Affixoids and constructional idioms*

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1. Introduction

Affixoids are compound constituents with an affix-like behaviour. An example from German is the adjective *fähig* 'able' that occurs in a huge number of German complex adjectives as their rightmost constituent. Wills collected about 1000 adjective types with *fähig* (Wills 1986). This is illustrated in (1):

(1) a. veränderungs-fähig 'able to change'

    wandlungs-fähig 'able to change'

  b. umlaut-fähig 'fit for undergoing Umlaut'

    kredit-fähig 'fit for getting credit'

In the complex words (1a) we observe the original meaning of the adjective *fähig* 'able' which can be predicated of animate entities that can perform intentional actions. It is with this meaning that the adjective *fähig* can be used as free form, without forming part of a compound, as in *Er ist fähig sich zu entscheiden* 'He is able to make a decision'. In (1b) we find a different though related meaning of *fähig*, 'fit for'. This bound meaning of the adjective *fähig*, in combination with the observation that this use of *fähig* is very productive in complex words, is why some linguists of German have qualified this word as an affixoid. Its use looks similar to that of derivational affixes, the only difference being that derivational affixes are bound morphemes, whereas morphemes like *fähig* are lexical morphemes that have unbound meanings as well, and thus can be used as words.

Another example of an affixoid is the German adjective *frei* 'free' that, like its English and Dutch equivalents *free* and *vrij* respectively has developed the more general meaning 'without what is denoted by the base word' when used as the right constituent of compounds, as in *alcohol-frei* 'without alcohol'.[1] The use of this affixoid presupposes that the presence of what the base word denotes is a slightly negative evaluation. For instance, by using the adjective *sugar-free* instead of *sugar-less*, we imply that the presence of sugar is evaluated negatively, for instance, since it is not good for your health.

The reason for giving a special status to German words like *fähig* and *frei* is that the use of these words with their bound meaning is not restricted to one or a few compounds, but can be used productively with this bound meaning for the formation of new adjectives. Hence, this phenomenon is not just a matter of lexicalization of individual words, it concerns a series of words that share their second constituent.

Both first and second constituents of Dutch and German compounds may exhibit this type of behaviour, and therefore, we find lists of both prefixoids and suffixoids of these languages in the relevant literature (Ascoop and Leuschner 2006; Decroos and Leuschner 2008; Leuschner 2010). A survey of such affixoids in Dutch can be found in Meesters (2004). In this paper, we will focus on affixoid phenomena in Dutch and German as well (cf. the comparison of compounding in both languages in Hüning and Schlücker 2010).

Examples of noun prefixoids are German *Riesen* 'giant' with the meaning 'enormous', as in *Riesen-erfolg* 'enormous success', and Dutch *hoofd* 'head' with the meaning 'main', as in *hoofd-probleem* 'lit. head problem, main problem' (Booij 2010a). An example of an adjective that is used as prefixoid is Dutch *oud* 'old' with the meaning 'former', as in *oud-leerling* 'ex-pupil' (Van Goethem 2008):

(2)   a.   Riesen-durst 'enormous thirst'
                Riesen-enttäuschung 'enormous disappointment'
                Riesen-erfolg 'enormous success'
                Riesen-überraschung 'enormous surprise'
    b.   hoofd-bezwaar 'main objection'
                hoofd-gedachte 'main thought'

                hoofd-oorzaak 'main cause'

                hoofd-probleem 'main problem'

c.   oud-Ajacied 'former Ajax-player'

                oud-burgemeester 'former mayor'

                oud-collega 'former colleague'

                oud-leerling 'former pupil'

The Dutch adjective *oud* when used in this way imposes the semantic restriction that the base word has to denote a human being with a particular social role. Hence, a noun like *oud-huis* 'former house' is ill-formed. In German, the use of its equivalent *Alt* is even more restricted, as it is only used to denote former political functions, as in *Alt-Kanzler* 'former chancellor'.

The theoretical question at issue here is whether we should introduce a new category of morphemes, that of affixoids, to account for the phenomena discussed above. This issue is raised by Schmidt, who argued against this category used in a number of descriptive studies of German morphology (Schmidt 1987). Schmidt's main point is that there is no good reason to introduce a third category besides the categories 'affix' and 'compound constituent'. According to Schmidt, the fact that a word has a special meaning when embedded in a compound is nothing special, as the choice of one of the meanings of a polysemous word often correlates with the context in which that word occurs. On the other hand, Stevens wants to maintain the notion affixoid, as it is relevant for describing and understanding morphological change, in particular the rise of derivational affixes from compound constituents (Stevens 2000, 2005). Stevens mentions among others the following tests for determining whether a morpheme is an affixoid:

(3)   "a. Affixoids in spoken languages are not just serial but usually very productive. They are the basis for new formations.

b. Affixoids exist alongside a formally identical, and usually free "parent" morph. This means that there are two linguistic items identical in form and one is derived from the other.

c. The meaning of the affixoid is more generalized and abstract than the formally identical parent. In contrast to some affixes, the affixoid does not express grammatical relations (like person, case, tense, etc.)." (Stevens 2005: 73).

