Phrasal compounds are compatible with lexical integrity

Jürgen Pafel

1. Introduction[*]

Phrasal compounds are a challenge to the morphology-syntax relation, because *prima facie*, phrasal compounds are words that contain syntactic phrases. Therefore, they are a prominent case against the Lexical Integrity Hypothesis (LIH), which strictly separates morphology from syntax (see Lieber/Scalise 2006 for a recent overview). I will discuss LIH in the sense in which it is equivalent to the *No Phrase Constraint*: words do not contain syntactic phrases.[1]

I will approach this topic by first investigating ›quotative phrasal compounds‹, i.e., phrasal compounds whose phrasal constituents are quotative in character.[2] Relying on results from research on the syntactic and semantic properties of quotes, we will see that quotative phrasal compounds are morphologically and semantically regular NN compounds and, hence, do not pose a challenge, as they do not contain syntactic phrases. Nevertheless, there is a challenge to the morphology-syntax relation, but it is a challenge the theory of quotes has to cope with. The rule which licenses pure quotes is a very general one which encompasses – as a special case – something which amounts to phrase-to-word conversion: the pure quote of a phrase is a noun. It is this aspect of pure quotes which robs quotative phrasal compounds of being a challenge. This is the first point I will argue for.

Now, if all phrasal compounds were quotative phrasal compounds (this is the ›quotational hypothesis‹), all phrasal compounds would be well-behaved, unchallenging NN compounds. The truth of this hypothesis depends on what we take to be phrasal compounds. If we follow common usage, two kinds of phrasal compounds should be distinguished – quotative and non-quotative ones. Quotative phrasal compounds aside, it is the non-quotative phrasal compounds which might be the true challenge to the LIH.

---

[1]   Cf. Botha's (1981: 18, 1984: 137) way of formulating the *No Phrase Constraint*.

[2]   Phrasal compounds consist of two parts. On the one hand, there is the compound's head, usually a noun, and, on the other hand, there is what I will call the »phrasal constituent«. This is meant as a descriptive notion only, that is, it is neutral to the question of what their true morphosyntactic nature might be.

As we will see, however, we can assume phrase-to-word conversion here too, albeit a more specific one. But, before I can discuss this second point, we have to take a brief look into different types of quotes and their properties, in order to understand the nature of phrasal constituents in quotative phrasal compounds.

2. Types of quotes and their properties

There are at least two ways of presenting linguistic material: presentation by pure quote, and citation. In (1a) we have a metalinguistic utterance with a pure quote as subject, and in (1b) we have a speech presentation with a full citation as the object of the main verb.

(1)   a.   'Obama' is a noun.
        b.   In former days, Obama declared: »Yes, we can.«

Syntactically, a pure quote can behave like a noun phrase, albeit it is a sentence which is quoted. See the English examples in (2) and (3). The quote '*that two plus two equals four*' can fill the subject position of the clause (2a), but the quote cannot be extraposed (2b); the subject clause *that two plus two equals four* in (3a), however, can be extraposed (3b).

(2)   a.   'That two plus two equals four' is a dependent clause.
        b.   *It is a dependent clause 'that two plus two equals four'.
(3)   a.   That two plus two equals four is always true.
        b.   It is always true that two plus two equals four.

Thus, the quote behaves like a noun phrase, not like a sentence, albeit it is the quote of a sentence. But it would be premature to claim that pure quotes are noun phrases, as they can be combined with elements which typically occur inside of noun phrases. In (4) and (5), for instance, the pure quote (*das 'alle'*; *many I think so's*) is located in the position where the noun is located in a noun phrase.

(4)   Auf Balzacs Spazierstockgriff: Ich breche alle Hindernisse. Auf meinem: Mich brechen alle Hindernisse. Gemeinsam ist das 'alle'. (Franz Kafka)

                'On the stock of Balzac's walking stick: "I surmount all obstacles." On mine: "All obstacles surmount me." They have the 'all' in common.'
(5)   His speech abounded in many I think so's. (Cf. Clark/Gerrig 1990: 771f.)

A close look at the distributional syntax of pure quotes reveals that they have the distribution of nouns, but not the distribution of noun phrases. This suggests that pure quotes literally are nouns (cf. Klockow 1980: Kap. III.2.2.1; Pafel 2007, 2011; Vries 2008: §5).[3] Sentence (5) is quite instructive in this respect: here, the pure quote is pluralized, which is a clear piece of morphological evidence for it being a noun. As for German, it is obvious from the choice of the article (*das*) in (4) that pure quotes are neuter nouns.

