# Normality at the boundary between word-formation and syntax[1]

Holden Härtl

## Abstract

This paper investigates the notion of normality in the context of the divide between word-formation and syntax. Knowledge about what is normal finds its expression in generic characterizations about kinds (*Ducks lay eggs*), and we will present evidence that newly formed word-formation products like *Rotdach* ('red_roof'), in contrast to their phrasal counterparts, are more inclined to adopt kind readings. The compounds' affinity to function as names for kinds will be explained on grounds of a pragmatic, manner-based principle. It holds that deviation from the default way of forming a complex expression, i. e., from the phrasal expression, implicates a deviation from the compositional meaning of the complex. Viewed from this grammatical angle, the present paper argues for normality to be implemented in the language system in light of the understanding that morphology produces more marked forms than syntax.

## 1 Introduction

Any model of morphology must explain why products of word-formation typically deviate in meaning from their phrasal counterparts. Adjective-noun compounds like *Kleinkind* ('small_child', *toddler*) or *Großstadt* ('big_town', *metropolis*), for example, denote meanings that are subject to certain ontological restrictions, in such a way that *Kleinkind* refers to a child between the ages of one and three or so and *Großstadt* is any city with more than 100,000 residents. These restrictions do not apply to the phrasal counterparts *kleines Kind* and *große Stadt*. Semantic specialization of this sort in compounds has often been argued to be the result

[1] I am grateful to Sven Kotowski, Andrew McIntyre, and Olav Mueller-Reichau as well as to the organizers and the audiences of the workshop "Normality in Language" of the DGfS conference (Leipzig, 2015) and the "Semantics and Philosophy" colloquium (Cambridge, 2015) for discussion and fruitful comments. In addition, I wish to thank Laura Sievers for her help with the manuscript.

of lexicalization compounds are subject to, cf., among others, Schlücker (2014) and Schlücker & Hüning (2009), for further discussion see also Klos (2011). Note, however, that differences in meaning between compound and phrase can easily be identified with novel compounds also, that is, non-lexicalized compound expressions. A newly formed compound like *Rotdach* ('red_roof'), for instance, calls for a more specialized interpretation than that of the phrasal counterpart *rotes Dach*, namely one possibly implying a specific type of roof covered with, say, red wooden clapboard. Thus, it seems that semantic specialization is somehow active "right from the beginning" in the life of a compound. The question remains why exactly this is so.

Semantic specialization in compounds can be linked to the compounds' affinity to adopt the meaning of a kind expression. Closely related is the inclination of compounds, in languages like German, to fulfil the naming function of the mental lexicon. The current paper seeks to analyze these characteristics in the light of the question of how normality affects word-formation processes. To be specific, we will argue that the easily adopted name status of a compound can be explained if the creation of a novel word-formation product is understood to be a deviation from the "normal", i. e., the default way of forming a complex expression, that is, from the phrasal expression. For the theoretical implementation of this approach, a pragmatic, manner-based principle will be used. It holds that a deviation from the default realization of a complex form implicates a deviation from the compositional meaning of the complex. As a result, the expression takes on a semantically enriched meaning, which leads into semantic specialization and the interpretation of the expression as a kind name, respectively.

The perspective on the interplay between normality and word-formation pursued here involves two separate dimensions of the notion of normality. On the one hand, normality can be thought of as a semantic-conceptual notion and, as such, as part of our non-linguistic knowledge about what is normal in the world. In this sense, knowledge about normality takes on different linguistic forms, with generic characterizations like *Ducks lay eggs* being one of them. As we will see, compounds, in contrast to their phrasal counterparts, are particularly predisposed to enter such constructions. On the other hand, the notion of normality can be associated with our knowledge about defaults in grammar as they relate to configurational and lexical principles. This knowledge comprises information about the "markedness" of linguistic expressions and triggers inferences about expressions which deviate from the default. A time-honored example refers to the semantic

difference between *matchbox*, as the conventionalized, unmarked form for a particular type of box, and *box for matches*, which can be used to denote some non-prototypical container used for matches.

Against this background, the structure of this paper unfolds as follows. Section 2 discusses the notion of normality from a semantic-conceptual as well as from a grammatical vantage point. Section 3 examines characteristic semantic and conceptual differences between adjective-noun compounds and their phrasal counterparts, where the notions of naming and kind representation will be in focus. In section 4, a pragmatic rationale to explain the functional differences between the two categories will be put forward. The summary in section 5 concludes our investigation.

## 2 Conceptual and grammatical dimensions of normality

In the following section, we will set the stage and approach the notion of normality from two perspectives. First, we will consider the concept of normality as part of our non-linguistic knowledge about the world. Second, leading us to the central subject matter of this paper, we will focus on aspects of how normality is anchored in grammar and, in particular, in word-formation domains.

### 2.1 Normality as a semantic-conceptual notion

The concept of normality can be associated with our knowledge about the default behavior $P$ of some entity $x$ in the world. From a lexical point of view, the subsective adjective *normal* represents a relational concept. Besides property $P$ of $x$, *normal* predicates over a variable $v$, which represents a value associated with the reference class for which $P$ is considered normal. Consider the following example and the corresponding lexical representation of the adjective:

(1) a. Chewing on shoes is normal for a puppy.
    b. λP λx[NORMAL(P(x), v)]

For dimensional adjectives (*long*, *high*, *short*), $v$ has been characterized as a variable which refers to a norm value $N$ on a dimensional scale, from which the subject entity deviates to some significant extent c, see Bierwisch (1984: 503) and Lohnstein (this volume):

(2) a. The Empire State Building is really high. v = N + c
    b. Napoleon was short. v = N – c

Crucially, for *normal* the restriction holds that the value of $v$ must not deviate from the norm value in any relevant way. In the example in (1a) above, the value of $v$ is associated with the nominal entity *puppy*, for which we know the property expressed by *chewing on shoes* to be within the range of properties typical for that entity. Consequently, with negated *normal*, $v$ takes on a value significantly deviating from the norm value, as the following example illustrates:

(3) Chewing on shoes is not normal for an adult.

Here, the expressed property does not lie within the norm range of properties typical for adults. The question remains of why exactly we assume chewing on shoes not to be normal for an adult.

Our knowledge about what is normal derives from generalizations across typical instances of the entities in the world, see d'Avis (2013). It represents our understanding about kinds of objects or situations as well as behavioral defaults, cf. Leslie (2008), and enables humans to act adequately in a particular situation, even without exact information about the entity he or she faces, cf. Gigerenzer & Brighton (2009). An important property of the knowledge about normality, as is stressed in d'Avis (2013), (this volume), is that it has to allow exceptions. For instance, the generic characterization *Ducks lay eggs* cannot be true for the entire extension of the subject entity as the assertion does not apply to male or juvenile ducks, cf., among others, Khemlani et al. (2007). The existence of exceptions and the willingness to systematically ignore them can be used as evidence against a purely statistical modelling of our knowledge about kinds, based on the numerical frequency of a property in a certain population, see Khemlani, Leslie & Glucksberg (2012) and Schurz (2001) for discussion. That a quantificational understanding of our knowledge concerning kinds must be, at best, incomplete is even more evident in cases of so-called "striking properties" as in *Sharks bike swimmers*, see Prasada et al. (2013), where only very few instances suffice to create a robust characterization.

Against this background, we will assume in what follows that our knowledge about what is normal is based on default reasoning, which is nonmonotonic in nature, cf. d'Avis (2013) and Leslie (2007). In default reasoning, inferences are drawn on the basis of what is likely to be the case, in a given, canonical situation. As it allows instant action without precise background information, this kind of reasoning strategy has been argued to have an evolutionary advantage, and we will assume this to be the rationale behind the construction of information about what is normal in the world, cf. Leslie (2008).