These tests reflect the idea that affixoid morphemes have acquired a more abstract meaning than their lexemic counterpart, and that they can be used productively with this meaning.

Because of such criteria, Elsen (2009), too, comes to the conclusion that there is a need for a third category of morphemes besides the categories of 'lexical morphemes' and 'affixes'. She wants to introduce the category 'affixoid' and a corresponding word formation process, the 'affixoid formation', in order to account for the peculiarities of the complex words involved. While we do appreciate her careful and accurate overview of the discussion about the notion of 'affixoid', we are not convinced that it should be necessary to introduce new categories. What the discussion illustrates is mainly that there is no sharp distinction between derivation and compounding. Affixes and lexical words are at the two ends of a scale and the same is true for the two word formation processes, i.e. derivation and compounding. In between, there are formations with aspects of the both sides. The term 'affixoid' is a useful descriptive term to denote the phenomenon of bound meanings for words when embedded in complex words. Their behaviour can be insightfully accounted for in the model of the hierarchical lexicon proposed within the framework of Construction Morphology (Booij 2010b). This model provides a formalism that does not force us to make an absolute distinction between compounding and derivation. Affixoids can be characterized as the lexically specified parts of constructional idioms (section 2). Constructional idioms for compounds are schemas for subsets of compounds in which one of the slots is lexically fixed. In section 3, we adduce additional arguments for the necessity of such subschemas, and discuss the problem of how to account for the differences in productivity of affixoids. In section 4, we argue that the use of the notion 'constructional idiom' can be fruitfully extended to other subsets of compounds in which one of the constituents has special properties. Section 5 summarizes our findings and conclusions, and relates them briefly to how the rise of derivational affixes from compound constituents can be understood.

2. Affixoids and constructional idioms

What is it supposed to mean that a morpheme is called an affixoid? One option is to assume that such a morpheme has two entries in the lexicon, one as a lexical morpheme, and one as an affix, in the list of affixes of the language, each with their specific meaning or range of meanings. However, this is not very enlightening. For instance, if we were to list German *fähig* as a suffix, we have to specify that it creates adjectives, whereas this follows from the right-hand headedness of German compounds if we consider *fähig* as an adjective, even in words like *kredit-fähig*, where *fähig* carries the specific meaning restricted to the context of compounds.

We can keep the insights behind the notion 'affixoid' without introducing an additional category of morphemes besides lexical morphemes and bound morphemes by assuming a hierarchical lexicon, i.e. a lexicon with different layers of abstraction (Booij 2005, 2010a, 2010b). Complex words with affixoids are compounds in which one of the constituents has a special, sometimes more abstract, meaning that can be used productively for the formation of new compounds. Hence, the phenomenon of affixoids is one of the arguments for a hierarchical lexicon in which schemas and subschemas are used. In the case of German *frei*, for instance, the general compound patterns $[NA]_A$ and $[VA]_A$ dominate the following subschemas:

(4) $<[N_i \ [frei]_{Aj}]_{Ak} \ \leftrightarrow \ [without_j \ SEM_i]_k>$ Pragmatics: the presence of SEM_i is evaluated negatively

A schema, marked by angled brackets is a correlation (indicated by the double arrow), of the form (left part) and meaning (right part) of a set of linguistic expressions. Correlations between subparts of the formal structure and the semantic structure are indicated by means of co-indexation.

The hierarchical lexicon of German contains schemas for compounds at various levels of abstraction. All German compounds are right-headed, which is expressed at the highest level of abstraction since the variable for syntactic category of the right constituent (Y) is identical to that of the compound as a whole. The semantic

specification expresses that a compound of the type Y is a kind of Y with some relation to the modifier constituent X. At a lower level we specify constructional idioms such as (4), which in their turn dominate individual compounds of the relevant type:

(5) $<[X_i \; Y_j]_{Yk} \leftrightarrow [SEM_j \text{ with relation R to } SEM_i]_k>$

|

$<[N_i \; [frei]_{Aj}]_{Ak} \leftrightarrow [without_j \; SEM_i]_k>$

|

$<[[alkohol]_{Ni} \; [frei]_{Aj}]_{Ak} \leftrightarrow [without_j \; SEM_i]_k>$

Each level motivates properties of the next lower level, and serves to reduce the degree of arbitrariness between meaning and form in certain sets of compounds. That is, both the schemas and the fully specified individual complex words that instantiate these patterns are stored in the lexicon. Thus, expression is given to the fact that abstract morphological schemas depend for their existence on fully specified words.

