Chapter 8

Phrasal compounds and the morphology-syntax relation

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Phrasal compounds are not an entirely uniform domain: it is necessary to distinguish between four different types of phrasal compounds. I will discuss their characteristics and the distinct analytical challenges. Only one type – the ›genuine‹ phrasal compounds with the non-head corresponding to a non-quotative well-formed syntactic phrase – poses a special problem for the morphology-syntax relation. There are three options for generating ›genuine‹ phrasal compounds: Merge, Insertion, and Conversion. I will argue that Conversion is the most suitable option. The analysis of phrasal compounds will suggest a symmetrical relation between word and phrase formation (phrases can be built on the basis of words *and* words on the basis of phrases) and a ›parallel‹ view of morphological and syntactic structure as fully separate structures with distinct properties.

1 Introduction

At first glance, phrasal compounds seem to be a phenomenon which obviously demonstrates the intrusion of syntax into morphology: phrasal compounds seem to be words that contain syntactic phrases ([$_N$ XP - N]), i.e., phrasal compounds seem not to obey Lexical Integrity. A thorough analysis of this phenomenon, however, might suggest just the opposite: morphology and syntax are separate levels related by interface relations – so, at least, I will argue.

With respect to the relation between morphological and syntactic structure, we can currently distinguish at least three different theoretical positions: morphological structure is a proper part of syntactic structure (Distributed Morphology); morphological and syntactic structures differ to a significant degree, but do overlap to some degree or interact (Ackema & Neeleman 2004; Lieber & Scalise

Jürgen Pafel. Phrasal compounds and the morphology-syntax relation. In Carola Trips & Jaklin Kornfilt (eds.), *Further investigations into the nature of phrasal compounding*, 233–259. Berlin: Language Science Press. DOI:10.5281/zenodo.896369

2006); morphological and syntactic structures are fully separate structures with different properties (see, e.g., Bresnan 2001, Spencer 2010).

Related to these overall theoretical positions concerning the morphology-syntax relation, we have three options for generating phrasal compounds, i.e., three options for relating an XP to the non-head of a compound – Merge, Insertion, and Conversion: we can form a phrasal compound either by merging an XP with the N head of the compound (Lawrenz 2006; Lieber & Scalise 2006; Hein 2015), by inserting an XP in the non-head position of the compound (Ackema & Neeleman 2004; Sato 2010), or by converting an XP into an N which functions as the non-head of the compound (Harley 2009; Pafel 2015).

We will approach these theoretical questions on the basis of a distinction between four different types of phrasal compounds which we can find in Afrikaans, Dutch, English, German, Mandarin Chinese, the Romance languages, and Turkish. What we generally call phrasal compounds are, as we will see, not an entirely uniform domain. I will present the characteristics of these four different types and show that they pose different challenges for analysis. There is just one type – the ›genuine‹ phrasal compounds with the non-head corresponding to a non-quotative well-formed syntactic phrase – which poses a special problem for the morphology-syntax relation, a problem which an account of phrasal compounds has to tackle. I will discuss the question of which of the options for generating phrasal compounds is appropriate to cope with genuine phrasal compounds in such a way that the relation to the other types of phrasal compounds is respected. I will argue that Conversion is the most suitable option (an option which relies on a certain input-output rule), and I will argue that such an account of phrasal compounds presupposes a clear distinction between two aspects of the morphology-syntax relation: the relation between morphological and syntactic structure, on the one hand, and the relation between word formation and phrase formation, on the other. A thorough analysis of phrasal compounds suggests a symmetrical relation between word and phrase formation (phrases can be built on the basis of words *and* words on the basis of phrases) and a ›parallel‹ view of morphological and syntactic structures as fully separate structures with distinct properties.

2 Four types of phrasal compounds

At first sight, one is inclined to define phrasal compounds as compounds whose non-head is a syntactic phrase, as is frequently done in the literature.[1] But, at closer inspection, it becomes evident that the examples discussed – for instance in the literature on German phrasal compounds – are quite heterogeneous: not all of them strictly fit the initial definition. As for German, we can distinguish between four types of ›phrasal compounds‹ which differ with respect to (i) the non-head (not) corresponding to a well-formed syntactic phrase [±WELL-FORMED] and (ii) the non-head (not) being a quote [±QUOTATIVE].

Table 1: Types of phrasal compounds (WELL-FORMED=non-head being a well-formed syntactic phrase; QUOTATIVE=non-head being a quote)

	+WELL-FORMED	−WELL-FORMED
+QUOTATIVE	**Type I**	**Type IV**
−QUOTATIVE	**Type II**	**Type III**

Conceptually, the property of being a well-formed syntactic phrase is clear enough notwithstanding cases where it is difficult to decide whether a phrase is well-formed or not. The property of being quotative is more demanding. I use two criteria to distinguish quotative from non-quotative phrasal compounds. Firstly, paraphrase with pure quotes: in contrast to non-quotative phrasal compounds, the meaning of a quotative phrasal compound can most naturally be paraphrased using a pure quote (e.g. Prince-of-Thieves film = film with the title 'Prince of Thieves'). Secondly, interpretation of indexicals: in contrast to quotative phrasal compounds, indexicals in non-quotative phrasal compounds are interpreted like ordinary indexicals with respect to the relevant utterance situation (compare below § 2.3).