As pure quotes are nouns, one should assume that they semantically are predicates, as nouns usually are. I take pure quotes to be predicates whose meaning is *to have a certain shape*, with the shape being that which the pure quote presents in between the quotation marks (see Pafel 2007, 2011 for details). With this analysis in mind, a sentence like *The expression 'Obama' is a proper noun* can be paraphrased as in (6). (The letters 'O', 'b', 'a', 'm' and 'a' enclosed with angle brackets denote a sequence of letters, ›graphs‹.)

(6)   The expression which has the shape <Obama> is a proper noun.

The properties of pure quotes can be summarized by the »template« in (7), which describes the general structure of pure quotes. It consists of three parts (a phonetic-graphical description, a syntactic and a semantic one) and looks very much like a lexical entry with some variables in it.

(7) Template for pure quotes

PHON/	® α ©
GRAPH	with (i) α being an acoustic or graphical entity and (ii) with ® and © staying for <'> resp. <'>, <"> resp. <">, <»> resp. <«>, <›> resp. <‹>, <"> resp. <"> or similar things or being left empty.
SYN	N
SEM	predicate(x,α)
	λx[x has shape α]

The phonetic-graphical description describes the phonetic-graphical form of the expression: an arbitrary phonetic or graphical entity α is, optionally, enclosed with some kind of quotation marks. There is the syntactic information that the lexical element is a noun (as for German, we would add the gender feature neuter) and there is the semantic information that it is a two-place predicate with the meaning *x has shape α*. The crucial point is that we make use of the variable α – a variable for phonetic-graphical entities –

---

[3]   I assume that this holds for Germanic and Romance language alike.

not only in the phonetic-graphical description, but also in the semantic description of the lexical entry. Thereby, a pure-quote noun makes reference to one aspect of itself, its shape.

Something like this template might form the basis of our capacity of producing and understanding pure quotes. Therefore, its natural place is in the lexicon. In designing the template, nothing unusual has to be stipulated. The fact that a variable is shared by different parts of a lexical entry (»structure sharing«) is something which is very common in theories which work with elaborated lexical entries. And templates of this kind are well-known in constructional approaches to morphology (cf. Riehemann 1998, Jackendoff 2002, Booij 2009 among others).

The relation between the quoted expression and the quote becomes transparent when we present it with help of a »correspondence rule« (»if there is a linguistic expression as given on the left hand side of the arrow, then there is a linguistic expression as given on the right hand side of the arrow«):

(8) Pure-quotation rule

$$
\begin{bmatrix}
\text{PHON/} & \alpha \\
\text{GRAPH} & \\
\ldots &
\end{bmatrix} \Rightarrow
$$

$$
\begin{bmatrix}
\text{PHON/} & ® \, \alpha \, © \\
\text{GRAPH} & \text{with (i) } \alpha \text{ being an acoustic or graphical entity and (ii) with } ® \text{ and } © \\
& \text{staying for <'> resp. <'>, <"> resp. <">, <»> resp. <«>, <›> resp. <‹>,} \\
& \text{<"> resp. <"> or similar things or being left empty.} \\
\text{SYN} & \text{N} \\
\text{SEM} & \text{predicate}(x, \alpha) \\
& \lambda x[x \text{ has shape } \alpha]
\end{bmatrix}
$$

The rule states that to every expression with an arbitrary phonological/graphical form (be it a phoneme, a sequence of phonemes, a morpheme, a word, a phrase etc.) there is a corresponding noun with certain properties, i.e., its pure quote. If we take the proper noun *Obama* as an expression instantiating the schema on the left hand side of the rule, we get the pure quote '*Obama*' as it occurs in (1a):

(9) Description of the pure quote '*Obama*'

$$\begin{bmatrix} \text{PHON/} & \text{<'><Obama><'>} \\ \text{GRAPH} & \\ \text{SYN} & \text{N} \\ \text{SEM} & \text{predicate(x,<Obama>)} \\ & \lambda x[\text{x has shape <Obama>}] \end{bmatrix}$$

In contrast to pure quotes, citations of sentences behave, syntactically, like argument clauses, not like noun phrases or nouns. In German, they are, firstly, most naturally extraposed and can be placed sentence-internally under special circumstances only – see (10).

(10)   a.   Heine hat gesagt "Moritz ist mir der liebste".
                Heine has said "Moritz is me the dearest"
        b.   ?Heine hat "Moritz ist mir der liebste" gesagt.
                Heine has "Moritz is me the dearest" said
                'Heine said "I like Moritz most".'