The word-constructional schema in (4) can be qualified as a constructional idiom (that is, a schema with both variable slots and lexically specified slots), since one of the positions is lexically specified, whereas the other position is open (Jackendoff 2002). Such constructional idioms for compounds serve to express that the specified compound constituents have meanings that are different from those of the corresponding words used as free forms. In addition, this format expresses that the specific bound meaning is potentially productive, because the other position in the constructional idiom is a variable.[2]

The criterion of 'bound meaning' is important. There are many sets of compounds that share either their first or their second constituent. As long as this shared constituent has the same meaning as when used as a separate word, there is no reason to assume a constructional idiom for such a set of compounds. For instance, Dutch has lot of compounds with the word *molen* 'mill' as their right constituent. Since the meaning of *molen* in such compounds does not deviate from the meaning of *molen* as an independent word, there is no reason to assume a constructional idiom with *molen*.

It is, however, not always easy to decide whether a certain meaning is to be characterized as 'bound' or belongs to the polysemous semantic spectrum of the free form, the word. This can be illustrated by *frei* as well. Like its Dutch counterpart *vrij*, German *frei* has developed the 'without X' meaning also for the adjective (*frei von Sorgen* 'without a care, not hindered by a care'). This means, that it is difficult to delimit the bound meaning from one of the semantic possibilities of the original word, especially since it is not clear whether this meaning developed independently with that word or on the basis of the bound meaning through a process that has been called 'debonding' by Norde (2009) who sees this as a possible case of degrammaticalization (cf. also section 3.2 on the reinterpretation of affixoids).

The use of constructional idioms for sets of compounds serves to account for the polysemy of the specified words: in addition to one or more meanings that these words have when used by themselves, they have another (but related) meaning when used as part of a compound.

The existence of constructional idioms for words with affixoid behaviour may manifest itself in specific semantic and/or formal properties. Recall that the Dutch adjective *oud* when used as an affixoid with the meaning 'former' can only be added to nouns denoting social roles of human beings, whereas the adjective *oud* with its literal sense of 'old' in phrases combines with all sorts of nouns. An additional observation on the affixoid use of *oud* is that in words beginning with *oud-*, main stress is on the second constituent, whereas normally, AN compounds carry their main stress on their first constituent, as in *brúin-brood* 'brown bread', *gróot-vader* 'grandfather'. In this respect, *oud-* behaves similarly to prefixes like *ex-* 'ex-'. That is, we have to specify the specific stress pattern of *oud*-compounds with this meaning as part of the relevant constructional schema. In sum, the following subschema for Dutch AN compounds has to assumed:

(6) $<[[oud]_{Ai} [N_j]]_{Nk} \leftrightarrow [former_i SEM_j]_k>$
        Conditions: N_j carries main stress; N_j = social role

After this brief sketch of the way in which affixoids can be represented within a hierarchical lexicon model, we now turn to a number of properties of affixoids that show that they need to be singled out as forming special subclasses of compounds.

3. The need for constructional idioms

Why do we need constructional idioms as characterizations of the various patterns if we list the members of the various word families anyway? Apart from their redundancy rule function (the statement of systematic patterns of interpretation for subsets of compounds), there are some other observations that suggest that such schemas can be abstracted and used by native speakers.

First of all, many of these affixoids are productive. Therefore, we need to account for this productive use of affixoids with a schema with a variable (section 3.1). In addition, affixoids may undergo a process of reinterpretation which suggests that their productive affixoid meaning is recognized by language users (section 3.2). This is also clear from grammatical replication and borrowing (section 3.3). Affixoids are also the historical source of affixes (section 3.4). Finally, in section 3.5. it is shown that we need a more abstract compounding schema for all compounds that begin with a word with intensifier meaning, because such compound constituents can all be repeated in emphatic coordination.

3.1. Degrees of productivity

Given the characterization of affixoids as lexical morphemes with a bound meaning, we may wonder to what extent productivity should be seen as a necessary property of affixoids. Consider the use of *steen* 'brick, stone' in the following Dutch N+A compounds taken from the latest electronic edition of *Van Dale Groot Woordenboek der Nederlandse Taal*:

(7)   steen-dood 'very dead'
         steen-goed 'very good'

steen-hard 'very hard'

steen-koud 'very cold'

steen-rijk 'very rich'

These are the only AN compounds beginning with *steen* listed in this dictionary, apart from *steen-rood* 'red as a stone'.[3] The part *steen* expresses the meaning 'very'. *Van Dale* also has an entry *steen-*, with a hyphen right after the morpheme, thus suggesting that this morpheme is used as a prefixoid. It is glossed as *in hoge mate* 'to a high degree', and the example provided in the prefixoid entry is the compound adjective *steen-dood* 'very dead', an adjective that is being used indeed, as a Google search reveals. Thus, we see class expansion in the sense that *steen* 'stone' is used as a modifier for a larger class of adjectives than the literal meaning of *steen* would make us to expect (This literal meaning may still be linked to the meanings of *steenhard* and *steenkoud*). However, this use of *steen* as an intensifier is not productive. For instance, we do not find *steen-slecht* 'very bad' besides *steen-goed* 'very good' in actual language use, and it does not feel as a correct adjective for speakers of Dutch. Hence, what we have to do with here is a closed set of compounds that begin with the same word, hence a word family, where some of the lexicalized compounds share the lexicalized meaning of this first word.