As we will see, it is compounds of **Type II** – which we will call ›genuine phrasal compounds‹ – which pose a special problem for the morphology-syntax relation, a problem which an account of phrasal compounds has to tackle. ›Quotative phrasal compounds‹ (i.e., **Type-I** and **Type-IV** compounds) do not pose a special problem for the morphology-syntax relation as they are N(oun)N(oun) compounds as a consequence of having a quote as non-head, and neither do **Type-III** compounds (›pseudo-phrasal compounds‹) whose non-head does not

[1] See, for instance, Meibauer (2003: 155), Lawrenz (2006: 7).

correspond to a phrase at all. It will become evident that the different types pose distinct analytical challenges.

The classification in Table 1 seems to be cross-linguistically relevant. Languages other than German seem to exhibit all four types (e.g., Afrikaans, Dutch, English, Turkish) or at least some of them (e.g., Mandarin Chinese, Romance languages), and there are languages with no phrasal compounds at all (e.g., Polish and other Slavic languages). As we will see, the classification is compatible with results of diverse researchers investigating phrasal compounds in different languages.[2]

2.1 Quotative phrasal compounds (Type I)

This type of phrasal compound ([+WELL-FORMED, +QUOTATIVE]) consists of a noun preceded by a quote:

(1) a. Afrikaans (Savini 1984: 50; 57)
'hoe-gaan-dit-nog'-brief
how-goes-it-well-letter
'how-are-you letter'

b. Afrikaans (Savini 1984: 50; 57)
ek-het-nog-n'-kaart-in-die-mou-waarskuwing
I-have-still-a-card-in-the-sleeve-warning
'warning by someone that he has still a card up his sleeve'

(2) Dutch (Ackema & Neeleman 2004: 124, Booij 2002: 148)

a. 'waarom-leven wij?' probleem
'why-do-we-live? problem'

b. Doe-het-zelf-winkel
'Do-it-yourself shop'

c. ver-van-mijn-bed-show
'far-away-from-my-bed show'

(3) English (Trips 2012: 324; 325; 326)

a. 'wait and see' mentality

[2] What won't be dealt with here is to relate these types to the classification of semantic classes of heads, as we can find them in Meibauer (2003: §6.1.1), Trips & Kornfilt (2015: §2.2), Göksel (2015: §2.3) and Hein (2015: Kap. III.2.3).

b. ‘show the shirt’ routine
c. ‘kick me please’ type
d. Prince-of-Thieves film

(4) German (Fleischer & Barz 1995: 45; Meibauer 2007: 250)

a. Kaufe-Ihr-Auto-Kärtchen
buy-your-car-card
‘I-buy-your-car card’
b. Lauf-dich-gesund-Bewegung
‘run-yourself-fit movement’
c. Trimm-dich-Pfad
‘keep-fit path’

(5) Mandarin Chinese (Wiese 1996: 185, Fuyuan Zhou (personal communication))

a. ‘yi-guo-liang-zhi’-zhengce
one-country-two-system-politics
‘one-country-two-systems politics’
b. ‘Bai-hua-qi-fang’-yundong
hundred-flower-simultaneously-blossom-campaign
‘Hundred Flowers Campaign’

(6) Turkish (Trips & Kornfilt 2015: 307; 308)

a. “tavuk-mu-yumurta-mı” soru-su
chicken-Q-egg-Q question-CM
‘is-it-the-chicken-or-the-egg? question’
b. “Bekle, gör-ür-üz” kafa-sı/tutum-u
wait see-AOR-1PL head-CM/attitude-CM
‘wait-and-(we shall) see-thinking/attitude’

The quote in these phrasal compounds is a ›pure quote‹, not a ›citation‹ (cf. Pafel 2011 for this contrast). A pure quote is part of a metalinguistic utterance as, e.g., in (7); a citation is part of a speech representation as, e.g., in (8). With respect to a citation, it makes sense to ask for the reference of indexicals and other referential expressions. Pure quotes differ: it makes no sense to ask for the reference of the indexical in (7) – in contrast to (8):

(7) The sentence ‘I buy your car’ is a declarative sentence.

(8) She said to me: »I buy your car.«

The quotes in phrasal compounds behave like the pure quote in (7): it makes no sense to ask for the reference of *me* in (3c), *Ihr* in (4a), *dich* in (4b), or the persons alluded to by the suffix *üz* in (6b).

Research on quotation came independently to the conclusion that pure quotes are nouns (cf. Jespersen 1924: 98 footnote 1; Klockow 1980: Kap. III.2.2.1; Ackema & Neeleman 2004: 153; Pafel 2007; 2011; Vries 2008: §5). Consequently, phrasal compounds of **Type I** are NN compounds and, semantically, they have the same structure as ordinary N_1N_2 compounds: »being an N_2 which stands in relation R to N_1« with R often being a pragmatically supplied relation of various kinds (as for the relation R in phrasal compounds compare Meibauer 2015). See (9a) for illustration. The compound contains the quote *‘I buy your car’* and the head noun *card*, and it has the meaning: »being a card displaying the writing ‘buy your car’« or, shorter, »card with the writing ‘buy your car’«

(9) a. *Kaufe-Ihr-Auto-Kärtchen* = card with the writing ‘buy your car’
b. *Lauf-dich-gesund-Bewegung* = movement with the slogan ‘Run-yourself-fit’
c. *Prince-of-Thieves film* = film which has the title ‘Prince of Thieves’

