrity Hypothesis*. Second, phrasal modifiers can occur in the phrasal non-head:

(1)   It would have an elite of politically conscious and publicly conscientious active citizens and a majority of **couldn't-care-less passive citizens**. (BNC, APE 552)

Third, Meibauer (2003, 2007) has shown that in some examples the phrasal non-head does not behave like an anaphoric island:

(2)   *Damals wurde die **Gott$_i$-ist-tot-Thematik** in allen Zeitungen diskutiert, aber wir glaubten nicht daran, dass **er$_i$** tot ist.*
       'In those days the god-is-dead topic was discussed in all newspapers, but we did not believe that he was dead.' (Meibauer 2007: 243)

Anaphorical binding between *Gott* and *er* is possible because the phrasal non-head is more transparent than a unit with wordhood status (see also Meibauer, this volume).

In sum, all of these observations speak against lexical integrity (for a discussion of a further relevant phenomenon, 'suspended affixation', see section 3 on Turkish/Turkic) and in favor of an analysis of phrasal compounds where

syntactic rules at least partly operate on the structure of this type of compound. A further observation which corroborates this view has to do with morphological recursion. It is well-known that the rule for building determinative nominal compounds can be applied to the product of this rule infinitely (see (3a), while such recursion is ill-formed in phrasal compounds such as (3b):

(3a) peanut butter → peanut butter cup → peanut butter cup shop, etc.

(3b) ?"learn what is there and don't question it" attitude → "learn what is there and don't question it" "understand what you have learnt" attitude

It could well be that this restriction is subject to extra-grammatical factors like limitations of processing. Nevertheless, this pair of examples illustrates that phrasal compounds do not behave like normal compounds.[2]

Bresnan & Mchombo don't view phrasal compounds as a genuine challenge for the *Lexical Integrity Hypothesis*; they simply state that the phrasal non-heads of such compounds are lexicalized, which means that they have a non-syntactic status and must be analyzed as quotations. What is problematic in Bresnan & Mchombo's assumptions is that the "... **lexicalization** of phrases can be **innovative** and context-dependent [emphasis CT & JK]" (Bresnan & Mchombo 1995: 194). According to Lieber & Scalise (2007) their claim implies that any phrase in a compound is listed instantaneously. Although certainly a number of phrasal compounds exhibit this property (e.g. *the Ich bin ein Berliner speech*), very many are built on the fly as will be shown below. Thus the problem remains and cannot be explained away.[3]

Recently, a number of authors have called the *Lexical Integrity Hypothesis* into question, and based on problematic data they have admitted that intra-modular interaction exists and should be modeled respectively (cf. Ackema & Neeleman's 2004 mixed model which includes the operation of Generalized Insertion). We have seen that phrasal compounds are a good starting point in reassessing the *Lexical Integrity Hypothesis* as well as the models and analyses hitherto proposed to account for this type of compound. We believe that broadening our perspective by empirically investigating this phenomenon

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2 Note, however, that it is not entirely clear if morphological recursion is not a property peculiar to determinative nominal compounds. Compare recursion with non-nominal compound types like adjective+adjective (*icy-cold* → *icy-frosty-cold* → *icy-frosty-wintry-cold*) which seems to be possible. This aspect clearly needs further investigation.

3 As we will point out in section 3 on Turkish and Turkic, the phenomenon of Suspended Affixation is problematic for the Bresnan & Mchombo approach to Lexical Integrity, as well, given that it applies into words. For some additional discussion of this point, see Kornfilt & Whitman (2011).

typologically will allow us to gain insights into the nature of phrasal compounds as well as into the nature of morphology and its interactions with other levels or modules of language.

In the following section, we will present a comparison of phrasal compounds in English and German and some suggestions of how to analyze them before we take a look at phrasal compounds in Turkish and a number of Turkic languages and suggest an analysis (section 3). Section 4 concludes.

2 Phrasal compounds in English and German

According to Hawkins's (1983) typology, English and German, both being West Germanic languages, share quite a number of typological features: both languages show prepositions (on_P [*the table*]$_{NP}$, auf_P [*dem Tisch*]$_{NP}$), and the orders Numeral-Noun (*two*$_{NUM}$ *books*$_N$, *zwei*$_{NUM}$ *Bücher*$_N$), Demonstrative-Noun (*the/this*$_{DEM}$ *book*$_N$, *das/dieses*$_{DEM}$ *Buch*$_N$), Possesssive-Noun (*his*$_{POSS}$ *book*$_N$, *sein*$_{POSS}$ *Buch*$_N$), and Adjective-Noun (*red*$_A$ *books*$_N$, *rote*$_A$ *Bücher*$_N$). Further, both languages exhibit the orders Genitive-Noun (*Eric's*$_{GEN}$ *book*$_N$, *Erics*$_{GEN}$ *Buch*$_N$) and Noun-Genitive (*the book*$_N$ [*of Eric*]$_{GEN}$, *das Buch*$_N$ [*von Eric*]$_{GEN}$) and the order Noun-Relative Clause (*the book*$_N$ [*that I read*]$_{REL}$, *das Buch*$_N$, [*das ich gelesen habe*]$_{REL}$). English and German deviate in some aspects in that German marginally exhibits postpositions ([*den Fluss*]$_{NP}$ *entlang*$_P$ 'along the river') and relative clauses which precede the head noun ([*das von ihm gelesene*]$_{REL}$ *Buch*$_N$ 'the by him read book'). And whereas English displays SVO order in general, including in embedded clauses (*I know that he*$_S$ *read*$_V$ *the book*$_O$) and (Auxiliary) Verb First in interrogatives (*Has*$_V$ *he read the book*$_O$?), German displays SOV in embedded clauses (*... weil er*$_S$ *das Buch*$_O$ *las*$_V$), Verb First in interrogatives (for both main and auxiliary verbs) (*Las*$_V$ *er*$_S$ *das Buch*$_O$?; *Hat*$_{AUX}$ *er*$_s$ *das Buch*$_O$ *gelesen*$_s$?) and Verb Second in declarative main clauses and in certain embedded clauses (*Das Buch*$_O$ *las*$_V$ *er*$_S$ *gestern; (er sagte)*, *er*$_s$ *habe das Buch*$_O$ *gestern gelesen*$_V$).

Since modifiers generally precede the noun in both languages we expect to find similarities in morphological structure. Evidence for this assumption comes from a study by Trips (2006) who discusses the rise of genitive compounds in English and German. Following others (cf. Pavlov 1983, Demske 2001 for German, and Sauer 1992 and Allen 1998 for English) she assumes that syntactic phrases consisting of a prenominal genitive and a modified head noun develop into morphological structures, i.e. genitival compounds. As a result, at some point in the history of these languages phrases like Old High German (OHG) *senefes korn* 'mustard seed' and Old English (OE) *cinnesmen* 'kinsmen' became structurally ambiguous: they showed both a referential (syntactic structure) and a non-referential (morphological structure)

interpretation. Moreover, in the course of time the genitive ending -*es* was no longer analyzed as an inflection marker. Evidence of this are cases with an unexpected form as Early New High German (ENH) *bauersmann* 'farmer man' (true genitive: *bauernmann*) and ME *londes-men* (true genitive: *land-men*). In theoretical terms, Trips assumes that during this development syntactic phrases lose functional structure and referentiality and develop into lexical structure on the word level. What remains then is the ordering of the modifier and its head. It would be interesting to see if what seems to hold for English and German also holds for the development of morphological structures in other languages, and even more so if we include the ordering of the phrasal non-head and the head noun of PCs in our investigation.