Knowledge about normality takes on various linguistic forms and generic descriptions like *Ducks lay eggs* provide a classic, well-described instance. Sentences of this type are commonly analyzed to describe properties of kinds, see Krifka et al. (1995). A standard test for kind reference employs characterizing sentences. With them, a definite noun phrase which cannot refer to an (established) kind is blocked, see Carlson (1977) via Krifka et al. (1995: 11). Observe the following contrast:

(4) a. The Coke bottle has a narrow neck.
b. ??The green bottle has a narrow neck.

The contrast can be traced back to the long-established understanding that characterizing sentences, as constructions that express regularities about specimen of a kind, see Pelletier (2006), presuppose a firm generalization across a larger set of objects. The set can be referred to in the same way an individual object can be referred to – hence the definite article, see Carlson (1991), Gunkel & Zifonun (2009), Krifka et al. (1995). This requirement is fulfilled by *Coke bottle* as it represents a well-established type of bottle, in contrast to *green bottle*. Furthermore, the difference between a characteristic property of a kind and an accidental property has been observed to have a grammatical reflex such that only descriptions involving characteristic, object-defining properties accept indefinite subject DPs, cf. Krifka et al. (1995: 13), Lawler (1973: 109):

(5) a. A Coke bottle has an hourglass shape.
b. ??A Coke bottle has a famous shape.

Also, adverbs like *normally* or *typically* are sensitive to the types of properties a generic characterization describes. For example, *typically* can be used with prevalent properties as in *Ducks lay eggs* or *Dogs are allergic to proteins* but not with striking properties as in *Sharks bite swimmers* or *Ticks carry Lyme disease*, cf. Prasada et al. (2013) for an analysis.

## 2.2 Normality in grammar

As we have seen in the previous section, our conceptual knowledge about normality can adopt different linguistic realizations. Regarding our linguistic knowledge, expectations about what is normal in language relate to structural and configurational principles as well as the lexical material used in a given communicative situation. A well-known instance is the "Agent first" principle, which states that the more agentive DP is placed first in a sentence, see Klein & Perdue (1997). Importantly, in certain

situations, the principle competes with the "Topic first" principle, which holds that a topic expression needs to be realized before a focus expression. As a consequence, a speaker will have to decide in favor of the less serious violation and override one of the two principles.

As is known, competition of constraints can be observed everywhere in grammar. Expressions displaying the bracketing paradox as in [[*functional grammar*] -*ian*], cf., e. g., Booij (2009), are an example, where a structurally non-optimal solution is chosen in favor of a less economical one, i. e., *scholar in functional grammar*. In a similar way, an expression like *travel ban to Cuba*, where the PP *to Cuba* satisfies the goal role of the compound's non-head *travel* can be characterized as a structural infringement – which, however, is sanctioned by the intent to produce an economical linguistic construction, see Härtl (2013).

Observe that expressions of the above type often give rise to a communicative effect which is linked to their deviation from the grammatical default. The expressions exhibit a certain degree of "markedness", i. e., they are perceived as "non-normal" or non-conform, which, thus, leads to an increase in awareness. Word-formation and the syntax-morphology interface in general have been described as domains that are prone to display such effects of markedness. For instance, Meibauer (2007) characterizes phrasal compounds like *over-the-fence gossip* or *all-or-nothing principle* to be particularly expressive, which, in this case, can be linked to the intrusion of phrasal material into a compound structure, i. e., a structure with word-status.

Notions about what is normal linguistically are anchored in our language system as knowledge about default grammatical configurations. Against this background, we will look at word-formation products in the following and examine their predisposition to function as names for kinds. In essence, we will argue that, in languages like German, word-formation represent the default route used to fulfil the naming function of the lexicon.

## 3 Normality and the syntax-morphology divide

In this section,[2] we will concentrate on adjective-noun (A-N) compounds and adjective-noun phrases as they provide a serviceable test environment due to their minimal pair-like nature. For the central analysis, we will restrict ourselves to monomorphemic intersective adjectives as instantiated by dimensional (*high*, *deep*, *slim* etc.) and color adjectives (*red*, *blue*). To

[2] As will be indicated below, parts of the data presented in this section have been discussed in the context of an earlier version of the analysis, see Härtl (2015).

avoid circularity in the argumentation, we will make use of newly formed and fully transparent compound expressions, with a null frequency in the Wortschatz corpus.[3] We assume a lexicalist position, which implies a categorical separation between word-formation and syntax, cf., among others, Di Sciullo and Williams (1987). Our central hypothesis will be based on the argumentation in Spencer (2011), stating that the adjectival element in an A-N compound takes on a classifying function. Thus, the adjectival element loses its canonical attributive function and produces a shift in the intension of the head noun instead, see Zelinsky-Wibbelt (2011: 24). Our analysis is in line with Barz's claim that compounds lose descriptive potential at the moment of their formation, see Barz (1996: 143). For the theoretical implementation, the classifying function of a compound will be traced back to its status as a name for a concept as well as its interpretation as a kind expression.

### 3.1 The name status of A-N compounds in German

While there is a broad consensus among researchers in the field that word-formation products in languages like German are somehow prone to realize the naming function of the mental lexicon, cf. Schlücker (2014: 189ff.) for an overview, only few studies have investigated this correlation from a systemic, compositional semantic point of view, among them Bücking (2010). In the literature, naming is usually defined as linking a conceptual category with a corresponding linguistic expression, cf. Booij (2010: 169). A name, in its lexical sense, can be associated with a function that establishes a node in a conceptual-ontological taxonomy, thus creating the lexical concept of a sub-category of the category denoted by the head noun, cf. Pörings & Schmitz (1999: 62f.). The twofold nature of naming is illustrated in the following depiction:

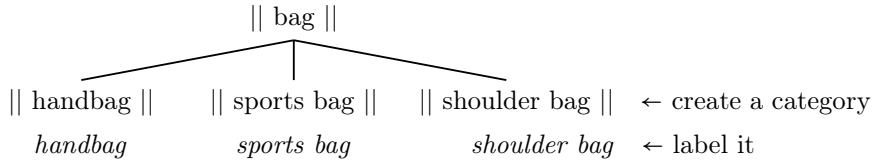



Figure 1: Naming

Importantly, creating a name requires the corresponding category to be "nameworthy", i. e., the category needs to be (culturally or situationally)

[3] www.wortschatz.uni-leipzig.de

relevant to such an extent that an institutionalized label is worth to be created for it, cf. Downing (1977), Lipka et al. (2004), Štekauer (2002).

### 3.1.1 Naming as labelling

In this section, we will examine naming in the sense of labelling per se, ignoring, for the moment, the ontological implications that naming processes give rise to. Various linguistic environments hint at the status of an expression as a name, including name-selecting predicates, which involve a form of the predicate *nenn-* ('call'). With them a contrast between A-N phrases and A-N compounds is produced in German, which can be associated with the more pronounced naming function of the latter, cf. Bücking (2010), Härtl (2015), Schlücker & Hüning (2009):[4]

(6) a. Man nennt so etwas ein ??rotes Dach / Rotdach.
'one calls this a red roof / red_roof'

b. Das ist eine sogenannte ??tiefe Grube /Tiefgrube.
'this is a so-called deep pit / deep_pit'

Novel compounds contrast with phrases in acceptability in these environments: *Nenn-* ('call') and *sogenannt-* ('so-called') are sensitive to the name status of their complements and expressions that have no particular naming function are odd with them. The question remains, why exactly are phrases less suitable here.