Multiple N recursion is possible with phrasal compounds. Phrasal compounds of Type I can be a proper part of compounds: they can be the head (see 10) or the non-head of a compound (see 11), and they even can be contained in a phrasal compound (in 12a a phrasal compound of Type I is part of a phrasal compound of the same type, in 12b it is part of a phrasal compound of Type III – cf. 18a, and in 12c it is part of a phrasal compound of Type II – cf. 29a):

(10) German (personal knowledge)
a. Pseudo-Trimm-dich-Pfad
pseudo-keep-fit-path
b. Hartz-IV-Trimm-dich-Pfad
Hartz-IV-keep-fit-path
c. Hochglanz-‘Kaufe Ihr Auto’-Kärtchen
high-gloss-‘buy your car’-card

(11) German (personal knowledge)

a. Trimm-dich-Pfad-Gestaltung
keep-fit-path-construction

b. Trimm-dich-Pfad-Bewegung
keep-fit-path-movement

c. 'Kaufe Ihr Auto'-Kärtchen-Inflation
'buy your car'-card-inflation

(12) German (personal knowledge)

a. 'Du schaffst es!'-Trimm-dich-Pfad
'You succeed!'-keep-fit-path

b. Vor-Trimm-dich-Pfad-Zeit
before-keep-fit-path-time

c. Zwischen-den-Zeilen 'Ihr könnt mich mal'-Attitüde
between-the-lines-'Up yours!'-attitude

Thus, phrasal compounds of **Type I** are regular NN compounds morphologically and semantically. Further they obey the principle »Words do not contain syntactic phrases«, i.e., they obey one version of Lexical Integrity (cf. Pafel 2015).

The fact that pure quotes are nouns has an interesting consequence. There must be some ›conversion‹ of phrases into words, as far as phrasal compounds of **Type I** are concerned. See the example in (13) and its analysis in (14) for illustration: the sentence *I think so* is quoted, and is located at the position of the noun in a noun phrase, and it is inflected as a noun.

(13) English (cf. Jespersen 1924: 96 footnote 1)
His speech abounded in many I think so's.

(14) a. $[_{\text{sentence}}$ I think so]

b. $[_{\text{noun phrase}}$ many $[_{\text{noun}}$ I think so's]]

c. $[_{\text{word[N]}}$ $[_{\text{stem[N]}}$ I think so] -s]

Thus, quotation and its analysis is a relevant topic, if we are interested in phrasal compounds. Note that possibly every language which exhibits phrasal compounds has phrasal compounds of **Type I**. Quotation is interesting as we find the same puzzling and challenging phenomenon: something which is a syntactic

phrase gets a new life as a word or morpheme if it is quoted. Therefore, the question should be relevant to our topic of which options we have in dealing with generating pure quotes (see § 3).

Phrasal compounds of **Type I** are distinguished as a special class of phrasal compounds by several researchers partly independent of one another (see Göksel 2015, Pafel 2015, Trips & Kornfilt 2015).

As phrasal compounds of **Type I** are NN compounds, we could create a category of ›quotative compounds‹ as a special type of NN compounds: they either have a quote as non-head constituent (cf. 15 and the examples already presented of phrasal compounds of **Type I**), or they have a quote as the head of the compound (cf. 16):

(15) a. English
for phrases

b. German
für-Phrasen
'*for* phrases'

c. Turkish (Göksel 2015: 375)
yavasca sözcü-gü
slowly word-CM
'(the) word *slowly*'

d. Mandarin Chinese (Fuyuan Zhou (personal communication))
ba-zi-duanyu
ba-sign-phrase
'*ba*-phrase'

(16) German
Höflichkeits-*Sie*
'politeness *you*'

Thus, in the end, what we called phrasal compounds of **Type I** can be subsumed under a subtype of NN compounds (cf. Göksel 2015).

We can also deal with **Type IV** in the same vain. These phrasal compounds have a quote as non-head which is not a well-formed syntactic phrase, but a sequence of sentences or sentence-fragments. Compare the following examples (I made up examples (17b) and (17c) myself):

(17) a. German (Schmidt 2000: 142)
'Versuche-mir-zu-verzeihen', 'Ich werde-dich-ewig-lieben'-Briefchen
try-me-to-forgive, I-will-you-forever-love-letter
'Try-to-forgive me', 'I-will-love-you-forever letter'

b. German (personal knowledge)
'Nein-vielleicht-doch-ja-vielleicht-aber-eigentlich-doch-nicht'-Gestammel
no-perhaps-after-all-yes-perhaps-but-rather-after-all-not-stammering
'no-perhaps-after-all-yes-perhaps-but-rather-after-all-not stammering'

c. English (personal knowledge)
'Hi-Hi-See-You' conversation

2.2 Pseudo-phrasal compounds (Type III)

The non-head of these phrasal compounds ([–WELL-FORMED, –QUOTATIVE]) neither corresponds to a well-formed syntactic phrase, nor is it quotative, compare Lawrenz (2006: 139) and Pafel (2015) for German:

(18) German (Ortner et al. 1991: 44; Fleischer & Barz 1995: 45; Schmidt 2000: 146; Meibauer 2003: 155)

a. Vor-Nobelpreis-Ära
'before-Nobel prize era'

b. Vor-Ort-Bericht
'on-site report'

c. Zweibettzimmer
'double bedroom'

d. Vater-Sohn-Konflikt
'father-son conflict'

e. Vorher-Nachher-Bilanz
'before-and-after account'

f. Jeder-gegen-jeden-Krieg
'everyone-against-everyone war'

The non-head constituent in (18a), i.e., *Vor-Nobelpreis*, does not correspond to a well-formed syntactic phrase, but has a well-formed morphological structure which mimics a syntactic phrase in the sense that it is built by the same lexical material in the same order, exhibits a similar prosodic structure and is related to a phrasal semantics having the meaning »before the time when Nobel prizes were awarded«.