2.1 A formal inventory of PCs in English and German

According to Meibauer (2003) (German) PCs have the structure YP + X where YP semantically determines the head. This is to say that PCs are always determinative compounds. Further, PCs are right-headed, their heads have to be nominal, and the phrasal non-head shows a phrasal intonation pattern. Concerning the forms the phrasal non-heads (YP) can take, Trips (2014, forthcoming) proposes a distinction between PCs containing a predicate and PCs not containing a predicate. In the following, these two types will be exemplified for German (data from Ortner & Müller-Bollhagen 1991, Schmidt 2000, Meibauer 2003) and English (Trips 2012, 2014, forthcoming):

i)   Phrasal compounds not containing a predicate:

NOM-PREP-NOM
(4a)   a cost per case basis
(4b)   *Einfälle-pro-Minute Wert*
        (idea-per-minute value)

PREP-NOMP
(5a)   a "with a run" proviso
(5b)   *der Ohne-mich-Standpunkt*
        (the without-me-standpoint)

NOM-*and/und*-NOM
(6a)   a "chicken and egg" situation
(6b)   *das Kraut-und-Rüben-Prinzip*
        (the weed-and-carrots-principle, 'higgledy-piggledy' principle)

ADV-NOM

(7a) the "out of touch" policy

(7b) *der "Zurück-zur-Natur"-Trend*
       (the back-to-nature-trend)

NOM-*of*-NOM (NOM-GEN attribute)

(8a) a "sword of Damocles" hanging

(8b) *die Krieg-der-Sterne-Waffen*
       (the star-wars-weapons)

ii)   Phrasal compounds containing a predicate:

Verb-*and/und*-Verb

(9a) a "wait and see" mentality

(9b) *die Ächz-und-Hock-Gymnastik*
       (the groan-and-squat-gymnastics)

Verb-Object

(10a) the "show the shirt" routine

(10b) *das Straßennamen-lesen-Tempo*
       (the read-streetnames-tempo)

Verb-Modifier

(11a) the "recycle at all costs" policy

(11b) *der Leichter-Leben-Kalender*
       (the live-easy-calendar)

Subject+Predicate (full declarative sentence)

(12a) the "I knew as much" smirk

(12b) *der Irgendwas-stimmt-nicht-mit-dem-Jungen-Blick*
       (the something-is-wrong-with-the-boy-look)

Copula construction

(13a) this "Steffi is great" attitude

(13b) *das Die-Welt-ist-schlecht-Gejammer*
       (the the-world-is-bad-whining)

Directives

(14a) a "kick me please" type

(14b) *die "Wünsch-Dir-was"-Zeit*
       (the make-a-wish-time)

Directives with *let/lass*

(15a) a "let it happen" attitude

(15b) *der Lass-uns-Freunde-bleiben-Spruch*
(the let-us-stay-friends-saying)

Questions

(16a) the "isn't it a nice day" stage

(16b) a "gee-whiz, would you believe it?" fashion

(16c) the "What should we do now?" variety

(16d) those "he did what?" examples

(16e) *das "Was-hättest-du-jetzt-am-liebsten-hier?"-Spiel*
(the what-would-you-like-to-have-most-here-game)

(16f) *die Wie-werde-ich-ganz-schnell-reich-Geschichten*
(the how-do-I-get-rich-quickly-stories)

2.2 Semantic properties of the nominal head of phrasal compounds in English and German

Apart from providing a formal description of PCs in German, Meibauer classified them according to the concept the nominal head denotes. This classification is fully applicable to English PCs as will be shown with the following examples. For each concept an English and a German example are provided (we restrict ourselves to PCs with a predicate)[4]:

(17a) INDIVIDUAL
We are left with the fun loving (overgrown kids) and the **"I am not going to miss out on the fun" brigade.** (HP6 1079)

(17a') *Meine-Frau-versteht-mich-nicht-Geliebter*
(my-wife-understands-me-not-lover)

(17b) PROPERTY
Martinho was watching, with that **"I've got nothing to do with this" look** that he put on when he fucked things up good. (H9N 1983)

(17b') *Irgendwas-stimmt-nicht-mit-dem-Jungen-Blick*
(something-is-wrong-with-the-boy-look)

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4 The German examples are from Meibauer (2003) which are given without context, the English examples are from Trips's corpus of PCs from the *BNC*.

(17c) ATTITUDE

He claimed that he was sick of **this "Steffi is Great" attitude** and he accused you of showing favour towards Steffi. (A0V 485)

(17c') *Meine-Freunde-sagen-Luc-zu-mir-Freundlichkeit*

(my-friends-say-Luc-to-me-friendliness)

(17d) ACTION

They can't fool me with **that "powdering my nose" act**.

(A0D 1728)

(17d') *Wer-ist-der-beste-Mann-Duell*

(who-is-the-best-man-duel)

(17e) UTTERANCE

If you are being pressurised by someone, use this tactic; it's **the "I'm just looking, thank you"** or **the I'll go away and think about it" response** to the pushy salesperson. (CEF 1025)

(17e') *"Keine-Macht-den-Drogen"-Schmarrn*

(no-power-to-the-drugs-rubbish)

(17f) MEDIUM CONVEYING utterance

FREED from a lift in his Harare hotel, the Bearded Wonder sends us **a "Weather hot, cricket wonderful" postcard** from Zimbabwe. (K52 2291)

(17f') *Keiner-mag-mich-leiden-Brief*

(no-one-likes-me-letter)

(17g) TIME

Radio brought the main news from the outside world; nuclear tests in the Pacific, civil rights marches in America, the coronation of Queen Elizabeth and **the "never had it so good" era** in Britain. (H7E 1024)

(17g') *Ich-wasch-mein-Auto-vor-der-Haustür-Zeit*

(I-wash-my-car-in-front-of-the-door-time)

(17h) THING

Most eventually got honorary Lifetime Achievement Awards – alias **the "Whoops, sorry, we forgot you" Oscars**, or even **"**Whoops, sorry, we didn't know you were still around", as happened to Sophia Loren in January, thirty years after she won Best Actress for Two Women. (ABS 2601)

(17h') *Ich-bin-doch-nicht-blöd-Markt*

(I-am-not-stupid-market)

Interestingly, only few cases of the THING type occur (the few other examples found are *a "cut and sew" jacket*, *the "Try your strength" machine*, and *the "We're not going heavy" sweetener*) whereas the preponderance of occurrences are classified as MEDIUM CONVEYING UTTERANCE. In section 2.5 we will see that this finding corroborates the analysis proposed by Trips.

2.3 Textual features determining the occurrence of PCs in English

In this section, we will briefly discuss the textual features which determine the occurrence of PCs (in English). This aspect relates to the status the phrasal non-heads have, i.e. whether they are lexicalized (permanently stored as a fixed item) or not. According to Bresnan & Mchombo phrases which are part of words are always lexicalized (see above); in contrast, according to Hohenhaus (1998) PCs are non-lexicalizable: for him they are context-dependent nonce formations which tend to be conversational and occur in a restricted realm, i.e. speech. By looking at Meibauer's (2003, 2007) findings we must conclude that there are PCs that have the status of being lexicalized but that there are many more which are not. This is confirmed by Trips's corpus study which partly also confirms Hohenhaus's assumption. Although the PCs in the BNC predominantly have the status of being built on the fly they overwhelmingly occur in writing:

Table 1: Distribution of PCs across mode of speech.[5]

Spoken or written

Category	No. of words	No. of hits	Frequency per million words
Written	87,903,571	1394	15.86
Spoken	10,409,858	3	0.29
Total	98,313,429	1397	14.21

The three occurrences from the spoken part of the BNC are given below:

(18) The other kind of camp on is erm **the "ring no reply" camp on**. (KS6 508 PS6KK)

(19) Which is why it's a very good idea when you next go into your offices this afternoon, to rock the receiver, like this, because any camp ons put on the wrong extension on **the "ring no reply" camp on** will be matured, on a first come first served basis, so that's how people get to talk to you. (KS6 513 PS6KK)

(20) It's full of **the "So what?" syndrome**. (KRP 986 PS62R)

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5 Note that the results of the study only refer to PCs with quotations, for an account including other types as well see Trips (forthcoming).

The examples in (18) and (19) exhibit the same type of PC – *the "ring no reply" camp on* – which was uttered in a dialogue during a telephone system training by one and the same speaker. Obviously, the PC denotes a technical term and thus very likely has the status of a lexicalized phrasal non-head. The example in (20) was uttered during a dialogue at the Environmental Health Officers' conference and may have the status of being non-lexicalized. Note that in (18) the speech filler *erm* precedes the PC and indicates a delay in the flow of speech. Although in this case we would assume that there are no processing effects, it would be very interesting to see in a psycholinguistic experiment whether there is a correlation of increased fillers when PCs are produced in speech. This aspect awaits further research.

Considering the distribution of PCs across text type we gain the following picture:

Table 2: Distribution of PCs across text type.