It is just the other way round with noun phrases (they occur most naturally sentence-internally and can be extraposed under special circumstances only). Secondly, it is not possible to modify a citation in the same way as a pure quote by adding, for instance, a determiner and an adjective in front of it or PP-attributes behind.

(11)   a.   *Heine hat gesagt das überraschende "Moritz ist mir der liebste".
                 Heine has said the surprising "Moritz is me the dearest"
        b.   *Heine said the surprising "I like Moritz most".

Thirdly, parentheticals (out of quotes) can be inserted into citations of sentences in the same way they can be inserted into ordinary sentences.

Thus, there is a clear syntactic difference between pure quotes and citations of sentences. Pure quotes are nouns, citations (of sentences) are sentences.[4] Semantically, (full) citations seem to denote propositions, just as *that* clauses do. Of course, they do so in a very special way, by referring to an utterance situation which is normally not the utterance situation of the speech presentation (see Pafel 2011 for details).

---

[4]   Vries' (2008) contrasting view – he takes citations be to nouns too – lacks the appreciation for the distinction between pure quotes and citations.

3. Quotative phrasal compounds: syntactic and semantic structure

It seems obvious that there are quotative phrasal compounds, i.e., phrasal compounds, whose phrasal constituents are quotative in character. Compare the compounds in (12), which are, for the most part, well-known from the literature on phrasal compounds (in (a) the phrasal constituents are sentential, in (b) non-sentential, in (c) we have bilingual compounds).[5]

(12) a. Kaufe-Ihr-Auto-Kärtchen ('I-buy-your-car card'), Trimm-dich-Pfad ('Keep-fit path'), Lauf-dich-gesund-Bewegung ('Walk-yourself-healthy movement'), Mache-es-selbst-Freizeitbeschäftigung ('Do-it-yourself leisure activity'), Schnallt-die-Gürtel-enger-Ideologie ('Tighten-one's-belt ideology'), Die-Welt-ist-schlecht-Gejammer ('The-world-is-bad cant'), God-is-dead theology, Steffi-is-great attitude

      b. Zurück-zur-Natur-Trend ('Back-to-nature trend'), Merkel-raus-Rufe ('Merkel-out calls'), Ein-Kerl-wie-ich-Visagen ('A-guy-like-me mugs'), Prince-of-Thieves film, language-of-thought thesis, first-in-last-out policy, Race-and-Poll-Tax workshop, Charles-and-Di syndrome

      c. It's-a-beautiful-day-Stimmung ('It's-a-beautiful-day mood'), Fuck-the-EU-Diplomatin ('Fuck-the-EU diplomat'), C'est-la-vie attitude

It seems that many of the phrasal constituents in these examples are pure quotes, as appropriate paraphrases do contain pure quotes. Compare the way in which Meibauer (2007) paraphrases the German compound *Kaufe-Ihr-Auto-Kärtchen* in (13). In his paraphrases (a) and (b), he uses 'Kaufe-Ihr-Auto' as a pure quote. A full-citation analysis as in (14), however, would be totally inappropriate: in understanding the compound, it is not necessary to think of a situation with a certain speaker S and addressee A.

(13) Kaufe-Ihr-Auto-Kärtchen ('I-buy-your-car card')   (Meibauer 2007: 250)

      a. Kärtchen mit der Aufschrift 'Kaufe Ihr Auto'
          card$_{DIM}$ with the writing 'buy$_{1.PS.SG.}$ your car'   (DIM=diminutive)

      b. Kärtchen, auf denen 'Kaufe Ihr Auto' steht
          card$_{DIM}$ on which 'buy$_{1.PS.SG.}$ your car' is written

(14) Kärtchen, auf dem steht, dass S A's Auto kauft
      card$_{DIM}$ on which is written that S(peaker) A(ddressee)'s car buys

Compare the following paraphrases of further examples in (12):

---

5   See Meibauer (2003), Schmidt (2000) and Trips (2012) for many of these examples.

(15) a. Prince-of-Thieves film = film which has the title 'Prince of Thieves'
      b. Fuck-the-EU-Diplomatin = diplomat who uttered 'Fuck the EU'
      c. Zurück-zur-Natur-Trend = trend which propagates 'Back to nature'
      d. It's-a-beautiful-day-Stimmung = emotional mood which is expressed by
          utterances like 'It's a beautiful day'

If the phrasal constituents of quotative phrasal compounds are indeed pure quotes, then these phrasal constituents are nouns and quotative phrasal compounds are NN compounds – because, as we have seen, syntactically, pure quotes are nouns (§2). I do not see any evidence to the contrary, i.e., any evidence that these phrasal constituents might be citations instead of pure quotes.