(19) Vor-Nobelpreis-Ära
Morphological structure: $[[P+N]_P +N]_N$
Meaning: era before the time when Nobel prizes were awarded

Therefore, it is not unreasonable to take them to be phrasal compounds, as the non-head exhibits properties of phrases, even if it does not correspond to a well-formed *syntactic* phrase. The same holds for the non-heads in the other examples.

Phrasal compounds of **Type III** obey Lexical Integrity: the non-head constituent of a pseudo-phrasal compound is not a well-formed syntactic phrase.

It seems that there are similar compounds in other languages, too – but it is at times difficult to judge whether or not the non-head corresponds to a well-formed syntactic phrase.

(20) English (Trips 2012: 323; 324)

a. 'famous for fifteen minutes' type
b. 'first in last out' policy
c. 'two for the price of one' sales
d. 'always on the top' option

(21) Afrikaans (Savini 1984: 44; 65; 67; 71)

a. tafel-en-bank-eenheid
table-and-bench-unit
'unit consisting of a table and (a) bench'
b. been-rek-ruimte
leg-stretch-space
'space in which to stretch one's legs'
c. slaap-wakkerbly-patroon
sleep-awake-stay-pattern
'pattern of sleeping and staying awake alternately'
d. vaal-haar-nooi
dull-hair-girl
'girl with dull hair'
e. nege-oog-reus
nine-eye-gaint
'giant with nine eyes'

(22) Dutch (Booij 2002: 148; 150)

a. breed band antenne
'broadband aerial'

b. twee persons bed
'double bed'

c. aardappel schrap machine
'potato scraper'

d. gooi-en-smijt-film
throw-and-smash-film
'slapstick film'

(23) Turkish (Göksel 2015: 362)

a. yan-ar dön-er meyva
burn-PTCP turn-PTCP fruit
Lit. 'burning-turning fruit'

b. ana baba gün-ü
mother father day-CM
'(a) crowded (place)'

The so-called *polirematiche* 'multiword expressions' in Romance languages like the ones in (24) and (25) are sometimes called phrasal compounds. They consist of a noun followed by a preposition and a noun (N+P+N):

(24) Italian (Bisetto 2015: 397)

a. carta di credito
'credit card'

b. unità di misura
'unit of measurement'

(25) French (Bisetto 2015: 397)

a. verre à vin
'wine glass'

b. fil de fer
'wire'

According to Bisetto (2015: 397f.), the preposition and the following noun differ in their properties from PPs, and therefore it seems wrong to analyze the P+N part as a PP. This means they look like compounds of **Type III**.

2.3 Genuine phrasal compounds (Type II)

The non-head of these phrasal compounds ([+WELL-FORMED, −QUOTATIVE]) corresponds to a well-formed syntactic phrase, but it is not quotative.

(26) Afrikaans (Savini 1984: 39; Botha 2015: 141; 142; 143)

a. laat-in-die-aand drankie
late-in-the-evening drink
'drink taken late in the evening'

b. uit-die-bottel-drink alkoholis
from-the-bottle-drink alcoholic
'alcoholic who drinks straight from the bottle'

c. van-die-rak-pak
from-the-shelf-suit
'suit bought off the peg'

d. maklik-om-te-maak-poeding
easy-for-to-make-pudding
'pudding which is easy to make'

(27) Dutch (Ackema & Neeleman 2004: 124; Booij 2002: 146)

a. hoestend publick syndroom
'coughing-audience syndrome'

b. ijs met slagroom fobie
'ice-cream with whipped-cream phobia'

c. vier-kleuren druk
'four-color printing'

d. hete-lucht ballon
'hot-air ballon'

(28) English (Lieber 1992: 11; Trips 2012: 323)

a. over-the-fence gossip

b. slept-all-day look

c. sex-in-shiny-packets literature

(29) German (Brogyanyi 1979: 161; Lawrenz 2006: 7)

a. Zwischen-den-Zeilen-Widerstand
'between-the-lines resistance'

b. In-Kontakt-bleiben-Geschenke
'keep-in-touch presents'

c. Neid-auf-Reichtum-ohne-Leistung-Steuer
'envy-of-wealth-without-effort tax'

d. Schwerer-als-Luft-Flugobjekte
'heavier-than-air flying objects'

e. Liebe-auf-den-ersten-Blick-Paar
'love-at-first-sight pair'

(30) Turkish (Trips & Kornfilt 2015: 307; 308)

a. baba-lar ve ogul-lar toplanti-si
father-PL and son-PL meeting-CM
'fathers-and-sons meeting'

b. tabiat-a dön-üs politika-si
nature-DAT return-NOM policy-CM
'return-to-nature-policy'

c. [Ne paha-sin-a olur-sa ol-sun tabiat-i kurtar-ma]
what cost-3SG-DAT be-COND be-OPT nature-ACC save-NFNOM
politika-si
policy-CM
'Saving nature whatever the cost policy'

(31) Mandarin Chinese (Fuyuan Zhou (personal communication))

a. fan-fu-zhengce
against-corruption-policy

b. dusheng-zinü-zhengce
single-child-policy
'one-child policy'