Text type			
Category	**No. of words**	**No. of hits**	**Frequency per million words**
Written miscellaneous	7,437,161	159	21.38
Written books and periodicals	79,187,792	1232	15.56
Written-to-be-spoken	1,278,618	3	2.35
Context-governed	6,175,896	3	0.49
Demographically sampled	4,233,962	0	0.00
Total	98,313,429	1397	14.21

PCs are a written phenomenon, and they predominantly occur in books and periodicals, but also in publicity leaflets, brochures, fact sheets, school and university essays or letters. The following examples illustrate and confirm the fact that there is no correlation between mode of speech type and lexicalized/non-lexicalized status of PCs: lexicalized PCs may occur in speech, and non-lexicalized PCs may occur in writing:

(21)   By day it's very much **a "let's get a sunlounger and lie on the sand" sort of resort** and the sandy beach is well equipped with everything you'll need in the way of bars, restaurants and shade, and there are several places to waterski, windsurf and parascend or try your hand on the wet bikes (AM0 1208, Club 18-30 summer holiday brochure 1990).

(22)   It is a real link, not just **a "we'll be thinking of you from time to time" relationship.** (CC1 205, Queen's Park Baptist Church Magazines)

(23) We are left with the fun loving (overgrown kids) and **the "I am not going to miss out on the fun" brigade.** (HP6 1079, Scottish Amicable Newsletter)

2.4 A sketch of a conceptual-semantic analysis of PCs

So far we have dealt with a number of formal and semantic properties of English and German PCs, and we have taken a look at the distribution of PCs in the BNC. The picture we have gained is that formally and semantically PCs in both languages under investigation behave in a similar fashion. Due to the lack of a corpus-based study of German PCs we may further assume that the patterns found in the BNC are likely to be found in a corpus of German. These similarities are not sheer coincidence but rather follow from the conceptual-semantic nature of PCs (at least in these languages). In the following, we will briefly introduce Trips's approach which is based on the distinction between PCs containing a predicate and PCs not containing a predicate (see section 2.3 again).

Bisetto & Scalise (2009: 48) claimed that phrasal compounds are attributives: the non-head phrases act as properties that characterize the head nouns, and the non-head has a metaphorical interpretation. Their assumption is based on examples like *floor of a birdcage taste*, *punch in the stomach effect* and *pipe and slipper husband*. But what about PCs with non-heads containing predicates (see (24))?

(24a) this "Steffi is great" attitude
(24b) the "Whoops, sorry, we forgot you" Oscars

As mentioned above, Trips (2012, 2014, forthcoming) assumes that to properly account for the nature of PCs a distinction has to be made between PCs like *pipe and slipper husband* not containing a predicate ([−pred]) and PCs like *"Steffi is great" attitude* containing a predicate ([+pred]). The latter type contains a proposition which is based on truth values. Whereas we could say that an underspecified relation exists between the phrasal non-head *pipe and slipper* and the nominal head *husband* ($R (x_1, x_2)$), and world knowledge, inferencing, and the context will define the actual relation, this cannot be said for the [+pred]-type. This can be seen by the fact that *this "Steffi is great" attitude* does not have the meaning "Steffi is great" is an attitude, rather "Steffi is great" is an utterance which expresses an attitude. Here, the relation between the phrasal non-head and head is based on a specified relation (Jackendoff's IS-A relation) which involves instances of metonymy. More precisely, *this "Steffi is*

great" attitude has the meaning [X is an attitude and X is expressed by a/n statement/utterance like "Steffi is great"]. The writer producing this PC connects the phrasal non-head with the non-phrasal head. To do so, the reader has to use his or her world knowledge to find a situation in which it is typical to express an attitude with exactly this utterance. Sometimes, the relation between the source and target content in the same cognitive domain may be indirect and complex, in our case at hand the reader typeshifts the utterance to an attitude which is an instance of a (psychological) state. In all cases of PCs which contain a predicate the instantiation of metonymic coercion is needed to link up the phrasal non-head and head semantically. This difference does not surface on the level of form: all of the PCs discussed here do have a phrasal non-head, which implies that looking at the structure only does not lead us to an adequate analysis. This is why a conceptual-semantic analysis is needed.

3 Phrasal compounds in Turkish and Turkic

Picking up where the previous section left off, we would like to show that the sketch of phrasal compounds we offered in the introduction, and which we discussed in detail for English and German, also holds for languages which are otherwise typologically quite different, namely some Altaic languages. We will take Turkish as a representative of these languages for our discussion of phrasal compounds, but we will also address facts from Sakha as a representative of a relatively large number of Turkic languages which differ from Turkish in some respects. We will see that (just like for the English and German data) semantic considerations do play a role in understanding some of those differences.

In this section, we will first illustrate some typological properties of simple compounds in Turkic; we will then briefly address, as promised, some problems for Lexical Integrity posed by the phenomenon of Suspended Affixation (SA); we then turn to phrasal compounds, and in particular to those where the non-head consists of clausal sequences; it is in the realm of the latter that differences among the Turkic languages emerge, and where semantic considerations play a role, leading to morpho-syntactic differences, as well.

3.1 Relevant typological properties of Turkish/Turkic, and simple compounds

Turkish and the Turkic languages are SOV (unless they have been heavily influenced by Indo-European, e.g. Gagauz) and, more generally, they are quite strictly

head-final. This means that in nominal phrases, the head noun is phrase-final and is thus preceded by quantifiers and adjectives; in relative clauses, the modifying clause precedes the head noun (phrase); in possessive phrases, the possessor precedes the possessee; in compounds, the non-head precedes the head.

With respect to simple compounds (and, as we shall claim later on, in all compounds), we submit that there is a clear contrast in (most of the) Turkic languages between a non-head as complement (or argument; cf. "subordinate" in the terminology of Bisetto & Scalise 2009) and as an adjunct ("attribute" in the B&S terminology). Note that in this discussion of Turkish/Turkic, we limit ourselves to endocentric compounds that are headed.

This contrast is expressed overtly via the compound marker (CM) –(s)I(n) on the head of the compound, when the non-head is an argument of the head.[6] This type of simple compound is illustrated below:

(25) *dilbilim   öğrenci-si*
      linguistics student-CM
      'linguistics student; student of linguistics'

Here, *dilbilim* 'linguistics' is the argument of the head noun, i.e. *öğrenci* 'student'. According to the traditional characterization of such compounds in Turkish (and Turkic) grammars, the compound marker shows up when the non-head is nominal and does not show up if the non-head is non-nominal, e.g. if it is an adjective, or if it is a noun which is used in an "adjectival" (i.e. attributive) way, e.g.:

(26) *altın bilezik*
      gold   bangle
      'golden bangle'

Although *altın* 'gold' is a noun, it is used attributively here, i.e. like an adjective (note the translation 'golden'), and thus there is no compound marker on the head noun.

But if we follow this traditional characterization, at least two questions arise:
1.   Why should the category of the non-head matter and be expressed somehow on the head?

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6   This statement has to be taken with a grain of salt and will have to be refined in future research: it is often difficult to determine what an argument of a noun is; this is much easier to determine with a verb. As a working definition, we will view arguments of a head to be elements that satisfy at least part of the semantic definition of that head.

There is also a related, but independent question:

2. What is the nature of this compound marker?[7]

Göksel (2009) addresses both questions in the following way:

1. Nouns (noun phrases) are typical arguments; when there is a compound marker and the non-head is not a noun, but a phrase (especially a clause), the basic "frame" for simple compounds is used:

    N – N +CM

    The phrase is inserted into the non-head "N-position"; (cf. also van Schaaik's (2002) "compounding straightjacket", where the same approach is proposed; note that Ackema & Neeleman's (2004) "Generalized Insertion" operation could be mentioned in this context, as well, i.e. as inserting a clause under the putative N-node of the non-head in a compound "frame"); we shall come back to the issue of non-nominal non-heads of compounds later on;

2. The compound marker is directly related to the "possessive agreement" forms in possessive phrases and is identical in shape to the third-person singular possessive agreement morpheme, but it is semantically bleached. Göksel therefore proposes that this compound marker has the same phrase-structural position as the possessive agreement morpheme in the hierarchical structure of the noun phrase, and this is why it is impossible to have both the compound marker and the possessive agreement marker realized at the same time: according to her proposal, there would be only one position for the agreement marker – whether it is a genuine agreement marker or a compound marker:

(27a) *yarış araba –* sı
     race car –   CM
     'race car'

(27b) *araba-m*
     car-1SG
     'my car'

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7 Most Turkic languages have a compound marker of this type; other Altaic languages such as Standard (Khalkha) Mongolian do not. In future research we plan to look at other Mongolian languages which are morphologically richer (for example, with respect to consistent morphological marking of agreement) than Khalkha Mongolian and which may have such a compound marker.