A prominent explanation for why certain expressions are infelicitous in a naming context is that they presuppose the corresponding noun to accept an interpretation as a (well-established) kind, cf., among others, Carlson (1977), Krifka et al. (1995). Note, however, that name-selecting predicates are in fact compatible with expressions that involve non-kind individuals. For example, in *der sogenannte Opernplatz* ('the so-called Opernplatz'), a proper name, that is, a non-kind individual, represents the complement of the name-selecting predicate. For this reason, we will favor a pragmatically oriented explanation for the contrasts in (6), focusing alone on the labelling function of the complement of *nenn-* rather than its status as a kind. Our analysis holds that a name-selecting predicate requires the corresponding name to be worth to be identified explicitly as a name – otherwise the speaker would not use a construction referring explicitly

[4] The A-N compound pattern in German is subject to the restriction that multimorphemic adjectives are generally blocked here, cf. *Gelbton* ('yellow_hue') vs.**Gelblichton* ('yellowish_hue'), see Hüning (2010: 5). Exceptions are loans ending in *-al*, *-iv*, as well as (synchronically) underived adjectives like *billig-*, *fertig-*, *extrem-* etc.

to a name.[5] Importantly, a naming environment identifies a label which a certain speech community has agreed on, but which the addressee is assumed to be unfamiliar with. Semantically transparent phrases like *rotes Dach* or *tiefe Grube*, however, as in the examples in (6), deliver canonical object descriptions rather than a somehow unfamiliar label of a particular conceptual category. They, thus, produce a tautology in a context that provides a formal (metalinguistic) explanation for the name, cf. Bücking (2010), Carlson (1977), Gunkel & Zifonun (2009), Krifka et al. (1995):

(7) ??Das rote Dach wird so genannt, weil es rot ist.
'the red roof is called like that because it is red'

Evidently, phrasal expressions of this type, in contrast to their compound counterparts, are always interpreted compositionally at first, i. e., as canonical object description, not suitable for a naming context that emphasizes the status of the expression as a conventionalized label. That±± is also why the phrasal expressions in (6) are just as odd as, say, ??*One calls this a roof*, with the explanation that calling a roof *roof* is a commonly accepted convention, not worth to be pointed out.

Let us, for a moment, take a closer look at the lexical-semantic set-up of a name-selecting predicate, as it is involved in sentences like (8b) and (9) below. The name-selecting predicate *call* relates to a three-place function, see (8a). Loosely speaking, it predicates over an Agent argument ($x$), a Theme argument ($y$), that is, the referent whose name is referred to with the assertion, as well as the actual linguistic shape of the name, which itself is associated with a relational predicate NAME, signifying $z$ as the name of $w$. For the latter, an interpretational instruction holds that the extension of the argument $w$ of NAME needs to be identified with the extension of the Theme argument ($y$):

(8) a. *call*
λz λy λx[CALL(x, y, NAME(z, w): w = y)]
b. One calls this thing "clicker".
GENx[CALL(*one*, *this thing*, NAME(/klɪkər/, w): w = this thing)]

With *so-called*, a participle form, the argument-structural inventory of the root is expected to be preserved. Interestingly, however, the Theme argument of the name-selecting predicate and the name itself seem to be merged

[5] A different, though related function of *sogenannt* ('so-called') is to express a certain reservation of the speaker w. r. t. to the semantic appropriateness of the modified expression, as in, e. g., *We finally arrived at the so-called "hotel"*, cf. Predelli (2003).

under one slot.[6] Consider the example in (9), illustrating that, here, *clicker* signifies both the thing itself as well as the name of that very thing:

(9) [Max used] a so-called "clicker".

How can this apparent reduction of arguments of the predicate be explained? Observe the function of *so* in this context. It is a demonstrative, used anaphorically here, see Umbach & Gust (2014), which binds the argument $z$ of NAME, that is, the actual name by pointing to an expression that has the corresponding shape. The rationale behind this is illustrated in the non-attributive use of the predicate combined with so as in *An X is called so because* ..., where *so* again relates to the specific name shape of the subject entity *X*. For the present purposes, an existential binding of the argument variable z of NAME shall suffice to express the anaphoric character of *so* in *so-called*:

(10) *a so-called "clicker"*
$\exists$z GENx[CALL(x, *a clicker*, NAME($z_{so}$, w)): w = a clicker]

Often, quotation marks can be found around the complement of a name-selecting predicate. A central function of quotes is to provide a way of explicitly mentioning a name, as in *"Clicker" is a six-letter word*, see Washington (1992) for an analysis. Thus, quotes are a means to disambiguate between referring to a concept's extension, on the one hand, and pointing to the name of the concept, on the other, see Saka (1998), cf. also Gutzmann & Stei (2011). In the sentence in (9), *clicker* is used in both ways: to refer to something, namely a clicker, and to mention its name. Crucially, quotes are used here as a means of putting the name-argument contained in the predicate (see (10)) in focus.

With an expression like *so-called "clicker"*, the producer of the utterance announces that the expression in quotes is, to some extent, not established enough in the lexicon of a certain speech community. In this function, quotation marks are also used to signal a neologism (cf. Klockow 1980: 170f., cf. also Meibauer 2007a). Crucially, transparent A-N phrases of the type in (6) above improve in a naming context if used with quotes. Observe the following contrasts between A-N phrases and A-N compounds and the

[6] We assume that the Agent argument is bound generically in the participle form. For an analysis of generic indefinite *man* ('one') see Eggs (this volume). Note that a non-generic binding of the Agent argument may be required with ironic interpretations of *so-called*. For example, with a *so-called* as in *We finally arrived at the so-called "hotel"* the speaker presumably implies a specific Agent of the name-selecting predicate, in this case, perhaps, a travel agency.

affinity of the former to be used with quotes in such a context, cf. Härtl (2015):[7]

(11) a. sogenannter "kalter Regen" / Kaltregen
"so-called 'cold rain' / cold_rain"
b. ein sogenannter "heißer Tag" / Heißtag
"a so-called 'hot day' / hot_day"

As alternative graphemic means, capitalization can be used to highlight the name status of an expression:

(12) ein sogenannter Roter Zwerg
'a so-called red dwarf'

We can conclude that coercing a semantically transparent A-N phrase into functioning as a name and making it compatible with a name-selecting predicate involves a certain communicative effort in comparison to compounds, which seem to suggest their name status directly.

Support for our assumption comes from a corpus study, in which we tested whether (established) A-N phrases are used more often with quotation marks in a naming context involving *sogenannt* ('so-called'). We ran an analysis on the following items, which were all balanced for frequency of occurrence using the Leipzig Wortschatz corpus:

(13)

| Compound items | Frequency class |
|---|---|
| *Grauwasser* ('gray_water') | 21 |
| *Weißfäule* ('white_rot') | 21 |
| *Grünbrücke* ('green_bridge') | 18 |
| *Schwarzlicht* ('black_light') | 17 |
| *Langholz* ('long_wood') | 16 |
| Phrasal items | |
| *blauer Brief* ('blue letter', *pink slip*) | 21 |
| *grüner Pfeil* ('green arrow', *turn-right sign*) | 21 |
| *roter Faden* ('red thread', *golden thread*) | 18 |
| *grüne Welle* ('green wave', *synchronized traffic*) | 17 |
| *kleine Anfrage* ('minor interpellation') | 16 |

[7] It is important to keep apart the name-indicating function of quotation marks from their function to signal a meaning shift in the expression, i. e., in this case, in the attribute, see Klockow (1980) for discussion. In their name-indicating function, quotes are around the entire name, e. g., *ein sogenannter "blauer Fleck"* ('blue spot', *bruise*), whereas with the second type, quotes are preferably on the attribute alone, as in *sogenannter "grüner" Käse* ('green cheese', *immature cheese*). Quotes of the latter kind are connected to the apologetic use of quotes (so-called scare quotes), see Meibauer (2007a), Predelli (2003) for further discussion.