The non-head constituent – for example *over the fence* in (28a) – exhibits all characteristics of a well-formed phrase in form and meaning. The phrasal compound itself, however, has the canonical semantic structure of an N_1N_2 compound: »being an N_2 which stands in relation R to N_1« (being gossip which is

transmitted over the fence). Or, see (29a): *zwischen-den-Zeilen* 'between the lines' is a well-formed PP and the compound has the meaning: »being a resistance which hides (or, is located) between the lines«

The exocentric VN compounds in Romance languages like the ones in (32) marginally have a subtype where the verb combines with a phrase, an NP, as in (33).[3]

(32) Italian (Bisetto 2015: 399f.)

a. cambiavalute
'money changer'

b. portavalori
'amored car' (lit. 'carry valuables')

(33) Italian (Bisetto 2015: 399f.)

a. ammazza [libertà digitali]
'digital freedom killing'

b. ammazza [gente che non c'entra niente]
'killing people that have nothing to do with it'

These compounds seem to belong to **Type II**. See Bisetto (2015) for further candidates of phrasal compounds in Italian (which we might classify as belonging to **Type II**).

Type-II compounds differ from quotative phrasal compounds (i.e., **Type-I** and **Type-IV** compounds) in the interpretation of indexicals (cf. Pafel 2015: 277). We have seen in § 2.1 that it does not make sense to ask, with respect to **Type-I** compounds, for the reference of indexicals in the non-head. However, indexicals in the non-head of **Type-II** compounds differ. We can transform the attributive interrogative clause in (34a) into the non-head of a compound (34b) with no noticeable change of meaning (admittedly, (34b) is a quite uncommon way to say what the perfectly normal (34a) says – but it is a possible sentence):

(34) German (personal knowledge)

a. Ich habe die Frage, ob ich glücklich bin, beantwortet.
I have the question whether I happy am answered
'I have answered the question of whether I am happy.'

[3] Note that the compounds in (33) appear as the second noun in a superordinate compound in the corpus data of Bisetto (2015).

b. Ich habe die Ob-ich-glücklich-bin-Frage beantwortet.
I have the whether-I-happy-am-question answered
'I have answered the question of whether I am happy.'

The indexical in the non-head in (34b) is interpreted in the same way as the indexical being the subject of the sentence: they both refer to the speaker of the sentence. The fact that the indexical in the non-head refers to the speaker of the sentence becomes even more evident when we modify the subject of the sentence: sentence (35) has the meaning that everyone answered the question of whether the speaker of (35) is happy, not the question of whether he himself is happy.

(35) German (personal knowledge)
Jeder hat die Ob-ich-glücklich-bin-Frage beantwortet.
'Everyone has answered the question of whether I am happy.'

The relations change when we modify the compound into a quotative one. In this case, the indexicals are no longer interpreted with respect to the utterance situation of the sentence – note that (36a) and (36b) have the same meaning and cannot have the same meaning as (35):

(36) German (personal knowledge)
a. Jeder hat die 'Bin ich glücklich?'-Frage beantwortet.
b. Jeder hat die 'Bist du glücklich?'-Frage beantwortet.
'Everyone has answered the question of whether he himself is happy.'

Thus, we can use the interpretation of indexicals as a criterion to distinguish compounds of **Type I** and **Type II**. With this in mind, we find quite the same distinction in Turkish: Göksel (2015) distinguishes »quotational phrasal compounds« from »citational phrasal compounds«, and Trips & Kornfilt (2015: 305) distinguish between the »quotational« and the »nominalized« type of phrasal compounds. It seems that compounds of this type are ›genuine‹ phrasal compounds, i.e., compounds with a true phrasal non-head: syntax, semantics, and prosody point to this direction. Thus, they pose a challenge to the question of how to fit a phrase into a word.[4] We will approach this question by having a look at how quotative phrases are fitted into a word.

[4] Note that it is feasible to analyze the Dutch and German compounds in (i) and (ii) as non-heads corresponding to a plural noun phrase containing a noun only (cf. Booij 2002: 147).

(i) *Dächermeer* (German), *dakenzee* (Dutch) 'sea of roofs'

(ii) *Häuserreihe* (German), *hiuzenrij* (Dutch) 'row of houses'

3 Quotation and conversion

In an article from 1984, Jackendoff came to the conclusion that »the phrase structure rule responsible for introducing [quotes] violates the normal theory of syntactic categories by permitting a totally free expression« (Jackendoff 1984: 26). This consequence, however, is not mandatory. I know of two options dealing formally with pure quotes, both of which rely on conversion.

In their book *Beyond Morphology*, Ackema and Neeleman take quoting to be zero-affixation: »[T]he operation involves a change in syntactic status, both with respect to category and level of projection. Its input may be a syntactic phrase of any category, but its output consistently shows the distribution of a nominal head. […] The formation of autoreferential expressions must hence be a case of zero affixation« (Ackema & Neeleman 2004: 153-154).

Ackema and Neeleman further argue for an architecture where morphology and syntax are distinct submodules of an encompassing module, generating distinct structures. Nevertheless, they tune their system in such a way that, under certain circumstances, merging of a syntactic phrase inside morphology is allowed. Zero-affixation is a case in point.

Zero-affixation to a syntactic phrase, however, is not sufficient to deal with autoreferential expressions. Firstly, the phrases can be fully ungrammatical, purely non-sensical, or they can mix different languages. Secondly, not only phrases and words can be quoted, but also morphemes, phonemes, graphemes. Pure quotes can thus not be built in Ackema/Neeleman's morphosyntactic module.