Combination of the two:
(27c) *yarış araba-m*
     race   car-1SG
     'my race car'

And not:
(27d) **yarış araba-sı-m*
     race   car-CM-1SG
     Intended: 'my race car'

We have the following reservations against this proposal:

1.   While arguments may be typically nouns (actually, noun phrases), we know that they also can be sentences/clauses, i.e. propositions. This is so with verbal heads and their arguments, and also with nouns that have argument structure. Thus, we don't need to refer to a basic *N-N* "straightjacket" of compounding to also accommodate non-heads that are not nouns; if the compound marker is there to somehow express the relationship between the head and the non-head as a head – argument relationship, the same marker would have to be there both for nominal non-heads and for phrasal (including clausal) non-heads, as long as such an argument-head relationship exists;[8]

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8   We assume here that nouns, and not just verbs, have argument structure; this assumption has been made by other researchers, as well; an early example is Löbner (1985). However, in this study, we are more permissive than in the relevant works in using this term. For example, we assume that not only nouns derived from verbs in a variety of ways have argument structure, but that simple nouns can have arguments, as well. As mentioned in the text, even loose semantic relations between a head noun in a compound and the (nominal or phrasal/clausal) non-head qualify for us as satisfying the argument structure of a head noun in a compound. Thus, expressions of locality and temporality, which would be analyzed as adjuncts of a verb in a verb phrase would fall under our term of "argument", when they stand in *some* semantic relationship to the head noun in a compound. This view may be seen as too permissive. However, it is well-known that obligatory arguments of verbs can be optional for related nouns; e.g. in *the Ottomans conquered Constantinople*, neither the agent nor the patient can (usually) be omitted. However, while the usual criterion for an argument is its obligatory status, this is not found in related nouns; thus, *the conquest of Constantinople* is fine, as is *the Ottomans' conquest* – yet, the noun phrases *the Ottomans* and *Constantinople* are characterized by many researchers as arguments of the noun *conquest*. Thus, we see that the argument structure of nouns is much more "elastic" than that of verbs, at least with respect to going from obligatory to optional. What we propose is an addition, possibly parameterized, in the opposite direction: expressions that are optional when they show up with verbs and are therefore characterized as adjuncts can be characterized as arguments of nouns, as long as they are in some semantic relationship with the noun.

2. The strength of the claim concerning a single slot in the NP/DP for either a compound marker or a possessive agreement marker is not clear. Even if we were to accept it, we would still need an additional statement about the "higher" possessive agreement marker winning the battle for that single slot, over the compound marker, as in example (27c) above.

It is hard to tell when there are stacked compound markers on the head, whether "the highest wins" principle is at work there, as well – but clearly, only one compound marker can be realized:

(28) *Stuttgart müzik festival-i*
      Stuttgart music festival-CM
      'Stuttgart music festival'

The combination of the following two compounds in (29) yields the complex compound in (28), with just one compound marker, rather than (30), which is ill-formed with its two compound markers:

(29a) *Stuttgart festival-i*
      Stuttgart festival-CM
      'Stuttgart festival'
and
(29b) *müzik festival-i*
      music festival-CM
      'music festival'

(30) **Stuttgart müzik festival-i-si*
      Stuttgart   music festival-CM-CM
      Intended: 'Stuttgart music festival'   [see also Göksel 2009]

The apparent elision of the lower compound marker in favor of the higher one, as well as the elision of the compound marker in favor of the possessive agreement marker cannot be a purely syntactic issue, as proposed in Göksel (2009), where the author follows Arslan-Kechriotis (2006).[9] This is because the semantics have to be able to use a complete syntactic representation to arrive at

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9 Tat (2013) addresses this "elision" phenomenon, as well. For her, the Stuttering Prohibition proposed in Kornfilt (1986), motivating the "elision" in question, does hold, but post-syntactically, in a Distributed Morphology framework.

a proper interpretation of such examples. In other words, the stacked compounds, as well as the compounds embedded in a possessive structure, must be transparently realized in the syntax. Hence, the ban against immediate sequences of the compound marker, or else of the compound marker and the possessive marker(s) must be a morpho-phonological one (cf. Kornfilt 1986), due to a single realization in a post-syntactic morpho-phonological component. A similar morpho-phonological constraint is found in other Turkic languages, too (e.g. Kirghiz, Kazakh, Uyghur, Sakha and others).

Our proposal concerning the presence and the nature of the "compound marker" is as follows: While, indeed, the compound marker is morpho-phonologically related to the (third person singular) "possessive" (i.e. nominal) agreement marker, its (obligatory) presence in (certain, perhaps all) compounds in Turkish/Turkic is independent from the nominal nature of the non-head in compounds. Instead, we propose (as indeed also mentioned in Göksel 2009, but not pursued) that this marker expresses an argument – head relationship between the non-head and the head of the compound; however, differently from Göksel, we propose that this takes place independently from the category of the non-head.[10]

Further, we motivate the presence of this marker in these circumstances via Keskin's (2009) "jump-start mechanism", which essentially says that for a complement (of a predicate) to be licensed, the subject of that same predicate has to be licensed first. This is viewed as a strong typological tendency and not as a universal. Most languages are claimed to exhibit that tendency, and Turkish is claimed to be one of those languages.

Given that in many languages, including Turkish, the subject is licensed by agreement (i.e. overt morphological agreement) on the predicate (probably in conjunction with "strong" tense and/or aspect – see George & Kornfilt 1981, Chomsky 1981, and related work), it would follow that for the complement of

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10 Note that in more recent work, namely in Göksel (this volume), this idea is at least partly adopted, as well; in that study, the author points out parallels between clauses that are clearly complements of a verb, and corresponding phrasal compounds, where the nominal head is derived from that verb and bears the compound marker; the assumption then is as follows: if a phrasal non-head is the complement of a given verb, then the same phrasal non-head must also be the complement of the nominal head in a corresponding compound, provided that the nominal head in question is derived from the verb (e.g. *soru* 'question' [noun], derived from the verb *sor-* 'ask'). For us, the relationship between the head noun and the non-head in compounds bearing the compound marker in Turkish is indeed that of head and its argument, and this holds in general, i.e. in all compounds headed by a noun, rather than only for compounds headed by *deverbal* nouns.

that same predicate to be licensed, there has to be subject agreement. This is what we assume, and propose, in our approach to Turkish/Turkic compounds.

We expand on this proposal here in a number of ways:

1. The agreement in question is not limited to just predicates, but also to nominal heads, such as in compounds;

2. The item whose licensing gets "jump-started" by that agreement can be *any* argument (in the wider sense of "argument" for nominal heads, as mentioned earlier) of the N-head and thus is not limited to being just a complement of the head (to which the agreement morpheme attaches);

3. We will suggest (without taking a strong stand for it at this time) that there is, or can be, a position in compounds which is parallel to the subject in a clause, i.e. a specifier position of the compound, which is in a specifier-head relationship with the agreement marker on the head (i.e. the "compound marker"); because that position is occupied by a phonologically empty element, the agreement morpheme is needed as a licenser; thus, just like in clauses and in possessive phrases, there is an agreement element which licenses a specifier as well as (indirectly) an internal argument; this is the marker which we have called "compound marker". Because the specifier is an expletive, the agreement element is the default 3SG (nominal) agreement marker. Once that specifier is licensed by that default agreement, i.e. by what we have been calling the Compound Marker, the licensing of the non-head in the compound, i.e. the licensing of the argument, can take place.

One reason why we extend Keskin's licensing mechanism from the complement to any argument of the head is the existence of compounds such as the following:

(31)   *sokak*   *sat-ıcı-sı*
       street   sell-PROF-CM
       'Street vendor'

Here, under the most reasonable interpretation, the vendor does not sell streets; s/he sells something or other, and does so *on* the street (although given an appropriate context, this could refer to a seller of streets, as well). Assuming that locational or directional expressions qualify as arguments of a nominal head[11],

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11 Tat (2013) posits a pragmatic relationship between the head and the non-head, rather than a head-argument relation for these constructions. It would take us too far afield to argue against Tat; but the main objection would be that her characterization is much too permissive; with enough imagination, a pragmatic relation can always be posited between a head and a non-head; but not in all instances where a possible pragmatic relationship holds do we have a

we establish an argument-head relationship in this compound – a relationship which calls for a licensing agreement morpheme on the head.