The data was retrieved from the IDS corpora (W / Deutsches Referenzkorpus DeReKo-2014-II) using the COSMAS II software. The query searched for *sogenannt* followed by the above A-N items, which returned hits of the following type:

(14) a. Dieses gering verschmutzte, häusliche Abwasser – sogenanntes Grauwasser – kann im Haushalt wiederverwendet werden.
'this slightly polluted domestic wastewater – so-called gray-water – can be re-used in households'
[NUN09/DEZ.02649]

b. Zu Hunderten werden in diesen Tagen von Schulen des Rhein-Lahn-Kreises sogenannte 'blaue Briefe' verschickt.
"by the hundreds these days schools in the Rhine-Lahn district are sending out so-called 'blue letters'"
[RHZ98/MAI.13242]

The total number of hits shows a higher tendency for phrases to occur in a sogenannt-context (n = 173) as compared to compounds (n = 58). We interpret this as first indication of a higher pressure for phrasal items to explicate their status as a name. Crucially, then, only 11.32 per cent of the compound items occurred in quotes, whereas 27.55 per cent of the phrasal items were used with quotes ($\chi 2 = 33.90$, $p < 0.001$).[8] The difference is still significant when we consider phrasal items with capitalized initials only:[9] 16.35 per cent of capitalized phrasal items were used with quotes; in contrast to the 11.32 per cent of the compound items ($\chi 2 = 4.58$, $p < 0.03$). The latter result is relevant in light of the hypothetical assumption that quotation marks and capitalized initials fulfill a somehow identical function as concerns the name status of the expression. As compound nouns are written with capital initials in German, the higher proportion of phrases to be used with quotes would then be explained by fact that adjectives are written with lower case initials. Capitalized initials in A-N phrases are indisputably accounted for by the name status of the phrases, cf. the example in (12) above. However, our results show that even when written in capitals, A-N phrases tend to be used with quotation marks to a higher extent than compounds.

The lesser tendency of the tested A-N compounds to highlight their name status when used in a naming context, as compared to phrases, speaks

[8] Values stated are the means of the percent values for each item (for compounds n = 9, for phrases n = 42).
[9] n = 25

for a more prominent name status inherent in compounds. The labelling affinity of compound expressions also finds its reflex in constructions like in (15a), which involve a logical dissociation between the temporal anchoring of the subject entity (*pensioner*) and the temporal anchoring of the nominal in the predicative (*pupil*): Normally, being a pensioner is temporally distinct from being a pupil. Notice the contrast in acceptability between the N-N compound *Bestnotenschüler* ('top_grade_pupil') and its phrasal N-PP counterpart *Schüler mit Bestnoten* ('pupil with top grades') in this construction, cf. (15b):

(15) a. Der Rentner Otto Meier ist ein Bestnotenschüler.
'the pensioner Otto Meier is a top_grade_pupil'

b. ?Der Rentner Otto Meier ist ein Schüler mit Bestnoten.
'the pensioner Otto Meier is a pupil with top grades'

The contrast can be explained under the assumption that the compound has adopted the status of a "timeless" name. At this point, the finding in Rapp (2015) and her analysis of participial predicatives is relevant, which holds that a temporal dissociation of type in (15a) is viable only if the nominal predicative has a specific labelling function and, hence, is temporally not dependent on the subject, cf. Härtl (2015).

In this section, we have collected evidence in support of the assumption that novel word-formation products are predisposed to accomplish the naming function of the mental lexicon in German. So far, we have understood naming as labelling, i. e., as providing linguistic material to function as a sign for a lexical concept. In the following section, we will approach the question if the naming affinity of word-formation products is also prevalent in the domain of kind reference.

### 3.1.2 Naming as referring to kinds

Are word-formation products predisposed to function as names for kinds? A kind is defined as a conceptual category in an ontological taxonomy, cf., among others, Krifka et al. (1995), Mueller-Reichau (2011), (this volume). According to Chierchia (1998: 349), a kind can be identified with the totality of its instances. Thus, a kind can be characterized as a conceptual grouping of objects which have certain properties in common and which are thus not perceived as an arbitrary collection of individuals. Names for kinds have, in this context, been associated with a classifying function, cf. also Gunkel & Zifonun (2009). In endocentric compounds, a modifier with a classifying function, by virtue of the semantic relation holding between

modifier and head, is associated with a subset of the extension of the head noun, such that, for example, *hand bag* denotes a subset of the extension of the noun *bag*.

Classic tests for kind reference employ characterizing sentences, cf. section 2.1 above, as well as kind-selecting predicates like *invent* or *be extinct*, cf. Krifka et al. (1995). Bücking (2010) observes contrasts between phrases and compounds in their ability to enter kind-sensitive constructions, where it is the latter that proves to be more prone to accommodate the necessary kind interpretation. Consider the following examples,[10] involving kind-sensitive environments containing the predicates *develop* and *create*, cf. Härtl (2015):

(16) a. Das ?rote Dach / Rotdach wurde in Belgien entwickelt.
'the red roof / red_roof was in Belgium developed'
b. Die ?hohe Lampe / Hochlampe wurde von Ikea kreiert.
'the high lamp / high_lamp was created by Ikea'

The examples in (16) demonstrate that a compound expression can adopt the kind interpretation required here without difficulty, in contrast to its phrasal counterpart. The insight is in line with observations from a cognitive perspective. Prasada et al. (2012) have argued on grounds of experimental data that compound expressions participate in hierarchies of kinds (e. g., *A polar bear is a kind of bear*) whereas phrasal expressions map onto class representations, supporting only class inclusion relations (*A white bear is a bear*).

A second observation as to whether A-N compounds are inclined to represent kind names comes from coordination environments. Note that in coordinating constructions, a crossing between descriptive and classifying modification is blocked, cf. **impressive and white sharks*, cf. Booij (2010: 185f.). A kind-based account for the effect implies that a classifying modifier like *white* as in *white sharks* relates to a classificatory interpretation of the expression and, thus, cannot be combined with a non-kind-denoting, descriptive modifier like impressive. Crucially, the effect does not depend on the lexicalization of the expression as we can observe parallel contrasts with newly formed compounds also. Consider the example of the (non-lexicalized) noun *Großkiefer* ('big_pine') in the coordinating construction in (17a), cf. Härtl (2015):

(17) Der Förster erfasste die Zahl an ...

[10] The examples in (16) are my own. The reader is reminded that the A-N compounds used in the examples are novel formations.

'the ranger counted the number of'

a. ??brandgeschädigten und Großkiefern im Wald.
'fire-damaged and big_pines in the forest'

b. brandgeschädigten und gesunden Kiefern im Wald.
'fire-damaged and intact trees in the forest'

c. Kanarischen und Großkiefern im Wald.
'canarian and big_pines in the forest'

The unacceptability in (17a) can be explained if we assume for the novel A-N compound *Großkiefer* to have already adopted a kind interpretation. The compound modifier is thus unable to enter a coordination with the descriptive modifier *brandgeschädigt* (*fire-damaged*). Following the same logic, (17b) is felicitous because both modifiers promote a descriptive interpretation, just as (17c) is acceptable due to a matching interpretation of the two modifiers, i. e., *kanarische* and *groß-*, in this case both referring to kinds of pines.