The alternative to zero-affixation is conversion by an input-output rule which operates on expressions.[5] An expression can have several kinds of properties: phonological, morphological, syntactic, semantic, and pragmatic ones. The rule takes an expression as input and gives another expression as output whose properties partially depend on the properties of the input expression. In the case of quoting a syntactic phrase, the rule takes an arbitrary expression (which is syntactically a phrase) as input and gives an expression as output which (i) surrounds the input expression's phoneme, or, better grapheme, sequence with quotation marks and which (ii) is morphologically a noun-stem. A decisive point of this input-output rule is that we can convert an expression with syntactic properties into an expression with morphological properties instead. This rule can be generalized as in (37) so that arbitrary linguistic elements can be converted into an expression which is morphologically a noun-stem (for details see Pafel 2015).[6]

[5] Note that I am not interested in the general controversy of whether or not conversion can be reasonably captured by zero-affixation.

[6] The pure-quotation rule can easily take the form of an input-output rule which is formally of the same type as ›constructions‹ in the sense of Sag et al. (2012), ›unary phrase structure rules‹

(37) Pure-quotation rule (simplified)

$$\begin{bmatrix} \textsc{phon} & \textit{phon} \\ \ldots & \end{bmatrix} \Rightarrow \begin{bmatrix} \textsc{phon} & \textit{'phon'} \\ \textsc{morph} & \text{stem[N]} \\ \textsc{sem} & \text{being of shape } \textit{phon} \end{bmatrix}$$

Phrasal compounds of **Type I** have a pure quote as their non-head. That this quote is an N is the result of the application of the pure-quotation rule. Thus, constructing a phrasal compound of **Type I** is the concatenation of two nouns. The phrase-to-word conversion occurs ›previously‹ and is not part of the process of compounding. See for illustration the output of rule (37) for the quote in (13) *His speech abounded in many I think so's*:

(38) Description of the pure quote 'I think so'

$$\begin{bmatrix} \textsc{phon} & \text{<'><I think so><'>} \\ \textsc{morph} & \text{stem[N]} \\ \textsc{sem} & \text{being of shape <I think so>} \end{bmatrix}$$

As for the morphology-syntax relation, pure quotations show that words can be built in tandem with syntactic phrases, i.e., that phrases can be built on the basis of words *and* words on the basis of phrases (phrase-to-word-conversion rules like the pure-quotation rule is the decisive element which makes it possible to build words on the basis of phrases). Nevertheless, we do not have to integrate morphology into syntax to get this result. We can keep the morphological and the syntactic level apart from one another, as two separate dimensions of linguistic expressions.

4 Three options of dealing with phrasal compounds

There are, in principle, as I mentioned in the introduction, three options of generating phrasal compounds if the task is to solve the problem of how a phrase can be a base for a word. The options are Merge, Insertion, and Conversion: we can form a phrasal compound either by merging an XP with an N (the head of the compound), or by inserting an XP to the non-head position of the compound, or by converting an XP into an N which functions as the non-head of a compound. These options come with different accounts of the morphology-syntax relation.

in Kay (2014), and ›lexical rules‹ in Müller & Wechsler (2014), which are all more or less on a par.

We know now that the different types of phrasal compounds require different analyses. Thus, it will not come as a surprise that these three options cannot account for all types of phrasal compounds. They are, first and foremost, options for dealing with genuine phrasal compounds (**Type II**), as we will see in a moment. Therefore, the question arises of how much these options differ from an adequate account of the other types. An option is preferred to the degree that it is related to the other accounts, i.e., an analysis of genuine phrasal compounds should not differ radically from the analysis of the other types.

The first option of dealing with genuine phrasal compounds is Merge. Lieber & Scalise (2006) favor this option. They assume that there is a limited access of morphology to syntax. Syntax and morphology have different principles in constructing phrases and complex words, respectively, and they »are normally blind to each other«. But for a limited domain, morphology can build complex words by merging syntactic phrases. The limited domain is determined in such a way that words with the structure $[[XP]\ Y]_Y$ become possible (cf. the very similar approach in Lawrenz (2006: §II.5) and the construction-grammar variant in Hein (2015: 42, 115)).

Merge seems adequate for genuine phrasal compounds (**Type II**), as their non-head constituent looks like a well-formed syntactic phrase (but note that we have a semantic interpretation which is typical for NN compounds (Lawrenz 2006: 141), Lieber & Scalise (2006) are silent on the semantic interpretation of Merge). This approach, however, is inadequate with respect to quotative phrasal compounds (**Type I**, **IV**) because they are NN compounds, as we have seen. Thus, a quite different approach would be necessary to cope with them, i.e., some kind of conversion. Merge is, also, inadequate for pseudo-phrasal compounds (**Type III**) whose non-head constituent is not a well-formed syntactic phrase. Summing up, the Merge approach plus an additional mechanism is best suited to account for morphology having access to syntax, but it does not cover all types of phrasal compound and leads to a view of phrasal compounds where they appear to be a very heterogeneous set of phenomena.

Ackema & Neeleman (2004) have proposed to deal with phrasal compounds by a certain way of looking at the nature of insertion: insertion in their sense is just a way of feature matching. Morphology and syntax differ substantially, but they are part of an encompassing module, and insertion allows for a limited interaction between them. A syntactic phrase (NP, for instance) can be inserted in an N slot of a NN compound as N and NP have matching features. In contrast to the Merge approach, Insertion takes phrasal compounds to be something which is made possible by the general way insertion works.