Another example of a word family of compounds with a lexicalized meaning for the first constituent is the set of compounds beginning with *dood* 'death'. The following words, among others, where *dood* means 'very', are listed in the *Van Dale* dictionary:

(10)   dood-gemoedereerd 'without any hesitation'

dood-gewoon 'very normal'

dood-leuk 'very nice'

dood-moe 'very tired'

dood-ongelukkig 'very unhappy'

dood-op 'very tired'

dood-simpel 'very simple'

dood-stil 'very quiet'

dood-ziek 'very ill'

Again, *Van Dale* lists this morpheme as a prefix(oid) *dood-*, with the meaning 'very'. The word is also listed as one of the affixoids of Dutch in (Leuschner 2010). However, this word cannot be used productively as an intensifier prefixoid. For instance, *dood-* does not combine straightforwardly with other adjectives that denote an unpleasant state, such as ?*dood-lelijk* 'very ugly', or ?*dood-gemeen* 'very nasty'.

In contrast to these unproductive prefixoids, the prefixoid *reuze-* 'enormous, very' appears to be attached to a wide range of adjectives, as illustrated in (11) (Google search, 09.03.2012), and can easily be attached to new adjectives:

(11)   reuze-arm 'very poor'
        reuze-bekakt 'very posh'
        reuze-beleefd 'very polite'
        reuze-bijzonder 'very special'
        reuze-eigenwijs 'very conceited'
        reuze-gemeen 'very nasty'
        reuze-gewoon 'very common'
        reuze-gezellig 'very cosy'
        reuze-lief 'very sweet'
        reuze-stout 'very naughty'
        reuze-verwend 'very spoiled'

Its productivity can also be illustrated by the combination of *reuze-* with recent loan words, as in *reuze-cool* 'very cool' or *reuze-soft* 'very soft'.

Complex words that share one or more morphemes form word families, and there is a wealth of evidence that word families form an important ingredient in the structure of the mental lexicon (Schlücker and Plag 2011; Schreuder and Baayen 1997). Constructional idioms can be seen as characterizations of specific types of word families consisting of compounds that either have the same modifier constituent or the same head, and with a special bound meaning for the common constituent. Hence, it is very well possible that language users discover the common bound meaning of a lexical morpheme

in a number of related conventionalized complex words. Should this common meaning always be expressed by an abstract schema, that is, a constructional idiom? Does the assumption of an abstract schema imply that the pattern is productive?

There are two possible approaches to the problem of productivity. One option is to make an absolute distinction between incidental extension of a pattern by means of analogy, where a specific existing complex word forms the model, versus extension of a pattern by means of an abstract schema, in which case there is no specific word that serves as the model. For instance, the word *pis-link* 'lit. piss-angry, very angry' may have been coined in analogy to the compound *pis-nijdig* 'very angry', the only other existing compound in which *pis* 'piss' has the intensifier meaning, combined with an adjective with the same meaning. On the other hand, we cannot identify a specific compound as the model for the use of *reuze-* as an intensifier, and thus the affixoid use of *reuze-* can be specified in a schema.

The Van Dale Dutch dictionary seems to follow this model, since words such as *dood-, steen-, reuze-* have a separate entry for their use as intensifier, whereas there is no entry *pis-*, only an entry *pis*. Similarly, there is no prefix entry for *straat-* with the meaning 'very', as there is only one adjective of this type, *straat-arm* 'lit. street-poor, poverty-stricken'.[4]

However, some compound families such as those for *steen-* and *dood-* discussed above do have a number of members, and yet, it is hard to extend the relevant compound family. That is, we may assume a schema to characterize such a compound family, but the existence of such a schema should not necessarily imply that the pattern expressed is productive.

Recall that the use of schemas does not imply that the individual instantiations are not listed themselves. Schemas therefore have a secondary status, and depend for their existence on sets of complex words with a shared property.

What determines productivity in the sense of 'extensibility' of a pattern? Extensibility is determined by at least two factors: type frequency, and the occurrence of new forms. Type frequency will boost productivity, as stressed by Barðdal (2008). For instance, since there are many Dutch words with *reuze-* it will be easier to make a new compound beginning with this morpheme. Yet, type frequency in itself is not enough, as

shown by *dood-*: Dutch has a reasonable number of words of this type, yet it is hard to make a new word of this type because we do not come across new words with *dood-* as first constituent. This supports the view that the extension of classes of words with affixoids is in principle always based on analogical relationships (Karsdorp and Hüning 2012). These analogical relationships between similar words will be (re)activated every time a new word of the relevant type is coined (Abbot-Smith and Tomasello 2006). Hence, the abstract schema characterizing the set of words with a particular affixoid will be more readily available, the more it is used for new words, and this will boost its productivity. This issue is also treated in a number of articles by Hüning (Hüning 2009, 2010a, 2010b) and in Van Santen (2010).