A third type of kind-sensitive environment involves the kind-pertaining particle *an sich* ('on REFL', *per se*), used in postnominal position, as well as kind-sensitive adjectives like *typisch* ('typical') or *klassisch* ('classic'), both also producing acceptability contrasts between phrases and compounds:

(18) a. Der ?leichte Topf / Leichttopf an sich ist kostengünstig in der Produktion.
'the light pot / light_pot per se is cost-efficient in production'

b. Eine typische ?hohe Lampe / Hochlampe benötigt keinen Überspannungschutz.
'a typical high lamp / high_lamp does not require overvoltage protection'

The contrasts demonstrated in the characterizing sentences in (18) can again be traced back to the compounds' affinity for establishing expressions for kinds and, in particular, to the specific composition of a kind as an ontological notion. For the explanation, recall that the meaning of any kind expression $X$ comprises the totality $Z$ of all objects contained in the extension of $X$:

(19) $[\![ X^{KIND} ]\!] = Z$
$Z = \{x : x \in X\}$

A kind expression relates to a generalization over an appropriate number of individual instances of the kind and, therefore, the respective set has to

contain a minimum number of elements, exemplified by $p$, $q$, and $r$ in (20) below. Importantly, the predicate *typisch* denotes a function that ranges over a prototypical instantiation[11] – let this be $p$ – of the elements contained in the extension of the argument of *typisch*:

(20) $Z = \{p, q, r \ldots\}$
$\lambda x[\textsc{typical}(x)]\ (p)$

The oddity of *hohe Lampe* ('high lamp') in the context of typisch, as illustrated in (18b), can now be accounted for by virtue of the fact that a phrasal expression of this kind (typically) represents an object description, which is not based on a generalization over several instances of the referent. Therefore, no prototypical, i. e., "typical" instantiation exists for the phrasal referent. Rather than that of a kind, *hohe Lampe* receives a canonical intersective interpretation,[12] with the only restriction for the intersection not to be empty:

(21) $\text{hohe}_{\text{A}}$ $\text{Lampe}_{\text{N}}$ ('high lamp')
$[\![ \text{A} ]\!] \cap [\![ \text{N} ]\!]$
$\{x : x \text{ is } A \text{ for an } N\}$

Notice, in this context, that with a compound expression like *Hochlampe*, in contrast to its phrasal counterpart, a non-intersective, kind interpretation is promoted, which stands in a hyponymic relation to the head noun's extension:[13]

(22) $\textit{Hochlampe}_{\text{AN}}$ ('high_lamp')
$[\![ \text{AN} ]\!] \subseteq [\![ \text{N} ]\!]$
$\{x : x \text{ is a kind of } N \text{ associated with } A\}$

Expressions like *typisch* and *an sich* figure in sentential contexts involving intensional attributes, i. e., predicates relating to the semantic content of the modified noun. In many cases, *an sich* (in the sense intended here) can be used on a par with modifiers like *in seiner Natur* ('in its nature'):

[11] The statistical nature of prototypicality and its link to the concept of normality is described in Schurz (2001). A semantic approach is pursued by Sassoon (2005), who implements degrees of prototypicality as a reflection of the order in which concepts are learnt. See also Prasada & Dillingham (2009) for a cognitively based elaboration of the notion of typicality and how it relates to principled connections between the type of an object and its properties.

[12] We are following the established view here that dimensional adjectives like hoch ('high') are intersective and involve an additional variable coding a comparison class. For details, see, among others, Bierwisch (1989), Kennedy and McNally (2005).

[13] See section 4 below for a pragmatically based explanation.

(23) Der Damaltiner (an sich) ist (in seiner Natur) familienfreundlich.
'the dalmatian (per se) is family-friendly (in its nature)'

With this characteristic in mind, it follows naturally that, just like *typisch*, *an sich* also calls for a kind interpretation of the modified nominal expression. Thus, as is illustrated in (24), *an sich* is incompatible with particularizing sentences as they do not take on a kind interpretation. Crucially, an analogous reasoning can be used to explain the oddity of the phrasal expression in (18a) above.

(24) Der Damaltiner ($^{??}$an sich) ist erst zwölf Wochen alt.
'the dalmatian ($^{??}$per se) is only twelve weeks old'

In this section, we have examined a number of linguistic environments that involve kind-sensitive characteristics as well as properties relating to the status of an expression as a concept's name. The general conclusion we can draw is that novel A-N compounds in German are indeed inclined to constitute labels for lexical concepts and represent kind names. As was observed, novel compounds accommodate a kind name reading easily and, thus, take on an interpretation deviating from the compositional basis. Note that we are not implying that phrases cannot figure as kind names – there are numerous phrasal names in German, cf. *Kleiner Tümmler* ('common porpoise'), *rote Karte* ('red card'), *grüner Tee* ('green tea'), all clearly referring to kinds of things. Rather, the reasoning pursued here holds that a semantically transparent modifier in a phrasal complex is interpreted as descriptive per default, in contrast to the compound counterpart, whose modifier promotes a classificatory interpretation from the moment of the compound's coinage. And even though an adjectival modifier like *hoch* ('high') in *Hochlampe* ('high_lamp') may refer to the property of the referent of being tall in a transparent way, semantic compositionality is quickly abandoned in compounds, as *Hochlampe* – in contrast to its phrasal counterpart – can also refer to a special kind of lamp used, for instance, at high altitude. In lexical semantics frameworks, semantic specialization of this sort is commonly linked to the presence of an underspecified relation R, present in compounds as products of lexical modification.[14] Semantic specialization in compounds is then linked to the explication of $R$, thus spelling out the information about the particular semantic relation holding between the constituent parts. In (25), this is illustrated through a localization relation $LOC$ (relating to altitude here), which holds between the

[14] See, among others, Bücking (2010), Olsen (2004), Spencer (2011) for details.

referent $x$ of the head noun and the (implicit) referent $v$ associated with the adjectival modifier:[15]

(25) *Hochlampe*
$\lambda x[\textsc{lamp}(x) \wedge \textsc{high}(v) \wedge \textsc{r}(x, v)]$
$\lambda x[\textsc{lamp}(x) \wedge \textsc{high}(v) \wedge \textsc{loc}(x, v)]$

In the following section, we will address the question of why novel A-N compounds instantly undergo semantic specialization. In essence, a pragmatic reasoning will be pursued, which holds that deviation from the canonical form of a complex expression implicates deviation from the compositional meaning of the complex.

## 4 Pragmatic implementation of markedness and semantic specialization

For a first illustration of why a pragmatic approach[16] could be meaningful for an implementation of the specific semantic characteristics of novel compounds let us look at the following contrasts, cf. Härtl (2015):

(26) a. Der Bentley hat ein optimales Design, fast schon ein Optimaldesign.
'the Bentley has an optimal design almost an optimal_design'
b. ??Der Bentley hat ein Optimaldesign, fast schon ein optimales Design.
'the Bentley has an optimal_design almost an optimal design'

(27) a. Tom hat eine ideale Lösung vorgeschlagen, fast schon eine Ideallösung.
'Tom proposed an ideal solution almost an ideal_solution'
b. ??Tom hat eine Ideallösung vorgeschlagen, fast schon eine ideale Lösung.
'Tom proposed an ideal solution almost an ideal_solution'

The examples contain A-N complexes that involve the adjectives *optimal* and *ideal*, i. e., multisyllabic Latin loan adjectives.17[17] For A-N complexes of this type, semantic equivalence has been claimed to hold between the phrasal expression and its compound counterpart, cf. Schlücker & Hüning (2009) for an analysis.