However, categorial feature matching seems inadequate, as the »inserted« XP can have various categorial features (nominal, verbal, prepositional, sentential etc.), which would predict that either the phrasal compound can be of a type which is ruled out in some languages (for instance, P(reposition)N(oun) compounds) or that is of a dubious type (non-head corresponding to a sentence should be a word of which category?), cf. Lieber & Scalise (2006).[7] Further, the following points speak against insertion. First, Insertion does not cope with quotative phrasal compounds. We have already seen that conversion is necessary to generate quotative phrasal compounds. Ackema & Neeleman would have to rely on zero-affixation to cope with them. Thus, quotative phrasal compounds would differ in structure from genuine phrasal compounds: no XP is inserted. Second, as for pseudo-phrasal compounds, the structure is inadequate as the non-head constituent is not a syntactic phrase. Ackema & Neeleman's defending claim that the non-head constituent be a well-formed syntactic phrase in telegraphic speech is unconvincing. Take the phrasal compound (39) as an example. We could have (40a) as a headline, but not the unacceptable (40b).

(39) Vor-Nobelpreis-Ära
'before-Nobel prize era'

(40) a. Alles besser damals
everything better then
'Everything was better in former times.'

b. * Alles besser vor Nobelpreis
'Everything was better in the times before Nobel prizes were awarded.'

Insertion doesn't have to treat phrasal compounds as a peculiar phenomenon because the general process of insertion builds them under the assumption that there is limited interaction between morphology and syntax. This predicts that we could find it in every language. But like Merge, it does not cover all types of phrasal compounds and leads to a view of phrasal compounds where they appear to be a quite heterogeneous set of phenomena. (For a similar approach with similar problems in a different framework see Sato 2010.)

The Conversion approach proposes to deal with genuine phrasal compounds by special phrase-to-word-conversion rules. According to Harley (2009), a phrase

[7] Should it be the case that Ackema & Neeleman take phrasal compounds to be always NN compounds, feature matching would become hollow (cf. Meibauer 2007: 243; Sato 2010: 392).

undergoes zero-derivation to a nominal category, i.e., the complex phrase is affixed by a zero n head (n^0):

(41) $[[XP]\ n^0]_{nP}$ (where 'nP' stands for 'noun')

Harley endorses Distributed Morphology, but has to make quite »speculative« assumptions to integrate her analysis into this framework (note that even in a framework which treats word-formation purely syntactically, it is by no means easy to cope with phrasal compounds). As for semantics, the derivation »will denote a concept evoked by the phrasal syntax, though not compositionally determined by it« (Harley 2009: 143); she further assumes that »quotative phrasal compounds evoke a particular attitude that might be attributed to a putative utterer of the phrase in question. Intuitively, the phrase has been fully interpreted, and an associated concept extracted from it — an attitude, in the case of quotatives, or an abstraction from an existing conceptual category, in the case of complex nP phrases as in *stuff-blowing-up effects* or *bikini-girls-in-trouble genre*« (Harley 2009: 142). Apparently, Harley wants to account for quotative and genuine phrasal compounds syntactically and semantically in the same way, which neglects, however, the differences between these two types which we have presented.

According to Pafel (2015), a special input-output rule copes for genuine phrasal compounds. The rule in (42) takes a phrase (XP) as input and gives a noun as output. The phrase and the noun have exactly the same phonology and semantics, and the noun is a bound morpheme, as it does not occur outside of a nominal compound.

(42) XP-to-N-conversion rule

$$\begin{bmatrix} \textsc{phon} & \textit{phon} \\ \textsc{syn} & \text{XP} \\ \textsc{sem} & \text{predicate(x)} \\ & \textit{mean} \end{bmatrix} \Rightarrow \begin{bmatrix} \textsc{phon} & \textit{phon} \\ \textsc{morph} & \text{category: N} \\ & \text{valency: to-its-right-right(N)} \\ \textsc{sem} & \text{predicate(x)} \\ & \textit{mean} \end{bmatrix}$$

Given an XP with an arbitrary phonological form (*phon*) and the semantics of a one-place predicate with an arbitrary meaning (*mean*), the rule accounts for a word which has the same phonology as the phrase, as well as being of the morphological category N, selecting a noun to its right in morphology, and having the same semantics as the phrase. Note that SEM is a separate level for semantic structure, a level distinguished from syntactic structure (for arguments that it is,

in coping with quantifier scope, necessary to distinguish syntactic and semantic level, see Pafel 2005). As SEM but not SYN is relevant for semantic interpretation, the missing SYN feature in the output does not jeopardize semantic interpretation.

This operation can be seen as a kind of nominalization. Thus, we finally would get a canonical NN-compound structure for genuine phrasal compounds. Compare the nominalized gerund-like clauses as non-heads in Turkish genuine phrasal compounds as discussed by Trips & Kornfilt (2015) and Göksel (2015).