What about compounds whose non-head is not an argument, e.g. is an adjectival modifier? We did see an example of this kind, i.e. (26), and we noticed that such compounds do not carry the compound marker. Wouldn't a silent specifier in such a compound require a licensing default agreement marker (i.e. a compound marker) on the compound head, as well? The answer is negative; in examples such as (26), no such licenser would be needed, because there is no internal argument that needs (indirect) licensing via a specifier; thus, under an approach to phrase structure based on economy, no (silent) specifier is instantiated; in turn, no licenser of a silent specifier is needed, which explains the absence of the compound marker, which would have been the latter kind of licenser.

There may be an alternative explanation: The examples for compounds with non-heads that are not arguments of the head, as for example with adjectival non-heads as in (26), are perhaps not genuine compounds, but are phrases, which would explain their lacking the compound marker. Those instances of such examples which are more compound-like, with unpredictable meanings, might be fully lexical items rather than compounds. This rather radical alternative may be worth exploring in the future, but we shall not pursue it in this study.

Having now made a proposal about the nature of the compound marker, and having also addressed the issue of the ban against sequences of such markers in stacked compounds as well as against sequences of compound markers and possessive agreement, time has come to turn to phrasal compounds. Before doing so, however, we will digress and briefly discuss the issue of Suspended Affixation and the challenge it poses for Lexical Integrity. This digression is to the point nonetheless, given that the compound marker is one of the affixes that can be affected by Suspended Affixation.

3.2 Suspended affixation and compounds

Suspended Affixation refers to a phenomenon of certain affixes, actually suffixes that take scope over a larger domain than the word they are attached to; more specifically, a suffix, or a sequence of suffixes, takes scope over non-final

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compound marker. Of course, for Tat, this is not a problem, given that she limits consideration to nominal non-heads, and that she does not consider phrasal compounds, either. Thus, our objections against the traditional, category-based approach would hold here, as well.

conjuncts in a coordination, while being attached only to the final conjunct – and, where that is a phrase, to its last word. This phenomenon is found in head-final languages with agglutinative morphology, and thus seems to be a typically Altaic phenomenon, although not exclusively so. The morphology thus affected can be verbal as well as nominal; it is the latter type which is relevant to our purposes here. The following examples illustrate this type:

(32) *kitap ve   defter-ler-im*
         book and   notebook-PL-1SG
         'My books and my notebooks'

This example could also mean: 'The book and my notebooks', but the reading given above is the dominant one. It is that dominant reading which is the suspended affixation reading; note that the plural and the first person singular possessive agreement markers are attached only to the second word in the coordination, but they are interpreted as though they were also attached to the first word.

 The compound marker can be suspended, too:

(33) *ders   kitap ve   defter (-ler)-i*
         lesson   book and   notebook(-PL)-CM
         '(A/the) textbooks and notebook(s)'

As shown by this example, the compound marker can be suspended, either by itself, or together with the plural marker.

 It is clear that the phenomenon of suspended affixation challenges Lexical Integrity, at least in its strong version: parts of a word appear to be elided, and the elided parts are interpreted by virtue of parts of another word.[12] Given that we have stated earlier that Lexical Integrity is a principle that has been challenged elsewhere, too, we only point out the existence of suspended affixation as yet another challenge to that principle – an additional phenomenon of the

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12 A discussion of this challenge, as well as additional references, are offered in Kornfilt & Whitman (2011), and in Kornfilt (2012). Bağrıaçık & Ralli's paper in this special journal issue also mentions the Turkish compound marker as one of the suffixes that can undergo suspended affixation, arguing (similarly to Kornfilt 2012) that only syntactically attached suffixes, but not morphologically attached ones, can undergo this process; the authors further view the fact that the compound marker can undergo suspended affixation as supporting their claim that Turkish compounds are formed in the syntax; this latter claim is also made in their earlier work; cf. Bağrıaçık & Ralli 2012 and 2013.

syntax-morphology interface, of which phrasal compounds are the main phenomenon of interest to us. We now turn to phrasal compounds in Turkish.

3.3 Phrasal compounds in Turkish

We have stated earlier that we are primarily interested in the question of how to diagnose phrasal compounds, i.e. how to distinguish them from other constructions.[13] Among the latter, the obvious candidates are syntactic phrases and simple compounds. In Turkish and in other Turkic languages, both tasks are difficult, because some of the widely used diagnostics for other languages do not carry over straightforwardly. For example, primary stress is similar in phrases and (productive types of) compounds: primary stress is on the leftmost subconstituent. With respect to simple versus phrasal non-heads, the analysis is also not always straightforward, given that these languages are morphologically rich, and some of their heavily inflected words correspond to phrases in Indo-European. To illustrate the latter problem, we turn to some constructions that have been analyzed in the literature as simple compounds, e.g. N+N, where either the head, as in (34a), or the non-head, as in (34b), bears a case marker which is, crucially, not assigned compound-externally:

(34a) *al+ben-i*
　　　take+I-ACC
　　　'charm', 'allure' (Lit.: 'take me')
(34b) *gün-e+bak-an*
　　　day-DAT+look.at-PRTCPL
　　　'sunflower' (Lit.: 'the one that looks towards the day')

Both examples are from Göksel (2009), and both of them have been analyzed as simple compounds. While we may choose to get around this particular problem by characterizing examples such as those in (34) as lexicalized, and thus as formations which are not genuine compounds, this does remain an issue, to be addressed in detail in future research.

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13 The examples in this paper for Turkish and Sakha are "introspective data", generated by the second author for Turkish, and by our Sakha consultant, Nadezhda Vinokurova. The Turkish data and the judgments have been checked by the second author with other native speakers of Turkish, and by Vinokurova with other native speakers of Sakha.

In English and German this distinction seems to be clearer. For example, in German, a non-head in a phrasal compound can bear certain inflections (*"Irgendwas-stimmt-nicht-mit-dem-Jungen" Blick* 'something-is-wrong-with-the-boy-look', while a non-head in a simple compound (*Schaukelstuhl* 'rocking chair') would lack such properties.

This brief discussion makes clear that we need other diagnostics for Turkish and the other Turkic languages.

There are at least two diagnostics for compound status: 1. The compound marker on the head; 2. Strict adjacency between non-head (the phrase) and the head. With respect to the discussion and the examples that follow, we shall rely on those diagnostics.

In Turkish, which is the Turkic language we have investigated most thoroughly with respect to phrasal (and other) compounds, various types of phrasal compounds are possible, corresponding to their German and English counterparts. In the examples that follow, we will be particularly interested in those where the phrasal non-head is an entire clause of some sort, i.e. a syntactic structure expressing an entire proposition.

With respect to that type, i.e. phrasal compounds with clausal non-heads, Turkish has a number of options: 1. "Quotational"[14], with clauses that are fully tensed and look like root clauses and have the status of an argument of the N-head; the range of possible head nouns in such phrasal compounds is quite large. 2. Nominalized, with gerund-like clauses which have to be characterizeable as an argument of the head noun. This type further divides into two subtypes, depending on the nominalization morpheme, also leading to some structural differences between the compound structure which they enter as a non-head (cf. Lees 1965, among others, for distinguishing between these nominalization types). The nominalization morpheme is determined by the semantics of the head; given these (semantic/selectional as well as argumental) requirements of the head that the clause needs to satisfy, the range of possible heads is narrower than with the "quotational" type of phrasal compounds. Still, given the compound marker on the head with the quotational type, those need to be viewed as possible arguments of the head, as well, albeit with fewer selectional restrictions. 3. It is also possible to have a "quotational" clause as a modifier, i.e. an adjunct, of a nominal head. However, in this type, the head is phrasal rather than lexical, and thus the entire construction is a phrase rather than a compound. Therefore, this is the construction that we are least interested in for the purposes of the present study. We shall see examples of all of these.

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14 Note that we are not distinguishing here between "quotational" and "citational"—a distinction defended and discussed in depth in Göksel (this volume).