In sum, constructional idioms that characterize sets of compounds may vary in their degree of productivity. This degree of productivity is determined by type frequency and the frequency of new coinings.

The problem broached here is the same that holds for word formation in general. How can we account for differences in degree of productivity between different derivational affixes and different types of compounding? Such gradual differences cannot be expressed in a formal, structural fashion. Therefore, we have to distinguish between the common structural properties of a set of complex words as expressed by constructional schemas, and the actual extensibility of the relevant class of complex words. Productivity is not a purely structural matter, but a multi-factorial phenomenon. The actual productivity of a morphological pattern is partially determined by type frequency, but also by functional factors such as the naming function, stylistic variation, register, style, fashion, the need for distinguishing oneself, etc. But we do not only need sociolinguistics and pragmatics; in order "to come to a full understanding of the challenging phenomenon of morphological productivity, a truly interdisciplinary data-driven research effort is required." (Baayen 2009: 917).

An example of regional variation is the productive use of the noun *kei-* as a prefixoid intensifier as used in *kei-hard* 'lit. rock-hard, hard as a rock'. The use of *kei-* can also be found in words like *kei-gaaf* 'very cool', *kei-jammer* 'very deplorable', *kei-gezellig* 'very cosy, *kei-komisch* 'very comical', and *kei-makkelijk* 'very easy'; the use of

these words is characteristic for the southeast region of the Netherlands and is used in particular by youngsters.

3.2. Reinterpretation of affixoids

In some compounds with an affixoid constituent this affixoid is reanalyzed as an adjective, as illustrated here for German and Dutch. This is a case of back formation: the first word is given the status of adjective by reinterpreting NN compounds as AN compounds. This type of reanalysis is also referred to as 'debonding' (Norde 2009). This reinterpretation is possible because the initial nouns function semantically as intensifiers. The relevant constructional idioms are illustrated in (12), with the Dutch nouns *kut* 'cunt', *reuze* 'giant', and *top* 'top', and the German nouns *Hammer* 'hammer' (in informal and substandard German), *Klasse* 'class', and *Spitze* 'top'; the reinterpretation as adjectives is given in (13):

(12) *Dutch*
      a.   kut-ding 'bad thing'
              kut-gevoel 'bad feeling'
              kut-smoes 'bad excuse'
      b.   reuze-dorst 'enormous thirst'
              reuze-vader 'great father'
              reuze-vriendelijk 'very kind'
      c.   top-conditie 'top-condition'
              top-prestatie 'top-achievement'
              top-productie 'top-production'

      German
      d.   das Hammer-gefühl 'the great feeling'
              das Hammer-teil 'the great thing'
              die Hammer-vorstellung 'the great performance'
      e.   das Klasse-fahrrad 'the marvelous bike'

die Klasse-vorstellung 'the marvelous performance'

das Klasse-weib 'the marvelous woman'

f.   die Spitzen-n-erzeugnis 'the top product'

die Spitze-n-leistung 'the top performance'

die Spitze-n-vorstellung 'the top performance'

(13)   *Dutch*:

reuze 'great'

kut 'bad'

top 'excellent'

German:

hammer 'great'

klasse 'excellent, marvelous'

spitze 'excellent, top'

In the case of Dutch, the linking element *-e* in *reuze* (the lexical morpheme is *reus* 'giant'), is preserved in the adjectival use of these words, which confirms the source of these adjectives, reinterpretation of a noun compound constituent with a bound meaning. However, this does not apply to German where the form *spitze*, the form of the word in isolation, rather than *spitzen* is used. Note that the adjectival reinterpretation is reflected by the spelling of the German examples, as only nouns are spelled with initial capital letters.

The resulting adjectives are mainly used in predicate position (or as adverbs); this may have to with the origin of these adjectives from nouns:

(14)   *Dutch*

a.   Dat vind ik erg reuze van jullie

That find I very giant of you

'I appreciate your doing very much'

b.   Die videokaart is niet erg top

That videocard is not very top

'That is not a very good videocard'

c.   Dit vind ik erg kut

    That find I very cunt

    'I find that very bad'

German

d.   Ich finde den Film total klasse.

    I find the film totally class.

    'I find that film very good.'

e.   Das Konzert war ja hammer.

    The concert was yes hammer.

    'The concert was fantastic.'

f.   Sein Auftritt war total spitze.

    His performance was totally top.

    'His performance was fantastic.'