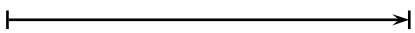
[15] See Bücking (2010), Maienborn (2003) for details. For a portrayal of modification in compounds and its semantic formalization the reader is referred to Olsen (2012).
[16] An earlier version of the analysis below has been presented in Härtl (2015).
[17] These are not blocked in German A-N compounds, cf. footnote 4.

As concerns their compositional semantics, we will adhere to this view but note that the "equivalence assumption" is challenged by the acceptability contrasts displayed in (26) and (27). Importantly, this contrast can be explained on grounds of the implication of a scale involved in constructions containing fast *schon* ('almost'). Fast, as a scalar particle, signifies that some property of the modified element is not fully attained and that its complement still holds: *almost X* → *not X*, see Rotstein & Winter (2004), cf. also Rapp & von Stechow (1999). In this sense, the examples in (28) below express a scalar contrast between two properties, where the predicative introduced by *fast* in the second conjunct corresponds to the "stronger" property (see (28a)) or category (28b), respectively:

(28) a. This is very serious music, almost dramatic.
b. This is a very good thought, almost a theory.

In constructions of this kind, the property expressed in the first conjunct relates to a point in the scale range that is left adjacent (though proximate, cf. Horn 2011) to the range associated with the predicative in the second conjunct.

We do not claim that the scalar contrast shown in the felicitous examples in (26a) and (27a) is rooted in an extensional difference between the phrase and the compound in a sense that, e. g., *Optimaldesign* denotes a somehow "more optimal" design as compared to *optimales Design*. Rather, we argue that the scalar contrast involved in the constructions relates to a difference between the two expressions in how pronounced their status is as a category name. Viewed in this light, the displayed scalar contrast relates to an intensification of a category match, i. e., an intensification as to how functional an expression is as a representative of a category of some sort:

(29) 


The acceptability contrast between (26a) and (26b) as well as (27a) and (27b) indicates that, while their compositional meaning may be equivalent, the A-N compound is closer to the right edge of the scale, i. e., to a category name, than the A-N phrase.

How can the effect illustrated in (26) and (27) be modelled from a pragmatic perspective? For an answer, first, observe the content of the scalar implicature that the meaning of *almost* and the selection of the non-compound expression in the first conjunct gives rise to. The choice of the

phrase in the first conjunct, i. e., *optimales Design* in (26a), indicates that the stronger categorization X, i. e., the compound *Optimaldesign*, on the corresponding scale, does not hold in the context of the utterance. This, in turn, implicates that the phrase is the weaker expression ($Z$), cf. Horn (1972):

(30) CATEGORY ($Z$) < CATEGORY ($X$)
*almost* $X \rightarrow Z \mid Z = \neg X$

At this point, the question arises of why a compound expression like *Optimaldesign* is perceived as a representative of a stronger category as compared to the phrasal counterpart. Note that newly formed compounds have been argued to generate a certain communicative effect, which is rooted in the novelty of the expression. This novelty effect has been associated with a certain "markedness" of word-formation products, i. e., with the unusualness of an expression perceived as non-conventionalized to a significant degree, see Barz (1998: 12ff.), cf. Olsen (1986).[18] The strength of a novelty effect is determined by a number of linguistic criteria relating, for example, to grammatical rule-boundedness of a novel compound or its paradigmaticity, see Barz (1998) for details. For example, phrasal compounds like (*over-the-fence gossip*, *all-or-nothing principle*) can be argued to create a comparatively strong novelty effect as they are particularly expressive, see Meibauer (2007).

From this perspective, it is crucial to observe that newly formed A-N compounds in German – although the pattern is clearly productive (see Fleischer & Barz 1995) and represents an old word-formation process in Germanic (see Hüning 2010) – create a considerably stronger novelty effect in comparison to N-N compounds. This can be explained by the structural similarity between A-N phrases and A-N compounds: N-N compounds like *Fahrradkiste* ('bicycle_box') can, by applying a default interpretation,[19] take on a variety of meanings (e. g., a box used on a bike's luggage carrier or a special box for bikes to be transported in), which distinctly differ from the compound realization in their grammatical appearance and require additional lexical material. In contrast, an A-N compound like *Flachkiste* ('flat_box') does per se not suggest a meaning deviating from the intersective interpretation of the corresponding phrase, i. e., *flache Kiste* ('flat box'). Instead, it is the particular choice of the compound form itself and the deviation from the canonical phrasal realization, which forces the ad-

[18] I wish to thank Sebastian Bücking for his input on this matter.
[19] See, for example, Fanselow (1988) and Meyer (1993) for an analysis.

dressee to infer a deviating meaning – apparently a "pricey" process, which is reflected in a stronger novelty effect.

Crucially, this interplay between the speaker's choice of a grammatical form and the interpretation on the recipient's side can be characterized as a manner-based conflict resolution in the sense of Levinson's M-principle, see Levinson (2000: 136):

(31) M-principle
*Speaker's maxim*: Indicate an abnormal, nonstereotypical situation by using marked expressions that contrast with those you would use to describe the corresponding normal, stereotypical situation.
*Recipient's corollary*: What is said in an abnormal way indicates an abnormal situation, or marked messages indicate marked situations.

By virtue of the M-principle, marked forms render meanings that are not present with the unmarked, default expression, see Levinson (2000: 137). An expression is marked, according to Levinson, if it is morphologically complex and less lexicalized. Also on the form side are factors relating to the frequency of an expression as well as its grammatical neutralness. For instance, Levinson uses the M-principle to explain interpretational differences between N-N compounds and corresponding phrasal expressions like *box for matches*, which denotes some non-prototypical box used for matches – in contrast to *matchbox*, which embodies the default interpretation as a specific type of box, see Levinson (2000: 147).[20] The case is subject to the M-principle due to the fact that *matchbox* represents a conventionalized form and a deviation from it implicates a meaning deviating from the one of the conventionalized form. Meibauer (2014) analyzes rivalries between words and phrases of this kind as instances of "Poser blocking", that is, as cases of blocking out of the lexicon into syntax, under which words "beat", i. e., rule out phrases, cf. Embick & Marantz (2008), Poser (1992), Williams (2007). An example is the blocking of the phrasal expression *more smart* by virtue of the existence of the synthetic comparative *smarter*. Applying this rationale to compound-phrase pairs like *box for matches* vs. *matchbox* entails that the former is ruled out by the latter and can, thus, not carry the conventionalized meaning of the latter.

With a reversed logic, the above observed novelty effect caused by the markedness of A-N compounds like *Flachkiste* ('flat_box'), *Rotdach* ('red_roof'), *Blauschachtel* ('blue_box') can be characterized as a trigger of an M-based implicature. As a word-formation product, the compound

[20] I wish to thank Martin Schäfer for his input on this matter.

form requires a grammatical operation that departs from the canonical formation of complex expressions involving adjectival modification, that is, from the phrasal expression. The insight is based on the understanding that morphology produces more marked forms than syntax when the two generate otherwise semantically equivalent outputs, see Ackema & Neeleman (2004, 2010). The authors argue this to be reflected in blocking effects where a phrasal and unmarked form like to drive a truck blocks the formation of **to truck-drive*, i. e., a morphological product, with the explanation that the two compete for the same structural combination, see Ackema & Neelemann (2010: 28).

With the same explanation, we argue that with an A-N compound a costlier form is chosen by the speaker over of the default expression. The selection of the marked, costlier form indicates a deviation from the meaning of the unmarked form. In (32), the "less costly than" relation is signified by means of the ordering relation $A < A'$:

(32) A form-meaning pair $A'$ is re-interpreted (by virtue of the M-principle) if there is an alternative form-meaning pair $A$ such that $A < A'$.