In both main types (i.e. in phrasal compounds with fully tensed and/or with nominalized clausal non-heads), the non-head has to be adjacent to the head (with the exception of certain particles, e.g. focal particles which can intervene). As we mentioned earlier, this is one diagnostic of the compound status of these constructions. In the phrasal, i.e. non-compound counterparts (mentioned under type 3 above), there is no strict sequential requirement between modifier and head.

Note that the particles which can show up between modifier and head in compounds also can show up between items whose nature as a morphological unit is even tighter than in compounds, e.g. in verbs of ability, where they can show up between the root verb and the inflected ability morpheme; e.g. *opera-ya gide-me-ye-**de**-bil-ir-di* 's/he may **also** not have been able to go to the opera'. Thus, the fact that focal particles can intervene between the clausal non-head and the compound head is not a challenge to the compound status of the examples in question.

As just mentioned, Turkish has phrasal compounds that correspond to most of the items in our detailed list of English and German phrasal compounds. Due to space restrictions, we will not give corresponding Turkish examples for each and every item we offered for English and German; instead, we will pick some particularly interesting examples as representatives for their kind, showing correspondences to relevant English and German examples presented earlier. Most of the Turkish examples of phrasal compounds with clausal non-heads will juxtapose type 1 (with quotative non-heads) and type 2 (with nominalized clausal non-heads), and some of them will include, for contrastive purposes, examples of type 3, as well.

3.3.1 (Potentially) phrasal compounds not containing a predicate

Non-head consisting of *N-Case-N*:

(35)   [[*adam baş-ın-a*]   *ücre*t] *hesab-ı*
      person head-3.SG-DAT pay   calculation-CM
      'Pay-per-person calculation'

As mentioned earlier, it is possible that despite the clear case marking, non-heads in compounds such as this one can be analyzed as compounds themselves, rather than as phrases, although here, it would be difficult to argue that the non-head is lexicalized. This, too, is an issue we leave for further research.

Non-head consisting of a conjunction or disjunction:

(36) *"tavuk-mu-yumurta-mı" soru-su*
chicken-Q-egg-Q   question-CM
'The "is it the chicken or the egg?" question'

(37) *ana-baba   saygı-sı*
mother-father respect-CM
'respect for parents'

(38) *baba-lar ve   oğul-lar toplantı-sı*
father-PL and son-PL   meeting-CM
'fathers-and-sons meeting'

It may be questionable whether (36) has a truly predicateless non-head; while there is no overt predicate, it is possible to posit an abstract one, given that the present tense copula in Turkish (and in Turkic in general) is null. (38) shows that plural marking of the non-head is possible, as well as coordination of the non-head. It is thus a better example for a compound with a phrasal non-head than (37), where the bare juxtaposition of two lexical items can be viewed as a lexicalization of this coordination for 'parent'.

Non-head with deverbal noun, including a case-marked argument:

(39) *tabiat-a   dön-üş   politika-sı/siyaset-i*
nature-DAT return-NOM policy-CM/policy-CM
'return-to-nature-policy'

Here, we have a clear-cut example of a phrasal compound, with an obviously phrasal non-head. It could be argued, however, that the non-head is itself headed by a predicative element which is, despite its category as a noun, predicative, due to its verbal root. This, too, is an interesting issue which we shall be investigating in the future.

3.3.2 Phrasal compounds containing a predicate

This type of phrasal compound includes typically a quotation-like fully tensed clausal non-head; however, a nominalized clause is also a possible non-head in many instances; some examples of the latter will be included:

Verb-Verb

(40) *"Bekle, gör-ür-üz" kafa-sı/tutum-u*
     wait   see-AOR-1PL head-CM/attitude-CM
     'wait-and-(we shall) see-thinking/attitude'

Here, no nominalized non-head is possible, perhaps due to the performative character of the verbs.

Verb-Object

(41) *"iç   çamaşır-ın-ı   göster" oyun-u*
     internal laundry-3SG-ACC show   game-CM
     'show-your-underwear-game'

Here, a nominalized non-head is possible, as well:

(42) [*iç   çamaşır-ın-ı   göster-me*] *oyun-u*
     internal laundry-3SG-ACC show-NFNOM game-CM
     'showing-your-underwear-game'

Verb-Modifier

(43) *"Ne paha-sın-a   olur-sa ol-sun tabiat-ı   kurtar" politika-sı*
     what cost-3SG-DAT be-COND be-OPT nature-ACC save   policy-CM
     '"Save nature no matter what the cost" policy'

Here, a nominalized clausal non-head is perfectly well-formed:

(44) [*Ne paha-sın-a   olur-sa ol-sun tabiat–ı   kurtar-ma*] *politika-sı*
     what cost-3SG-DAT be-COND be-OPT nature-ACC save-NFNOM policy-CM
     'Saving nature whatever the cost policy'

Subject+Predicate (full declarative sentence)

(45) *"böyle ol-acağ-ın-ı   baş-ın-dan   beri*
     thus   be-FUTNOM-3SG-ACC start-3SG-ABL since
     bil-iyor-du-m"   sırıtış-ı
     know-PRES.PROGR-PST-1SG   grin-CM
     'The "I knew from the very beginning it was going to be like this" grin'

Here, a nominalized non-head is not possible:

(46) ??/*[*Böyle ol-acağ-ın-ı   baş-ın-dan   beri bil-me*]   *sırıtış-ı*
          thus   be-FUTNOM-3SG-ACC start-3SG-ABL since know-NFNOM grin-CM
     Intended reading: The same as in (45).

(47) *"böyle gider-se baş-ımız-a birşey gel-ecek" korku-su*
      thus   go-COND head-1PL-DAT something come-FUT fear-CM
      'The "If this goes on like this, something will happen to us" fear'

Here, a nominalized clause is possible as the non-head:

(48) [*böyle devam eder-se   baş-ımız-a birşey gel-eceğ-i*]
      thus   continue-COND head-1PL-DAT something come-FUTNOM-3SG
      korku-su
      fear-CM
      'The fear that something will happen to us if things continue like this'
      (Lit.: 'The something's going to be happening to us if things continue like
      this fear')

Copula constructions as non-heads

(49) *"Fenerbahçe takım-lar-ın en   iyi-si-dir"   görüş-ü*
      Fenerbahçe team-PL-GEN most good-3SG-ASSERT.COP view-CM
      '"Fenerbahçe is the best of (all) teams" view'

The corresponding phrasal compound with a nominalized non-head is
fine:

(50) [*Fenerbahçe-nin, takım-lar-ın en   iyi-si   ol-duğ-u*] *görüş-ü*
      Fenerbahçe-GEN team-PL-GEN most good-3SG be-FNOM-3SG view-CM
      'Fenerbahçe's being the best of (all) teams-view'

Non-heads that include directives with *let* (German: *lass*)

(51) *"Bırak   iste-diğ-in-i   yap-sın" tutum-u*
      let (him be) want-FNOM-3SG-ACC do-OPT   attitude-CM
      '"Let him do whatever he wants" attitude'

(52) *"İzin   ver de   arkadaş kal-alım"   laf-lar-ı*
      permission give so that friend   stay-OPT+1PL word-PL-CM
      '"Let us stay friends" words'

In these instances, nominalization of the non-head is not possible, probably due
to the optative on the predicate, and the imperative on the directive verb.

Non-heads that include directives without *let*

(53) [*kız-ma   birader*] *oyun-u*
      get angry-NEG brother   game-CM
      'The "don't-get-angry!"-game'

Non-heads that consist of questions

(54) *"şimdi ne yap-alım"* aşama-sı/soru-su
now what do-OPT+1PL stage-CM/question-CM
'The "what shall we do now?" stage/question'

The nominalization of the non-head is possible here, but permissible heads become more limited with respect to fully tensed non-heads:

(55) [*şimdi ne yap-mak gerek-tiğ-i*]   *aşama-sı/soru-su
now what do-INF necessary-FNOM-3SG stage-CM/question-CM
'The stage/question of what's necessary to do now'

We see that when an embedded question as a non-head is nominalized, there are only certain heads of the compound that are acceptable, namely heads which themselves encode interrogative semantics (such as *soru* 'question); thus, the head *aşama* 'stage' is ill-formed, while in the corresponding phrasal compound with the quotational question non-head, the same head is acceptable (see example (54)). This observation supports our analysis at the end of section 2 (e.g. of examples such as *Steffi is great attitude*), namely that the quotative non-head does not define the head, but rather is a (potential) utterance which expresses the meaning of the head (e.g. "Steffi is great" is not an attitude, but is a potential utterance that expresses such an attitude). Here, "what is necessary to do" *is* not a stage, but is a potentially uttered question which can characterize a stage in a process. This type of relationship between the meaning of the head and of the non-head is not permitted for nominalized non-heads (which of course are not quotational); only a narrower, definitional relationship between the non-head and the head is permitted, as illustrated by (55).