The semantics of quotative phrasal compounds agrees with the semantic structure of determinative NN compounds. Semantically, the compound ($[\alpha]_N + N_1$) can roughly be described as »being something which is N_1 and which stands in relation R to α«, with α being the phrasal constituent (the pure quote) and R being a relation like *expressing, uttering, having as title* etc.

(16) $\lambda x[x$ is $N_1 \wedge R(x,\alpha)]$

Thus, we have further semantic evidence that quotative phrasal compounds are a subtype of NN compounds.

By the way, there is evidence that such a view applies to quotative phrasal compounds in Turkish too. Compounds in Turkish have a compound marker if the non-head constituent is nominal, the marker, however, does not show up if the non-head is non-nominal (see Göksel 2009, Kornfilt (this volume)).

(17) a. N + N + CM   (CM=compound marker)
      b. A + N + *CM

That in (quotative) phrasal compounds, the compound marker does show up, is evidence for the phrasal constituent being a noun:

(18)   'Bekle, görürüz' tutum-u
          'wait, see' attitude-CM
          'The 'Wait and see' attitude'

4. Quotation and phrase-to-word conversion

As quotative phrasal compounds are regular NN compounds – morphologically and semantically, they are no challenge to the morphology-syntax relation. However, there is still a challenge. But it shifts to the theory of pure quotes. As it is uncontroversial that we can quote arbitrary phrases, producing pure quotes amounts to taking phrases as input and giving nouns as output. That is a challenge for everyone. The pure-quotation rule (19) [=(8)] copes with this challenge.

(19) Pure-quotation rule

$$
\begin{bmatrix}
\text{PHON/} & \alpha \\
\text{GRAPH} & \\
\text{...} &
\end{bmatrix}
\Rightarrow
$$

$$
\begin{bmatrix}
\text{PHON/} & \text{®}\,\alpha\,\text{©} \\
\text{GRAPH} & \text{with (i) } \alpha \text{ being an acoustic or graphical entity and (ii) with ® and ©} \\
& \text{staying for <'> resp. <'>, <''> resp. <''>, <»> resp. <«>, <›> resp. <‹>,} \\
& \text{<"> resp. <"> or similar things or being left empty.} \\
\text{SYN} & \text{N} \\
\text{SEM} & \text{predicate(x,}\alpha\text{)} \\
& \lambda x[x \text{ has shape } \alpha]
\end{bmatrix}
$$

We can apply this rule to a sentential phrase like *A bachelor is unmarried*, whose description might be sketched as in (20). It is an instance of the schema on the left hand side of the pure-quotation rule. Thus, the rule licenses the quote '*A bachelor is unmarried*' in (21).

(20) Description of the sentence *A bachelor is unmarried*

GRAPH   <A bachelor is unmarried>
SYN   S(entence)
...

(21) Description of the pure quote '*A bachelor is unmarried*'

GRAPH   <'><A bachelor is unmarried><'>
SYN   N
SEM   predicate(x,<A bachelor is unmarried>)
            λx[x has shape <A bachelor is unmarried>]

What we have done is convert a sentence, i.e., something phrasal, into a noun. This phrase-to-word conversion is something the pure-quotation rule makes possible without further provisions. It converts one type of linguistic expression into another type of linguistic expression, and it is not just a relabeling on the syntactic side.[6] The quote does not *contain* the phrase, it only contains the graphical properties of the phrase (in GRAPH and SEM). As for its syntax or morphology, it is a plain unstructured N.

Note that this view on pure quotes necessitates words being able to be built in tandem with syntactic phrases, which means that we cannot assume that »syntax« is active after »morphology« has done its work. There is no intrinsic ordering in building words and phrases. In the standard case, phrases are built out of words. But in special cases, words can be built out of phrases. This fact is compatible with lexical integrity: there is no phrase *contained* in such a word, albeit the word is built out of the phrase.

Quotative phrasal compounds rely on the phrase-to-word conversion quotation delivers (and the general rule for creating NN compounds). As this conversion does not presuppose the lexicalization of the phrase, a crucial argument against quotative analyses of phrasal compounds lapses (Meibauer 2007: 240 claimed that the quotational approach to phrasal compounds fails because the phrasal constituent need not be lexicalized).

5. Non-quotative phrasal compounds and lexical integrity

At this point, it is, of course, tempting to embrace the hypothesis that the phrasal constituent in all phrasal compounds is a pure quote.

(22)   The quotational hypothesis
        The phrasal constituent in phrasal compounds is a pure quote. (Cf. Wiese 1996)

The welcome consequence would be: phrasal compounds have a regular morphology and semantics, and pose no theoretical challenge. However, not all of the compounds discussed in the literature on phrasal compounds seem to be quotative.[7] See the compounds in (23).