In this manner, the interpretation of a novel A-N compound as semantically specialized and as a representative of a kind name, as demonstrated in section 3 above, is systematically linked to an M-based implicature elicited through the markedness of the expression. In the sense of Horn's (hearer-based) Q-principle ('Make your contribution sufficient'), see Horn (1984), the A-N compound is inferred to be more informative than the A-N phrase, given that the phrasal expression does not encode more than the canonical compositional semantic interpretation.

The notion of costliness as it is used here relates to a deviation from linguistic default and not to the processing cost linked to the length of an expression. A potential objection to the implementation of the M-principle to explain the markedness of A-N compounds, as suggested above, may be based on the time-honored insight that, usually, it is the somehow longer linguistic alternative, which is indicated as marked in comparison to a shorter alternative. Consequently, it should in fact be the A-N phrase, as the longer expression, that is the marked alternative.[21] Note, however, that an economy-based selection of the A-N compound as the more economical and thus unmarked alternative is implausible. Except for the absence of the in-

[21] This type of implicature is rooted in Grice's maxim 'Be brief', see Grice (1975), and in Levinson's I-principle ('Say no more than is required'), respectively, see Levinson (2000: 114), cf. also Horn's (1984) R-principle.

flectional features, there is no particular reason to assume an advantage for A-N compounds to be communicatively more efficient than A-N phrases. That is also why A-N compounds, in contrast to N-N compounds, do not occur as nonce expressions – motivated by economy – with a meaning intended to match the compositional meaning of the phrasal counterpart. Consider the contrast between (33a), containing the felicitous N-N nonce form *Vortrags-Hemd* ('talk_shirt'), and the unacceptable nonce A-N compound *Weiß-Hemd* ('white_shirt') in (33b):

(33) a. Tom hat ein Hemd für den Vortrag und ein Hemd für die Party gekauft. Das Vortrags-Hemd hat einen Stehkragen.
'Tom bought a shirt for the talk and a shirt for the party. the talk_shirt has a stand-up collar'

b. Tom hat ein weißes Hemd und ein schwarzes Hemd gekauft. Das *Weiß-Hemd / weiße Hemd hat einen Stehkragen.
'Tom bought a white shirt and a black shirt. the white_shirt / white shirt has a stand-up collar'

We can conclude that, from a purely configurational point of view, the A-N phrase and the A-N compound are equally informative, hence the unlikeliness of a selection of the compound over the phrasal form based on economy. Consequently, given the economic equivalence between the two forms, the choice of an A-N compound can once more be assumed to induce an M-based implicature and a re-interpretation in the sense outlined above.

## 5 Conclusion

The present paper investigated the notion of normality in the context of the divide between word-formation and syntax. A central finding is that the formation of a novel A-N compound represents a deviation from the default way of forming a complex expression of this type, i. e., a phrasal A-N expression. To explain the differences in meaning between compound and phrase, and, in particular, the former's affinity to adopt a kind interpretation, we used a pragmatic, manner-based principle. It holds that a deviation from the default realization of a complex form implicates a deviation from the compositional meaning of the complex. A conclusion to be drawn from a pragmatically based rationale is that semantic specialization in compounds is not produced after or by lexicalization – as is often claimed – but is operating "right from the beginning" of a compound's life.

When the notion is viewed in this light, normality relates to defaults in grammar. Normality as a semantic-conceptual notion finds its linguistic

reflex, for example, in generic descriptions about kinds, and the current paper has argued that compound expressions are more inclined to adopt a kind interpretation, as compared to phrasal expressions. The kind affinity of compounds was revealed in several linguistic environments involving kind-sensitive predicates (e. g., *develop*) and modifiers (*typical*). The affinity of compounds to function as labels, that is, as names in a lexical sense, has been related to their compatibility with name-sensitive expressions like *so-called* and, in particular, with the higher proportion of phrases to occur with quotation marks in a naming environment of this sort. This was interpreted as an indication of a higher communicative pressure for phrases, as compared to compounds, to signal their name status.

The theoretical understanding pursued in the current paper is that morphology produces more marked forms than syntax in languages like German. Against this background, the proposed analysis is best compatible with a lexicalist grammar model, in which a categorical separation between word-formation and syntax is upheld.

## 6 References

Ackema, P. & Neeleman, A. (2004): *Beyond Morphology: Interface Conditions on Word Formation*. Oxford, NY: OUP.

Ackema, P. & Neeleman, A. (2010): The Role of Syntax and Morphology in Compounding. In: Scalise, S. & Vogel, I. (Hgg.): *Cross-Disciplinary Issues in Compounding*. Amsterdam & Philadelphia: John Benjamins, 21-36.

Barz, I. (1996): Komposition und Kollokation. In: Knobloch, C. & B. Schaeder (Hgg.): *Nomination – Fachsprachlich und Gemeinsprachlich*. Opladen: Westdeutscher Verlag, 127-146.

Barz, I. (1998): Zum Neuheitseffekt von Wortbildungen. In: Teubert, W. (Hg.): *Neologie und Korpus*. Tübingen: Narr, 11-30.

Bierwisch, M. (1984): Dimensionsadjektive: Semantische Struktur und begriffliche Interpretation. In: *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung 37(4)*: 490-512.

Bierwisch, M. (1989): The Semantics of Gradation. In: Bierwisch, M. & Lang, E. (Hgg.): *Dimensional Adjectives*. Berlin: Springer, 71-261.

Booij, G. (2009): Lexical Integrity as a Morphological Universal: a Constructionist View. In: Scalise, S. & Magni, E. & Bisetto, A. (Hgg.): *Universals of Language Today*. Dordrecht: Springer, 83-100.

Booij, G. (2009a): Lexical Integrity as a Formal Universal. A Constructionist View. In: Scalise, S. & Magni, E. & Bisetto, A. (Hgg.): *Universals of language today*. Berlin: Springer Science & Business Media, 83-100.

Booij, G. (2010): *Construction Morphology*. Oxford: OUP.

Bücking, S. (2010): German Nominal Compounds as Underspecified Names for Kinds. In: Olsen, S. (Hg.): *New Impulses in Word-Formation*. Hamburg: Buske, 253-281.

Carlson, G. N. (1977): *Reference to Kinds in English*. Amherst: UMass.

Carlson, G. N. (1991): Natural Kinds and Common Nouns. In: von Stechow, A. & Wunderlich, D. (Hgg.): *Semantics: An International Handbook of Contemporary Research*. Berlin & New York: de Gruyter, 370-398.

Chierchia, G. (1998): Reference to Kinds across Language. In: *Natural Language Semantics* 6, 339-405.

D'Avis, F. (2013): *Normalität und Sprache – Normalvorstellungen und ihre Rolle in bestimmten Konstruktionen des Deutschen*. Habilitationsschrift, Johannes Gutenberg Universität Mainz.

Di Sciullo, A. & Williams, E. (1987): *On the Definition of Word* (= *Linguistic Inquiry Monographs 14*). Cambridge, MA: MIT Press.

Downing, P. (1977): On the Creation and Use of English Compound Nouns. In: *Language* 53 (4): 810-842.

Embick, D. & Marantz, A. (2008): Architecture and Blocking. In: *Linguistic Inquiry* 39 (1): 1-53.

Fanselow, G. (1988): Word Syntax and Semantic Principles. In: Booij, G. & van Marle, J. (Hgg.): *Yearbook of Morphology*. Dordrecht: Foris, 95-122.

Fleischer, W. & Barz, I. (1995): *Wortbildung der deutschen Gegenwartssprache* (2. Aufl.). Tübingen: Niemeyer.

Gigerenzer, G. & Brighton, H. (2009): Homo Heuristicus: Why Biased Minds Make Better Inferences. In: *Topics in Cognitive Science 1*. 107-143.