We have not illustrated type 3 so far, i.e. phrases rather than compounds, where the tensed clausal modifier is an adjunct to a phrasal head. While we are not primarily interested in these phrasal constructions, it is instructive to contrast them with types 1 and 2; we shall see that they are rather unrestricted. To see this, let us look at a triplet of examples.

Type 1: Quotative non-head in a phrasal compound:

(56) *"en çabuk nasıl zengin ol-un-ur"*   (*ilginç) hikaye-ler-i
most fast how rich become-PASS-AOR interesting story-PL-CM
'(*Interesting) "How can one become rich fastest?" stories'

Type 2: Nominalized non-head in a phrasal compound:

(57) [*en   çabuk   nasıl   zengin   ol-un-duğ-u*
       most   fast   how   rich   become-PASS-FNOM-3SG

       /*ol-un-abil-diğ-i]*   (**ilginç*)   *soru-su*/*?hikaye-si*
       /become-PASS-ABIL-FNOM-3SG interesting question-CM/story-CM

       'The (*interesting) question/story of how one can become rich fastest'

Type 3: Nominalized modifier (adjunct) clause with a phrasal head; the entire construction is phrasal, i.e. is not a compound:

(58) [[*En   çabuk nasıl   zengin ol-un-duğ-u*]   *hakkında*]
       most fast   how   rich   become-PASS-FNOM-3SG about

       ilginç   hikaye-ler
       interesting   story-PL

       'Interesting stories about how one becomes rich fastest'

Note that this construction does not exhibit the compound marker. In addition, the head can be separated from the nominalized clause by another modifier—in this instance, the adjective *ilginç* 'interesting'. The two phrasal compounds illustrated by the two previous examples exhibit contrastive behavior: Both of them do carry the compound marker, and neither one of them allows separation of the compound head from the non-head by such a modifier.

Note that the head noun *hikayeler* 'stories' is perfectly well-formed in the Type 3 example, while it is questionable at best in the Type 2 example; in both, the non-head clause is nominalized. This contrast shows how the semantic relation between a head and a non-head is different, in addition to being realized differently, within a phrase (Type 3) and a compound (Type 2). In Type 1, a compound, the same head is well-formed as it is in Type 3; but this is due to the quotational nature of the non-head in the compound, which allows for much looser connections between the head and the non-head, as we have seen earlier, too.

The next triplet exhibits similar contrasts; once again, we offer corresponding examples for Type 1, Type 2, and Type 3, in that order:

(59) *"Uyuşturucu madde-ler-e izin   yok!"   saçmalığ-ı*
       narcotic   drug-PL-DAT permission NEG.EXIST stupidity-CM

       'The "No permission to narcotic drugs!" stupidity'

(60) [*Uyuşturucu madde-ler-e izin ol-ma-dığ-ı*]
narcotic   drug-PL-DAT   permission be-NEG-FNOM-3SG
??saçmalığ-ı/OK haber-i
stupidity-CM/news-CM
'The ?? stupidity/OK news of narcotic drugs not being permitted'

(61) [*Uyuşturucu madde-ler-e izin   ol-ma-dığ-ı*]
narcotic   drug-PL-DAT   permission be-NEG-FNOM-3SG
hakkında-ki   (bu) saçmalık
about-REL.PARTICLE   this stupidity
'This stupidity about narcotic drugs not being permitted'

Note that here, the modifying clause is separated from the head; also, the postposition *hakkında* 'about' is followed by the clitic *ki*, which is usually analyzed as a relative phrase marker and, in addition, confers definiteness. Furthermore, the demonstrative *bu* (and other elements of this sort) can show up before the head, clearly demonstrating the phrasal nature of the entire construction, showing that it is not to be analyzed as a compound.

Similar properties are found with respect to "quotational" constructions which form a subtype of Type 3, and not (phrasal) compounds:

(62) [["*Uyuşturucu madde-ler-e izin   yok!*"] *diye*]   *bir saçmalık*
narcotic   drug-PL-DAT permission NEG.EXIST 'saying' a stupidity
'A stupidity (such as) "No permission to narcotic drugs!"'

Here, the quotative clause is followed by *diye*, a participial form of the verb *de* 'say', which adds to the quotational property of the clause. Note that this element is followed by *bir* 'a', the indefinite determiner. In contrast to these properties, no element such as a demonstrative or indefinite determiner can show up in a genuine compound, as shown by the two examples of phrasal compounds that follow – the first with a nominalized non-head, the second with a quotative non-head:

(63) [*Uyuşturucu madde-ler-e izin   ol-ma-dığ -ı*] *(*bu/*bir) haberi*
narcotic   drug-PL-DAT   permission be-NEG-FNOM-3SG this/a news-CM
'(*This/*a) news (item) that narcotic drugs aren't permitted'

(64) *"Uyuşturucu madde-ler-e izin   yok!"*
narcotic   drug-PL-DAT   permission NEG.EXIST
(*bu/*bir) saçmalığ-ı
this/a   stupidity-CM
Intended reading: Same as in the preceding example.

The facts and the correlations we have noticed with respect to phrasal constructions that include clausal non-heads are just as expected:

A. In compounds, we see a compound marker on the head; in phrases, we don't;

B. In compounds, the non-head is more tightly connected to the head than in phrases; this connection manifests itself both in the semantics and selectional restrictions between the head and non-head, and in the syntax; with respect to the semantics and to selectional restrictions, the choice of a head in compounds is more restricted when the non-head is a nominalized clause, compared to the head in phrases, when the non-head (i.e. the adjunct) clause is likewise nominalized; with respect to syntax in compounds, the non-head must remain adjacent to the head, while in phrases the same non-head can be separated from the head (and can also scramble away, which is not possible in compounds).

3.3.3 Textual features determining the occurrence of PCs

In our section 2, we stated that for English and German, phrasal compounds are a written phenomenon, and that they predominantly occur in books and periodicals and the like. In Turkish, as well as at least in Sakha, phrasal compounds are not limited in this way; especially the quotative phrasal compounds can also be found in spoken, colloquial language.

4 Sakha (Yakut) constructions

Sakha is a Turkic language spoken in Siberia, more specifically in Yakutia, which is part of the Russian Federation. Although its phonology and morphology are relatively different from most of the other Turkic languages, its syntax is quite similar. The facts below were contributed by Nadezhda Vinokurova, via fieldwork conducted by the second author of this article, or via personal communication.

Sakha seems to have fully tensed constructions that correspond to N-complement clause constructions in English:

(65) [[[*President kel-er*]   *dien*] *sonun*] *ih-ilin-ne*
         president come-AOR DIEN   news   hear-PASS-PST.3
     'The news that the president is coming was heard.'

(66) [[[*Ehigi kyaj-dy-gyt*] *dien*] *surax*] *tarqan-na*
    you win-PST-2PL DIEN rumor spread-PST.3
    'The rumor that you won spread.'

(67) [[[*Ucuutal oqo-nu* *kyrbaa-byt*] *dien*] *ajdaan*]
    teacher child-ACC beat-PST   DIEN scandal
    (*djoŋ-ŋo bil-in-ne*)
    (people-DAT know-PASS-PST.3)
    'The scandal that the teacher beat the child became known to the people.'