Use as attributive adjectives is possible in informal varieties of Dutch. For instance, the word *kut*, originally a noun, may occur in attributive position when used as an adjective of depreciation, with the inflection typical for pronominal adjectives, and also with a superlative form (Google search, 06.03.2012). However, in German, words like *klasse* and *spitze* cannot be inflected as regular adjectives, which results in minimal pairs like (15h-i):

(15)   *Dutch*

a.   een kutt-e werk-houding

    a cunt-INFL work-attitude

    'a bad attitude towards work'

b.   kutt-e tekenfilms

    cunt-INFL cartoons

    'worthless cartoons'

c.   Frans is een kut-vak, maar wiskunde blijft het kut-st

French is a cunt-subject but math stays the cunt-est

'French is a nasty subject but math stays the nastiest'

d.   een heel topp-e dame

a very top-INFL lady

'an excellent lady'

e.   erg topp-e film

very top-INFL movie

'very good movie'

German

f.   eine klasse Frau (*compare* eine bös-e Frau 'an angry woman')

a class woman

'an excellent woman'

g.   ein klasse Hund (*compare* ein bös-er Hund 'an angry dog')

a class dog

'an excellent dog'

h.   ein spitz-er Bleistift

a sharp-INFL pencil

'a sharp pencil'

i.   ein spitze Bleistift

'an excellent pencil'

Reinterpretation of noun affixoids as adjectives is thus an indication that language users master the relevant productive constructional idioms.

Other examples of this type of reinterpretation are the Dutch nouns *doorsnee* 'lit. sectional plane, average', *luxe* 'lit. luxury, luxurious' and *standaard* 'lit. standard, common'. These three nouns all function as adjectives as well, as can be concluded from the fact that they can be modified by an adverb such as *erg* 'very', and are used as a predicate:

(16)   Dat klinkt erg doorsnee 'That sounds very average'

> Een erg luxe oplossing 'A very luxurious solution'
>
> Ik vind hem erg standaard 'I find him very common'

These three nouns are also used productively as the first part of NN compounds, with the meanings indicated above, and it is this productive use of a bound meaning that gave rise to their being used as adjectives. Note that the same meaning development took place in English for *standard*, and it may well be that the intensive contact between English and Dutch plays a role in boosting this parallel use of English *standard* and Dutch *standaard*.

Thus, this reinterpretation shows that language users grasp the compound subpatterns with these productive meanings that started as bound meanings for compound constituents.

3.3. Affixoids may lead to affixes

The change of an affixoid into an affix can be observed by comparing the Dutch noun *hoofd* 'head' and its German prefix counterpart *Haupt-* 'main'. In German, the word *Haupt* that is the historical equivalent of Dutch *hoofd* has been superseded by the word *Kopf* to denote the upper body part. In the text of Bach´s *Matthew Passion* (composed in 1727) we can still observe the use of *Haupt* as a free form in the choral *Oh Haupt voll Blut und Wunden* 'O head full of blood and wounds', but the productive use of *Haupt* as a free word is no longer possible in modern German, and has gradually disappeared. This is why in present-day grammars of German the morpheme *Haupt-* in words like *Haupt-bahnhof* 'central station' and *Haupt-sache* 'main issue' is qualified as a prefix. In other words, a prefixoid becomes a real prefix if the relevant word is no longer a free lexical item. The additional condition is that the prefixoid has a meaning that can be used productively. The loss of a word that is also listed as part of a complex word will not lead to an affix, but only lead to a cranberry morpheme (that is, a morpheme that only occurs as compound constituent) if that morpheme is not used for coining new words. This is the case for words like Dutch *bruide-gom*, German *Bräuti-gam* and English *bride-groom* (all with the same meaning), where *gom, gam* and *groom* are cranberry morphemes. Hence, we do not consider the bound morphemes *gom, gam* or *groom* suffixes.

The rise of affixes from affixoids requires that language users conclude to abstract patterns that characterizes sets of compounds with the same bound meaning for one of their constituents, and thus supports the use of constructional idioms for the proper characterization of affixoids.

3.4. Replication and borrowing

Replication is the phenomenon that a grammatical pattern is borrowed from one language into another. The recognition of affixoid patterns is confirmed by the observation that such patterns may be replicated by other languages. An example of this type of grammatical replication is the use of the word for 'top' in various European languages with the meaning 'of high quality'; it may well originate in the affixoid use of this word in English (Heine and Kuteva 2006):

(17)   English   top-
        Dutch   top-
        German   Spitzen-
        Swedish   topp-
        Finnish   huippu-

Heine and Kuteva (2006: 62) mention another example from Finnish, the use of the Finnish equivalent of English *key* with the meaning 'central, most important': *avain-asema* 'key position', and *avain-hahmo* 'key figure'. This pattern is also found in Dutch, as in *sleutelpositie* 'key position' and *sleutelbijdrage* 'key contribution'.