---

[6]   This is presumably the most important difference to conversion analyses like Gallmann (1990), Wiese (1996), or Lawrenz (2006).

[7]   But note that quotative phrasal compounds might be the most common kind of phrasal compounds (cf. Trips 2012).

(23) Vor-Ort-Bericht ('on-site report'), Vor-Nobelpreis-Ära ('Before-Nobel prize era'), Vier-Augen-Gespräch ('private talk'), Zweibettzimmer ('double bedroom'), Drei-Türen-Problem ('Monty Hall problem'), Dreikönigsfest ('Twelfth night'), Mund-zu-Mund-Propaganda ('word-of-mouth propaganda'), Zwischen-den-Zeilen-Widerstand ('between-the-lines resistance'), over-the-fence gossip, slept-all-day look

None of the patterns which are appropriate for describing the semantics of quotative phrasal compounds seems appropriate here, as paraphrases relying on quotes are more or less beside the point. See, however, the following intuitively adequate paraphrases:

(24) a. Vor-Ort-Bericht = report given directly at the site where the event happens which is the topic of the report

     b. Vor-Nobelpreis-Ära = era before the time when Nobel prizes were awarded

     c. Zweibettzimmer = room with two beds

It seems to be reasonable to acknowledge two quite different kinds of phrasal compounds – quotative and non-quotative ones. If the quotative ones are compatible with the Lexical Integrity Hypothesis, the non-quotative ones might turn out to be the true challenge.

As for the compounds in (23), they do not require a true phrasal analysis in every case. Take, for example, *Zweibettzimmer* ('double bedroom'). One could propose the analysis in (25a) – which is similar to one option of analyzing »affix compounds« (Germ. »Zusammenbildungen«) like *blue-eyed* or *vierseitig* ('four-sided'):[8]

(25) a. *Zweibettzimmer*

     Morphological structure: $[[A+N]_N +N]_N$

     Meaning: room with two beds

     b. *vierseitig*

     Morphological structure: $[[A+N]_N + affix]_A$

---

[8] The similarity is most obvious with respect to pairs like *Vier-Farben-Satz* ('four colour theorem') and *vierfarbig* ('four-coloured'), *Drei-Türen-Problem* (lit. 'three doors problem', 'Monty Hall problem') and *dreitürig* ('three-door'). Leser (1990) takes them to be two variants of the same type 'Zusammenbildung'.

     The structure in (25b) has been proposed by Höhle (1982, 1985) (see Leser 1990: §4.3 for critical comments on this structure and the alternative analysis [A [N affix]], which eschews a phrasal analysis too; the critical comments no longer seem so strong as they might have been in the 1990s).

Meaning: having four sides

I will call compounds like *Zweibettzimmer* »pseudo-phrasal compounds«, as the AN constituent cannot be a true syntactic phrase: it does not exhibit the properties a corresponding well-formed syntactic phrase would have to possess (cf. Leser 1990: 46f., Lawrenz 2006: 28). Firstly, their parts do not agree as the parts of the corresponding phrase would do. See the missing or superfluous suffixes in following (a)-compounds:[9]

(26) a. Zweibettzimmer ('double bedroom')

     b. zwei Betten ('two beds'), *zwei Bett

(27) a. Viel-Körper-Problem ('many-body problem')

     b. viele Körper ('many bodies'), *viel Körper

(28) a. Ein-Personen-Haushalt ('one-person household')

     b. eine Person ('one person'), *ein Personen

Secondly, the non-head constituent of pseudo-phrasal compounds cannot be modified as corresponding phrases could (the compounds in (30), (32) and (34) are possible, but not lexicalized words):

(29) a. das Zweibettzimmer
       'the double bedroom'

     b. *das Zwei-weiche-Bettzimmer
       the two-soft-bedroom
       'the room which has two soft beds'

(30)   das Zwei-weiche-Betten-Zimmer
       the two-soft-beds-room
       'the room which has two soft beds'

(31) a. der Ein-Personen-Haushalt
       'the one-person household'

     b. *der Ein-Personen-ohne-Einkommen-Haushalt
       the one-person-without-income-household

(32)   der Eine-Person-ohne-Einkommen-Haushalt

---

[9] Leser (1990: 46) delivers more examples:

(i) Zweikammersystem, Zweikreisbremse, Zweistromland, Dreimonatsziel, Dreikantstahl

(ii) Einfamilienhaus, Einparteienregierung, Eintagsfliege, Einphasenstrom

the one-person-without-income-household

'the household which consists of one person without income'

(33)   a.   die Einparteienregierung

'the one-party government'

b.   *die Nur-Einparteienregierung

the only-one-party-government

(34)   die Nur-eine-Partei-Regierung

'government which consists of only one party'

The AN constituent has a morphological structure which mimics a syntactic phrase in the sense that it is built up by the same lexical material in the same order, exhibits a similar prosodic structure and is related to a phrasal semantics. (We will come back to the true phrasal counterparts (30), (32) and (34) in a moment.)