One question that immediately arises is whether these examples correspond to Turkish Type 2 complex constructions, i.e. whether they should be analyzed as phrasal compounds, or whether they correspond to Turkish Type 3 complex constructions, i.e. to complex *phrases* rather than to phrasal *compounds*. More fieldwork needs to be done in order to decide; however, we think that these correspond to Type 3 and are thus phrases rather than phrasal compounds. One reason for our (current) assumption is that the morpheme *dien*, glossed here as DIEN, clearly corresponds to the Turkish *diye* 'saying', which we saw is part of the Turkish Type 3 construction, i.e. a phrasal construction rather than a phrasal compound. Also, note that the agreement morpheme with the subject is placed on the predicate of the clause, rather than on the clause-external head (e.g. in (66) the *-gyt* '2nd plural' after *kyaj-dy* 'win-past'); in Sakha, in constructions where the clause is more tightly connected to a clause-external noun, such agreement is placed on that noun rather than on the clause's predicate:

(68) [*ït*   *ih-iex-teex*] *üüt-**e***
    dog (NOMIN) drink-FUT-MOOD milk-**3SG**
    'The milk the dog should drink'

Note that the 3rd person singular agreement marker, agreeing with the subject of the embedded clause *ït* 'dog', is placed here on the clause-external head noun *üüt* 'milk', rather than on the predicate of the embedded clause. This contrasts with what we find in (66), where the agreement marker with the subject is placed on the predicate of the embedded clause, rather than on the clause-external head, as we noted earlier. Thus, these agreement facts very strongly suggest that the Sakha construction illustrated in (66) is likelier to correspond to the Turkish Type 3, which is a phrasal construction, rather than to the Turkish Type 2, which is a phrasal compound. However, we do need to see to what extent the external noun can be separated from the clause; preliminary field work suggests that it can, but we need additional data.

Sakha has a second type of N-complement clause construction which looks more similar to the Turkish Type 2, and is thus a good candidate for being analyzed as a phrasal compound; the non-head is a nominalized clause, headed by a gerundive predicate (which expresses some tense or aspect distinctions), and the head bears agreement morphology with the subject of the clause:

(69) [[*President kel-er*]   *sonun-**a***] *ih-ilin-ne*
       president   come-AOR news-**3SG** hear-PASS-PST.3
       'The news that the president is coming was heard.'

(70) [[*Et   buh-ar*]   *syt-**a***]
       meat cook-AOR smell-**3SG**
       'the smell of meat cooking'

(71) [[*Ucuutal oqo-nu   kyrbaa-byt*] *ajdaan-**a***]   *djoŋ-ŋo   bil-in-ne*
       teacher   child-ACC beat-PST   scandal-**3SG** people-DAT know-PASS-PST.3
       'The scandal that the teacher beat the child became known to the people.'

(72) [[*En oqo-nu   kyrbaa-byt*] *ajdaan-**yŋ***]   *djoŋ-ŋo   bil-in-ne*
       you child-ACC beat-PST   scandal-**2SG** people-DAT know-PASS-PST.3
       'The scandal that you beat the child became known to the people.'

(73) [[*Ehigi kyaj-byt*] *surax-**xyt***] *tarqan-na.*
       you   win-PST   rumor-**2PL** spread-PST.3
       'The rumor that you won spread.'

With respect to these complex constructions with gerundive non-heads, similar fieldwork needs to be conducted to see to what extent that non-head must be adjacent to the head, and whether the head is lexical or phrasal. It should be further mentioned that in Sakha, the presence or rather the absence of the compound marker is very difficult to establish for phrasal compounds, or at least for those phrasal compounds whose non-head is clausal, as in these examples. This is because of the following reason: While simple compounds in Sakha whose non-head is argumental (and thus mostly nominal) do bear a compound marker, just like their counterparts in Turkish (cf. Vinokurova 2012), it is possible that phrasal compounds with clausal non-heads may not bear that marker for a reason different from the construction's structure: We saw that in Sakha, the head of the construction agrees with the subject of the clause. We also saw that in Turkish, a compound marker is elided when it is followed by a possessive agreement marker. Sakha has a similar phenomenon. Thus, a

compound marker followed by an agreement marker with the clause's subject would not show up – not because the construction is not a compound, but rather because the agreement marker has primacy over the compound marker (cf. Kornfilt 1986). Therefore, we need phrasal compounds in Sakha that have a non-head which does not have a subject and would thus not trigger overt agreement with the head. Despite our efforts, we have not been able to elicit such examples yet.

It is worth mentioning that although these gerundive constructions seem to be more compound-like than the first type with tensed non-heads and with the element *diyen* 'saying', they are nonetheless more permissive than the Turkish Type 2 construction with nominalized non-heads and with clear compound structure. The motivation for this statement comes from examples such as (70), where there is a very loose semantic connection between the non-head and the head. In Turkish, Type 2 constructions, i.e. phrasal compounds with nominalized non-heads cannot be used in this way; neither of the two main nominalization patterns leads to well-formedness; we illustrate first the so-called factive nominalization in (74), and then the non-factive nominalization in (75):

(74) *[*et-in   piş-tiğ-i*]   *koku -su*
     meat-GEN cook-FNOM-3SG smell-CM
     Intended: 'The smell of the cooking meat/of meat cooking'

(75) *[*et-in   piş-me*]   *koku-su*
     meat-GEN cook-NFNOM smell-CM
     Intended: Same meaning as in the preceding example.

Even Type 1, i.e. phrasal compounds with quotative non-heads, are not well-formed when the semantic connection between non-head and head is as loose as here:

(76) ??/* [*et   piş-iyor*]   *koku-su*
        meat cook-PRES.PROGR smell-CM
        Intended: Same meaning as in the two previous examples.

The only relatively well-formed expression of this kind of loose relationship is Type 3 with a quotational non-head, and no compound structure:

(77) [[*et   piş-iyor*]   *gibi*] *bir koku*
     meat cook-PRES.PROGR like a   smell
     'A smell as though meat was cooking'

This leads us to suspect that the second type of apparently clausal Sakha phrasal compounds with nominalized clausal non-heads are not genuine compounds, either, but rather a subtype of a phrasal construction, where the non-head is actually an adjunct of the head.

5 Summary and conclusions

Turkish has phrasal compounds which, just like simple compounds, bear a compound marker on their head. Just like in English and German, there are phrasal compounds whose non-head has no predicate, and phrasal compounds whose non-heads do have a predicate, i.e. non-heads which are clearly clausal. In addition to the compound marker, complex constructions that are compounds rather than phrases exhibit strict adjacency between the non-head and the head. Phrasal compounds fall into two main categories, depending on the nature of their non-head: quotatives and nominalized non-heads can be included in phrasal compounds. A third type of complex construction, with similar interpretations, was shown not to be a phrasal compound, but rather a phrasal construction itself. Phrasal compounds with nominalized non-heads were shown to have tighter semantic as well as syntactic connections between the non-head and the head, as compared with quotative phrasal compounds, and to be governed by stricter selectional requirements between the nominalized non-head and the head. Here a contrast arises between the English/German phrasal compounds, on the one hand, and the Turkish compounds, on the other hand: whereas in the former languages a tight semantic relation between the phrasal non-head and head exists (e.g. between the utterance "Steffi is great", which expresses an attitude and the nominal head *attitude*) and determines the nature of this type of compound, in Turkish this relation exists as well, especially when the non-head is a nominalized clause, *in addition* to structural selectional restrictions. This difference might be explained by the fact that Turkish is morphologically rich, exhibiting heavily inflected words which correspond to phrases in English, German and other Indo-European languages. Put differently, whereas it suffices to have a semantic relation between non-head and head in these languages, further information expressed by morphological agreement is needed in languages like Turkish.

A preliminary study of Sakha phrasal compounds showed certain similarities with Turkish phrasal compounds as well as with the Turkish phrasal construction, and may ultimately be shown to occupy a typological position between the Turkish phrasal compounds and the Turkish phrasal, non-compound construction.

Abbreviations

ABL	ablative
ABIL	abilitative
ACC	accusative
ADV	adverb
AOR	aorist
ASSERT.COP	assertive copula
CM	compound marker
COND	conditional
DAT	dative
FNOM	factive nominalizer
FUTNOM	(factive) nominalizer for future tense
GEN	genitive
INF	infinitive
NEG	negation
NEG.EXIST	negative existential copula
NFNOM	non-factive nominalizer
NOM	nominalizer
NOMIN	nominative
OPT	optative
PASS	passive
PL	plural
PRES.PROGR	present progressive
PROF	profession
PRTCPL	participle
FUT	future
PST	past
PST.3	in Sakha: special past tense form for 3rd person
REL.PARTICLE	relative (adjunct) phrase particle
SG	singular
1/2/3	1st/2nd/3rd person

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