Grice, H. P. (1975): Logic and Conversation. In: Cole, P. & Morgan, J. L. (Hgg.): *Syntax and Semantics 3: Speech Acts*. New York: Academic Press, 41-58.

Gunkel, L. & Zifonun, G. (2009): Classifying Modifiers in Common Names. In: *Word Structure* 2 (2): 205-218.

Gutzmann, D. & Stei, E. (2011): How Quotation Marks what People Do with Words. *Journal of Pragmatics* (43): 2650-2663

Härtl, H. (2013): Arguments of Non-Heads. In: Härtl, H. (ed.): *Interfaces of Morphology* (= *studia grammatica 74*). Berlin: Akademie, 163-177.

Härtl, H. (2015): Semantic Non-Transparency in the Mental Lexicon: On the Relation between Word-Formation and Naming. In: Brinker-von der Heyde, C. & Kalwa, N. & Klug, N.-M. & Reszke. P. (Hgg.): *Eigentlichkeit – Zum Verhältnis von Sprache, Sprechern und Welt*. Berlin & Boston: de Gruyter, 395-416.

Horn, L. R. (1972): *On the Semantic Properties of Logical Operators in English*. PhD Thesis. LA: University of California.

Horn, L. R. (1984): Toward a New Taxonomy for Pragmatic Inference: Q-based and R-based Implicature. In: Schiffrin, D. (Hg.): *Meaning, Form and Use in Context* (GURT '84). Washington: Georgetown University Press, 11-42.

Horn, L. R. (2011): Almost Forever. In: Etsuyo Yuasa et al. (Hgg.): *Pragmatics and Autolexical Grammar in Honor of Jerry Sadock*. Amsterdam & Philadelphia: John Benjamins, 3-21.

Hüning, M. (2010): Adjective + Noun Constructions between Syntax and Word Formation in Dutch and German. In: Michel, S. & Onysko, A. (Hgg.): *Cognitive Approaches to Word Formation*. Berlin & New York: de Gruyter, 195-215.

Kennedy, C. & McNally, L. (2005): Scale Structure, Degree Modification, and the Semantics of Gradable Predicates. In: *Language* 81 (2), 345-381.

Khemlani, S. & Leslie, S.-J. & Glucksberg, S. & Rubio Fernandez, P. R. (2007): Do ducks lay eggs? How people interpret generic assertions. In McNamara, D. S. & Trafton, J. G. (Hgg.): *Proceedings of the 29th Annual Cognitive Science Society Austin*. TX: Cognitive Science Society, 395-400.

Khemlani, S., Leslie, S.J. & Glucksberg, S. (2012): Inferences about Members of Kinds: The Generics Hypothesis. In: *Language and Cognitive Processes* 27, 887-900.

Klein, W. & Perdue, C. (1997): The Basic Variety (or: Couldn't natural languages be much simpler?). In: *Second Language Research 13*, 301-347.

Klockow, R. (1980): *Linguistik der Gänsefüßchen. Untersuchungen zum Gebrauch der Anführungszeichen im gegenwärtigen Deutsch*. Frankfurt am Main: Haag und Herchen.

Klos, V. (2011): *Komposition und Kompositionalität: Möglichkeiten und Grenzen der semantischen Dekodierung von Substantivkomposita*. Berlin: de Gruyter.

Krifka, M. et al. (1995): Genericity. An Introduction. In: Carlson, G. N. & Pelletier, F. J. (Hgg.): *The Generic Book*. Chicago & London: UCP, 1-124.

Lawler, J. (1973): Studies in English Generics. (= *University of Michigan Papers in Linguistics 1-1*). In: *Linguistics 1 (1)*. University of Michigan Press.

Leslie, S. J. (2008): Generics: Cognition and Acquisition. In: *The Philosophical Review* 117, 1-49.

Levinson, S. C. (2000): *Presumptive Meanings: The Theory of Generalized Conversational Implicature*. Cambridge, MA: The MIT Press.

Lipka, L., Handl, S. & Falkner, W. (2004): Lexicalization & Institutionalization. The State of the Art in 2004. *SKASE Journal of Theoretical Linguistics* 1 (1), 2-19.

Maienborn, C. (2003): Event-Internal Modifiers: Semantic Underspecification and Conceptual Interpretation. In: Lang, E. & Fabricius-Hansen, C. & Maienborn, C. (Hgg.): *Modifying Adjuncts*. Berlin: de Gruyter, 475-509.

Meibauer, J. (2007): How Marginal are Phrasal Compounds? Generalized Insertion, Expressivity, and I/Q-Interaction. In: *Morphology* 17, 233-259.

Meibauer, J. (2007a): Syngrapheme als pragmatische Indikatoren: Anführung und Auslassung. In: Döring, S. & Geilfuß-Wolfgang, J. (Hgg.): *Von der Pragmatik zur Grammatik*. Leipzig: Universitätsverlag, 21-37.

Meibauer, J. (2014): Word-Formation and Contextualism. In: *International Review of Pragmatics* 6: 103-126.

Meyer, R. (1993): Compound Comprehension in Isolation and in Context: The Contribution of Conceptual and Discourse Knowledge to the

Comprehension of German Novel Noun-Noun Compounds. (= *Linguistische Arbeiten 299*). Tübingen: Niemeyer.

Mueller-Reichau, O. (2011): *Sorting the World: On the Relevance of the Kind/Object-Distinction to Referential Semantics*. Heusenstamm: Ontos.

Olsen, S. (1986): *Wortbildung im Deutschen*. Stuttgart: Kröner.

Olsen, S. (2004): Coordination in Morphology and Syntax. In: ter Meulen, A. & Abraham, W. (Hgg.): *The Composition of Meaning. From Lexeme to Discourse*. Amsterdam & Philadelphia: John Benjamins, 17-37.

Olsen, S. (2012): Semantics of Compounds. In: Maienborn, C. & von Heusinger, K. & Portner, P. (Hgg.): *Semantics: An International Handbook of Natural Language Meaning, Vol. 3*. Berlin: de Gruyter, 2120-2150.

Pelletier, F. (2006): Generics. In: Borchert, D. (Hg.) *Encyclopedia of Philosophy*, 2nd Ed. Detroit: Thomson Gale, 40-43.

Pörings, R. & Schmitz, U. (1999): *Sprache und Sprachwissenschaft. Eine kognitiv orientierte Einführung*. Tübingen: Narr.

Poser, W. J. (1992): Blocking of Phrasal Constructions by Lexical Items. In: Sag, I. & Szabolsci, A. (eds.): *Lexical Matters*. Stanford, CA: CSLI, 111-130.

Prasada, S. & Dillingham, E. (2009): Representation of Principled Connections: A Window Onto the Formal Aspect of Common Sense Conception. In: *Cognitive Science* 33, 401-448.

Prasada, S., Hennefield, L. & Otap, D. (2012): Conceptual and Linguistic Representations of Kinds and Classes. In: *Cognitive Science* 36, 1224-1250.

Prasada, S. & Khemlani, S. & Leslie, S.-J., Glucksberg, S. (2013): Conceptual Distinctions amongst Generics. In: *Cognition* 126, 405-422.

Predelli, S. (2003): Scare Quotes and Their Relation to Other Semantic Issues. In: *Linguistics and Philosophy* 26 (1): 1-28.

Rapp, I. (2015): On the Temporal Interpretation of Present Participles in German. In: *Journal of Semantics* 32 (2), 477-523.

Rapp, I. & von Stechow, A. (1999): Fast "almost" and the Visibility Parameter for Functional Adverbs. In: *Journal of Semantics* 16: 149-204.