The same for *Vor-Ort-Bericht* and *Vor-Nobelpreis-Ära*, which I take to be pseudo-phrasal compounds too. They look like complexes of P and N, mimicking a PP containing P and DP. Note that *Vor Nobelpreis* is not a well-formed syntactic phrase:

(35)   *Vor-Ort-Bericht*

Morphological structure: $[[P+N]_P +N]_N$

Meaning: report given directly at the site where the event happens

(36)   *Vor-Nobelpreis-Ära*

Morphological structure: $[[P+N]_P +N]_N$

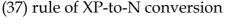Meaning: era before the time when Nobel prizes were awarded

What is phrasal is their semantics: the two components of the phrasal constituent combine like the two components of a true phrase: in *Vor-Nobelpreis-Ära*, for instance, the two components combine as in *vor dieser Zeit* 'before that time'. It has approximately the meaning »is located before the time span where Nobel prizes were awarded« – in formal terms: $\lambda x.\text{BEFORE}(x,f(\text{NOBEL-PRIZE}))$, with f mapping the predicate NOBEL-PRIZE to the time span where Nobel prizes were awarded.

The question of whether the pseudo-phrasal compounds are a counterexample to lexical integrity can be connected to the problem of finding the adequate structure of affix compounds. If they contain a syntactic phrase, pseudo-phrasal compounds are a counterexample. But this is far from clear. The morphological structures in (25a)/(25b) and (35)/(36) are well-formed, allowing an adequate mapping to prosody and facilitate a compositional semantics.

Thus, it might be appropriate to exclude them from the class of phrasal compounds, as Leser (1990: 45f.) has proposed, and the label 'pseudo-phrasal' is suggested. This, however, is only a terminological question.

If pseudo-phrasal compounds could, as we have sketched, obtain an analysis compatible with lexical integrity, compounds like *Zwischen-den-Zeilen-Widerstand* ('between-the-lines resistance'), *over-the-fence gossip*, or *slept-all-day look* remain as problematic cases – I will call them »non-quotative phrasal compounds«.

Are they really non-quotative? It seems to me that, as for *Zwischen-den-Zeilen-Widerstand* ('between-the-lines resistance'), paraphrases like »resistance which is called 'between the lines'« or »resistance which has the label 'between the lines'« are not suitable. If I am right in taking them to be non-quotative, they are compatible with LIH only if the phrasal constituent has the status of a word. As the phrasal constituent exhibits all characteristics of a well-formed phrase in form and meaning, it should be a phrase »on some level of analysis«. LIH is respected if there is phrase-to-word conversion in the case of non-quotative phrasal compounds too. As there is no quotation, a different kind of phrase-to-word conversion must be at stake. This conversion should have the following features: (i) the phrase and the noun it is converted to have exactly the same phonology and semantics; (ii) the noun is a bound morpheme, as it does not occur outside of a nominal compound. The following rule might capture these features:

(37) rule of XP-to-N conversion

$$
\begin{bmatrix}
\text{PHON} & phon \\
\text{SYN} & \text{XP} \\
\text{SEM} & \text{predicate(x)} \\
& mean
\end{bmatrix} =>
$$

$$
\begin{bmatrix}
\text{PHON} & phon \\
\text{MORPH} & \text{category: N} \\
& \text{valency: To-its-right-Right(N)} \\
\text{SEM} & \text{predicate(x)} \\
& mean
\end{bmatrix}
$$

Given an XP with an arbitrary phonological form (*phon*) and the semantics of a one-place predicate with an arbitrary meaning (*mean*), the rule provides for a word which has the

same phonology as the phrase, has the morphological category N, selects a noun to its right in morphology, and has the same semantics as the phrase.[10]

Take *Zwischen-den-Zeilen-Widerstand* as an example. On the basis of the phrase *zwischen den Zeilen* (38) and the rule (37), we get the bound morpheme *zwischen den Zeilen* (39). (For convenience, I use a orthographic representation of the PHON-feature.)