(43) Turkish (Trips & Kornfilt 2015: 308)
[ic camasir-in-i göster-me] oyun-u
internal laundry-3SG-ACC show-nfnom game-CM
'showing-your-underwear-game'

Rule (42) is intended to capture genuine phrasal compounds only. Thus, there seems no progress with respect to Merge and Insertion. However, this time genuine and quotative phrasal compounds are captured by two variants of the same operation, i.e., phrase-to-word conversion. This captures the relation between the two phenomena. Additionally, there are two related morphological phenomena, namely phrasal derivation and phrasal conversion, which ask for similar conversion analyses. In (44) a VP or NP is the base for the German nominalizing suffixes *-er*, *-ung* or *-artig*, in (45) a sentence is converted into a noun, a kind of exocentric word formation, and in (46) it depends on the details of analysis of whether this is a case of derivation or conversion:

(44) German (Lawrenz 2006: 8-9)

a. Licht-in-Strom-Umwandl-er
light-in-current-convert-er
'light-in-current converter'

b. Kinder-über-Mittag-Betreu-ung
children-on-noontime-caretake-ing
'children caretaking at noontime'

c. Ruhe-vor-dem-Sturm-artig
quiet-before-the-storm-like
'like the quiet before the storm'

(45) German (Lawrenz 2006: 9-10)

a. (das) Wir-sind-wieder-Wer
the we-are-again-someone
‘(the general) attitude expressed by the slogan ‘We are somebody again”

b. (das) Das-haben-wir-immer-schon-so-gemacht
the this-have-we-always-already-so-done
‘(the) attitude express by the saying ‘We have done this ever since”

(46) German (Lawrenz 2006: 8)
(das) Arm-um-die-Schulter-Legen
the arm-on-the-shoulder-put
‘(the) resting of one’s hand on someone’s shoulder’

As for the analysis of pseudo-phrasal compounds, we don’t have to assume conversion, thus they differ from quotative and genuine phrasal compounds in this respect. They do, however, have the same structure insofar as they are XN compounds. Thus, there is only a minor difference to the structure of quotative and genuine phrasal compounds.

In summary, much speaks in favour of the conversion approach: it seems to deal with phrasal compounds in a satisfying manner, and it especially accounts for the relatedness of the four types of phrasal compounds without neglecting their differences.

5 Conclusions

Phrasal compounds are a challenge to the morphology-syntax relation. The conversion approach makes clear that we should distinguish between two aspects of this relation: the relation of morphological to syntactic structures, on the one hand, and the relation between word and phrase formation, on the other. As for the first aspect, the conversion approach presented presupposes a parallel architecture where morphology and syntax (and semantics) are separate structures (cf. Bresnan 2001, Spencer 2010, Trips 2016). It is not necessary to modify the standard parallel relation between morphological and syntactic structure in order to cope with phrasal compounds. Lexical Integrity in the sense that (morphological) words do not contain phrases is fully respected (cf. Pafel 2015). To the extent that the conversion approach is successful, it contributes to the plausibility of a parallel architecture framework. As for the second aspect, phrasal compounds

point to a symmetrical relation between word and phrase formation: phrases can be built on the basis of words *and* words on the basis of phrases. This speaks against lexicalist approaches which claim that word formation strictly precedes the construction of syntactic phrases. Phrase-to-word-conversion rules (like 37 and 42) is the decisive element which makes it possible to build words on the basis of phrases.

So we can conclude that phrasal compounds are only a phenomenon at first glance which suggests the intrusion of syntax into morphology. A thorough analysis suggests just the opposite: morphology and syntax are separate levels with fully separate structures with distinct properties.

This, then, means that, in morphology, we are dealing with (morphological) words, stems, affixes, etc., and in syntax, we are dealing with (syntactic) words and phrases instead. The structures in morphology and syntax are of quite different character. There is, however, some overlap with respect to the features assumed in morphology and in syntax. Take the categorial and the gender feature as examples. In the default case, the morphological feature and its counterpart in syntax are identical (a morphological noun, for instance, is a syntactic noun). An appropriate general interface relation copes for this identity. But there are interesting asymmetries, i.e., exceptions to this general interface relation. In German, there is a class of words which, as far as syntax is concerned, are undoubtedly nouns. But nevertheless they inflect like adjectives, exhibiting the strong/weak contrast and this is something that nouns normally never do. See the contrast in (47).

(47) German

a. ein fleißig-er Beamt-er
   a busy-NOM.M.SG.STR offical-NOM.M.SG.STR
   'a busy official'

b. der fleißig-e Beamt-e
   the busy-NOM.M.SG.WEA offical-NOM.M.SG.WEA
   'the busy official'

We can account for this phenomenon if we distinguish morphological and syntactic categorial features. Spencer (2010) has proposed analyzing these words syntactically as nouns and morphologically as adjectives.

Concerning gender, we also find an asymmetry. Take a look at the Latin example *agricola* 'farmer'. It is syntactically masculine (as agreement suggests), but it is morphologically feminine (as inflection suggests).

(48) Latin

a. sedul-us agricol-a
busy-NOM.M.SG farmer-NOM.F.SG
'busy farmer'

b. sedul-i agricol-ae
busy-NOM.M.PL farmer-NOM.F.PL
'busy farmers'

In the default case, morphological and syntactic gender are identical, of course. So like phrasal compounds, these asymmetries get a straightforward analysis if morphology and syntax are taken to be separate levels related by interface relations.

Acknowledgements

I am grateful for the stimulating discussions at the workshop im Mannheim in June 2015, as well as for Carola Trips' and an anonymous reviewer's comments on the manuscript.

Abbreviations

AOR	aorist	PTCP	participle
CM	compound marker	STR	strong declension
COND	conditional	WEA	weak declension
NFNOM	non-factive nominalizer		
OPT	optative		

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