(38) Description of *zwischen den Zeilen*

PHON	*zwischen den zeilen*
SYN	PP
SEM	predicate(x)
	λx[x is located between the lines]

(39) Description of *zwischen den Zeilen* as a bound morpheme

PHON	*zwischen den zeilen*
MORPH	category: N
	valency: To-its-right-Right(N)
SEM	predicate(x)
	λx[x is located between the lines]

Applying the general schema for NN composition, which combines two morphological words into a morphological word (cf. the compound schema in Haspelmath/Sims 2010: 48), to this bound morpheme and the noun *Widerstand* results in:

(40) Description of *Zwischen-den-Zeilen-Widerstand*

PHON	*zwischen den zeilen widerstand*
MORPH	N
SEM	predicate(x)
	λx[x is resistance which is located between the lines]

---

[10] The predicative nature of the phrase (and the word) might be the reason that DPs are hardly possible as phrasal constituents in non-quotative phrasal compounds. Requiring a noun as the morphological complement means that only nouns can be the head of non-quotative phrasal compounds. Phrasal compounds with an adjectival head (e.g. *fünf-Stufen-integriert* 'five-level integrated' – for more examples see Lawrenz 2006: 7) probably necessitate a conversion rule of its own, as this type of compound displays only a few patterns with a noun phrase as the phrasal constituent.

Note that it would formally be possible to have the ill-formed compound *Zwischen-die-Zeilen-Widerstand* – the phrasal constituent being based on a well-formed directional PP. That this compound is ill-formed has semantic reasons, it is difficult to interpret it in a sensible way.

At this stage, we can come back to the distinction between quotative and non-quotative phrasal compounds. The proposed analysis predicts that non-quotative phrasal compounds may contain indexicals which are interpreted in a regular way, as the semantics of original phrase transfers to the phrasal constituent (albeit its status as a word). This is in striking contrast to indexicals in pure quotes (cf. the discussion of the example *Kaufe-Ihr-Auto-Kärtchen* in § 3 above). See the following made-up compound (41), which is constructed with the compound (42) [=(30)] in mind:

(41)   das Zwei-für-mich-zu-weiche-Betten-Zimmer
          the two-for-me-too-soft-beds-room
          'the room which has two beds, which are too soft for me'
(42)   das Zwei-weiche-Betten-Zimmer
          the two-soft-beds-room
          'the room which has two soft beds'

The personal pronoun contained in the compound refers to the utterer, as it would do in the sentence *Diese Betten sind zu weich für mich* 'These beds are too soft for me'. Additionally, in contrast to quotative phrasal compounds, complete sentences (with their own illocutionary force) should not be possible as the phrasal constituent in non-quotative phrasal compounds, because these sentences are no predicates which could be integrated into the compound.

6. Conclusion

Are phrasal compounds a counterexample to the Lexical Integrity Hypothesis, i.e., the *No Phrase Constraint*? It does not seem so. There are two kinds of phrasal compounds – quotative and non-quotative ones – and both rely on a phrase-to-word conversion, which makes them compatible with lexical integrity. The phrasal constituent in quotative phrasal compounds is a pure quote, and pure quotes are nouns. If a phrase is quoted, producing a pure quote means to convert a phrase into a noun. As the semantics of quotative phrasal compounds patterns with the standard semantics of NN compounds, nothing special has to be stipulated to analyze quotative phrasal compounds in harmony

with lexical integrity – there is no phrase contained in a word. Non-quotative phrasal compounds are a bit different. To get them in harmony with lexical integrity, we have to assume a special rule of phrase-to-word conversion which creates nouns which are »bound« as the first constituent in NN compounds. As we have seen with respect to pure quotes, phrase-to-word conversion is something which we have independent reasons for. Thus, we do not assume a totally new thing when we assume a rule of phrase-to-word conversion for non-quotative phrasal compounds. And there are other independent instances of phrase-to-word conversion in German. The nominalized infinitive is a case in point. Here, a predicative VP with the superordinate verb in the simple infinitive can be converted into a noun. See the conversion of the VP *zwischen den Zeilen Widerstand leisten* 'to offer resistance between the lines' into a noun in (43):

(43)   das vergebliche Zwischen-den-Zeilen-Widerstand-Leisten durch einige
            wenige
            the futile between-the-lines-resistance-offer by some few
            'the futile offering resistance between the lines by few people'

Thus, there is a plausible way to get non-quotative phrasal compounds in harmony with lexical integrity. Therefore, it is unwarranted to take phrasal compounds to be a clear counterexample to the LIH. On the contrary, there is a good case to assume that phrasal compounds are compatible with lexical integrity. Nonetheless, we only get this result by assuming 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. 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. And we can adhere to lexical integrity in the more general sense that syntax has no access to the internal structure of words.

Bibliography

Booij, Geert (2009): »Compounding and construction morphology«. In: Rochelle
        Lieber/Pavol Stekauer (eds.), *The Oxford Handbook of Compounding*. Oxford: Oxford
        University Press, 201–216.

Botha, Rudolf P. (1981): »A base rule theory of Afrikaans' synthetic compounding«. In: Michael Moortgat/Harry van der Hulst/Teun Hoekstra (eds.), *The scope of lexical rules*. Dordrecht: Foris, 1–77.

Botha, Rudolf P. (1984): *Morphological mechanisms: lexicalist analyses of synthetic compounding.* Oxford: Pergamon.

Clark, Herbert H./Richard J. Gerrig (1990): »Quotations as demonstrations«. *Language* 66, 764–805.

Gallmann, Peter (1990): *Kategoriell komplexe Wortformen.* Tübingen: Niemeyer.

Göksel, Aslı (2009): »Compounds in Turkish«. *Lingue e Linguaggio* 2, 213–236.

Haspelmath, Martin/Andrea D. Sims (2010): *Understanding morphology.* London: Hodder Education.

Höhle, Tilman N. (1982): »Über Komposition und Derivation: zur Konstituentenstruktur von Wortbildungsprodukten im Deutschen«. *Zeitschrift für Sprachwissenschaft* 1, 76–111.

Höhle, Tilman N. (1985): »On composition and derivation: the constituent structure of secondary words in German«. In: Jindrich Toman (ed.), *Studies in German grammar.* Dordrecht: Foris, 319–376.

Jackendoff, Ray (2002): *Foundations of language.* Oxford: Oxford University Press.

Klockow, Reinhard (1980): *Linguistik der Gänsefüßchen. Untersuchungen zum Gebrauch der Anführungszeichen im gegenwärtigen Deutsch.* Frankfurt/M.: Haag und Herchen.

Kornfilt, Jaklin (this volume):

Meibauer, Jörg (2003): »Phrasenkomposita zwischen Wortsyntax und Lexikon«. *Zeitschrift für Sprachwissenschaft* 22, 153–188.

Meibauer, Jörg (2007): »How marginal are phrasal compounds? Generalized insertion, expressivity, and I/Q-interaction«. *Morphology* 17, 233–259.

Lawrenz, Birgit (2006): *Moderne deutsche Wortbildung. Phrasale Wortbildung im Deutschen: Linguistische Untersuchung und sprachdidaktische Behandlung.* Hamburg: Kovac.

Leser, Martin (1990): *Das Problem der Zusammenbildungen. Eine Lexikalistische Studie.* Trier: Wissenschaftlicher Verlag.

Lieber, Rochelle/Sergio Scalise (2006): »The Lexical Integrity Hypothesis in a new theoretical universe«. *Lingue e Linguaggio* 5, 7–32.

Pafel, Jürgen (2007): »Ein Essay mit dem Titel 'On pure quotation'«. In Elke Brendel/Jörg Meibauer/Markus Steinbach (eds.), *Zitat und Bedeutung*. Hamburg: Buske, 201–214.

Pafel, Jürgen (2011): »Two dogmas on quotation«. In: Elke Brendel/Jörg Meibauer/Markus Steinbach (eds.), *Understanding quotation*. Berlin/New York: de Gruyter Mouton, 249–276.

Riehemann, Suzanne (1998): »Type-based derivational morphology«. *The Journal of Comparative Germanic Linguistics* 2, 49–77.

Schmidt, Hartmut (2000): »Hochkomplexe Lexeme: Wortbildung und Traditionen des Formulierens«. In: Mechthild Habermann/Peter O. Müller/Bernd Naumann (eds.), *Wortschatz und Orthographie in Geschichte und Gegenwart. Festschrift für Hort Haider Munske zum 65. Geburtstag*, 135–158. Tübingen: Niemeyer.

Trips, Carola (2012): »Empirical and theoretical aspects of phrasal compounds: against the 'syntax explains it all' attitude«. In: Angela Ralli/Geert Booij/Sergio Scalise/Athanasios Karasimos (eds.), *On-line Proceedings of the Eighth Mediterranean Morphology Meeting (MMM8)*, 322–346. URL=<http://morbo.lingue.unibo.it/mmm>

Vries, Mark de (2008): »The representation of language within language: a syntactico-pragmatic typology of direct speech«. *Studia Linguistica* 62, 39–77.

Wiese, Richard (1996): »Phrasal compounds and the theory of word syntax«. *Linguistic Inquiry* 27,183–193.