Affixoids may be borrowed and attached to base words of the borrowing language. An example is German *über.* This word is used as a preposition, an adverb, and an adjective. In addition, it is used as part of particle verbs, complex verbs, nouns, and adjectives:

(18)   a.   über den Rücken 'across the back'
        b.   über 80 Gäste 'more than 80 guests'

      c.   Es ist noch Kaffee über 'There is still coffee left'

      d.   über-nehmen 'to take over'

      e.   über-setzen 'to translate'

      f.   Über-kontrolle 'too much checking'

      g.   über-deutlich 'excessively clear'

Similar though not identical patterns of polysemy can be found for English *over* and Dutch *over*. This polysemy implies that there is a number of subentries for *über* in the German lexicon. Some of these meanings are tied to their occurrence in specific classes of complex words. For instance, the use of *über* with the meaning 'beyond the standard level, to an excessive measure' is tied to its occurrence in nouns and adjectives (18f-g). With nouns it may be used with the meaning 'extreme', with adjectives with the meaning 'excessively':

(19)   a.   Über-mensch 'super human being, super-man'

                Über-doktor 'super-doctor'

      b.   über-deutlich 'excessively clear'

                über-glücklich 'excessively happy'

                über-füllt 'over-crowded'

These uses of *über* are productive, and can be easily extended to new nouns or adjectives of German. Hence, these uses of *über* should be specified by means of constructional idioms of the form [*über*-A]$_A$ and [*über*-N]$_N$, with the specific meanings of *über* specified. This use of *über* is probably based on Nietzsche's word *Über-mensch* that became well known in European philosophy and literature, translated as *super-man* in English (as in Shaw's play *Men and supermen*). The relevant meaning of *über* has subsequently been extended to many new compounds. It has also been borrowed in English. The English examples below are from the NY Times Archives on the internet[5]:

(20)   a.   *with N*: über-burger, über-guru, über-diva, über-style, über-station wagon, über-close up, über-shopper, über-producer, über-caterer

      b.   *with A*: über-hip, über-talented, über-traditional, über-catchy,

Examples from British English are given in Renouf (2007):

(21)   a.   *with N*: über-pundit, über-talkshow, über-mogul
         b.   *with A:* über-hyped, über-media-saturated, über-waif

In Dutch one also finds lots of new words with *über* on the internet, as in *über-gewelddadig* 'extremely violent', *über-lekker* 'very nice', *über-lijp* 'very smart' (adjectives) and *über-professor* 'super-professor' and *uber-nicht* 'extremely gay person' (nouns). This use of *über* is taken over from English rather then directly from German (Forche 2011).

The borrowing of affixes through an intermediate language is a common phenomenon. The prefix *non-* is used in Dutch before adjectives and nouns, as in *non-figuratief* 'non-figurative' and *non-fictie* 'non-fiction'. This prefix *non-* is originally a Latinate negative word, but is probably borrowed as a prefix from English where it has become very productive, as in *non-food* and *non-issue*. Similarly, as suggested by Van der Sijs (1996: 113), the productive use of the Latin morpheme *super-* as a prefix in Dutch may have been influenced by the very productive use of this prefix in English.

The borrowing of German *über* in Dutch through English discussed above thus confirms the similar status of affixes and affixoids with respect to grammatical replication in the sense of Heine and Kuteva (2006). In sum, grammatical replication requires that some users of the replicating language have discovered a pattern in the source language, which makes it possible to transfer that pattern to the target language.

3.5. Emphatic coordination

For a proper characterization of Dutch we need to be able to refer to the class of initial morphemes of complex words that express an intensifier meaning (discussed as 'elative compounds in Hoeksema (2012)), since it is exactly this class of morphemes that can be repeated in order to express emphatic meaning (Booij 2010b: 59):

(22)   a.   *noun prefixoids*

bere- en bere-goed
bear- and bear-good
'very, very good'

bloed- en bloed-mooi
blood- and blood-beuatiful
'very, very beautiful'

dood- en dood-ziek
death- and death-ill
'very, very ill'

kei- en kei-leuk
boulder- and boulder-cool
'very, very cool'

pis- en pis-nijdig
piss- and piss-angry
'very, very angry'

poep- en poep-arm
shit- and shit-poor
'very, very poor'

reuze- en reuze-tevreden
giant- and giant-pleased
'very, very pleased'

steen- en steen-rijk
stone- and stone-rich

'very, very rich'

stok- en stok-kreupel
stick- and stick-crippled
'very, very crippled'

stront- en stront-lazerus
shit- and shit-drunk
'very, very drunk'

b.   *adjective prefixoids*
        dol- en dol-komisch
        mad- and mad-comical
         'very, very comical'

        stom- en stom-dronken
        dumb- and dumb-drunk
        'very, very drunk'

c.   *verb prefixoids*
        kots- en kots-beu
        puke- and puke-sick
         'very, very sick of'

        loei- en loei-heet
        thump- and thump-hot
        'very, very hot'

        piep- en piep-klein
        peep- and peep-small
        'very, very small'

The same kind of repetitive coordination with emphatic effect is possible with Dutch intensifiers that correspond to prepositions such as *door* 'through' and *in* 'in':

(23) a.   door- en door-nat
               through- and through-wet
               'wet through and through'
      b.   in- en in-triest
               in- and in-sad
               'very, very sad'

If we want to make a generalization as to which elements can occur in such repetitive coordination, we need to be able to refer to the class of compound-initial morphemes with intensifier meaning. The crucial condition for this form of repetition is a semantic one: whatever the lexical category or the degree of productivity, the first word must carry the meaning of intensification:

(24) $<[x \; en \; x \; A_i]_{Aj} \leftrightarrow [\text{very high degree of SEM}_i]_j> \approx$
        $<[x \; A_i]_{Aj} \leftrightarrow [\text{high degree of SEM}_i]_j>$

The symbol $\approx$ indicates that the two schemas are paradigmatically related. The second of these schemas is a general schema that dominates the various constructional idioms for complex words with a first constituent that carries an intensifier meaning. Generalization (24) presupposes the following constructional idiom, which is then instantiated by a large set of compound adjectives with various kinds of intensifying modifiers such as *door* in *doornat*:

(25) $<[x \; A_i]_{Aj} \qquad \leftrightarrow [\text{high degree of SEM}_i]_j>$
                              $|$
        $<[door \; [nat]_{Ai}]_{Aj} \leftrightarrow [\text{high degree of SEM}_i]_j>$

Emphatic repetition of thus type is also possible in Frisian that has a number of intensifier affixoids (Hoekstra 1998), such as:

(26) dea 'death'   dea-bang 'very afraid'
                           dea-gewoon 'very common'
      poer 'pure'   poer-lilk 'very ugly'
                           poer-verlegen 'very shy'
      troch 'through'   troch-kâld 'very cold'
                           troch-waarm 'very warm'

Like in Dutch, the intensifier affixoid can be repeated in Frisian by means of coordination with the conjunction *en* 'and', or the older form of this conjunction, *ende*:

(27) poer-ende-poer-swart 'pure-and-pure-black, very, very black'
      troch-ende-troch-kâld 'very, very cold'

The possibility of using the old form of the conjunction, *ende*, shows that this is not a regular form of coordination, but a special form of repetition for which a separate coordinative subschema has to be assumed, with *ende* as conjunction.

This pattern of emphatic repetition applies to all initial compound constituents with an intensifier meaning, including those instantiated by one of a few compounds only, such as those in (28), Dutch compounds in which the first constituent has the intensifier meaning in one compound only:

(28) boter- en boter-zacht 'butter- and butter-soft, very soft'
      pis- en pis-nijdig 'piss- and piss-angry, very angry'
      spin- en spin-nijdig 'spider- and spider-angry, very angry'
      ziels- en ziels-gelukkig 'soul- and soul-happy, very happy'

We cannot assume a constructional idiom for the intensifier nouns *boter-*, *pis-*, *spin-*, and *ziels-*, as they occur in these compounds only. Yet, they pattern with the other, more

productive intensifier prefixoids. This means that these compounds are instantiations of the general very schema in (25), although they do not instantiate a constructional idiom of their own.

4. Constructional idioms for bound lexemes

The concept 'constructional idiom at the word level' that was argued for in the preceding sections to be a useful concept for the characterization of affixoids, appears to be applicable to a number of related phenomena, cases in which words and phrases when used as compound constituents have specific properties: (i) complex words that only appear as parts of compounds, (ii) allomorphs of words as compound constituents, and (iii) phrasal constituents. These are discussed in the following subsections.

4.1. Complex words as bound elements

Complex words may exhibit the same behaviour as affixoids in the sense that their occurrence is bound to their being embedded in compounds. Consider the German deverbal noun *Mach-er* 'mak-er', discussed in detail in Joeres (1995). Joeres' observation is that the complex word -*macher* with the regular meaning 'maker' is very productive as part of compounds, whereas it has a lexicalized meaning when used as an autonomous lexeme, namely 'strong personality who achieves a lot'. Joeres (1995: 151) concluded that -*macher* can be qualified as a 'Halbsuffix', that is, an affixoid. Note, however, that that *macher* is not one morpheme, as was the case for the affixoids discussed above, but consists of two morphemes, the verbal stem *mach-* 'make' and the agentive suffix -*er*. Examples of this type of compounding in German are:

(29)   *with A as first constituent*:
        Fit-macher 'fit-maker'
        Krank-macher 'ill-maker'
        Wach-macher 'awake-maker'

with N as first constituent:

Baby-macher 'baby-maker'

Eis-macher 'ice-maker'

Programma-macher 'program-maker'

Different from what is at stake with the affixoids discussed in section 3, the meaning of *macher* in these words is completely regular: it has the meaning 'entity that causes or creates something'. This meaning, however, is only available within compounds, and not for the word *Macher* in isolation, which only has the lexicalized meaning mentioned above. In order to account for its bound use, we may assume the following constructional idioms for this class of compounds:

(30) $< [A_i \ [[mach]_V \ er]_{Nj} \ ]_{Nk} \quad \leftrightarrow \quad$ [who causes to be $SEM_i]_k >$

         $< [N_i \ [[mach]_V \ er]_{Nj} \ ]_{Nk} \quad \leftrightarrow \quad$ [who creates $SEM_i]_k >$

These are unifications of two independently motivated word formation schemas, $[NN]_N$ or $[AN]_N$ on the one hand, and $[V\text{-}er]_N$ on the other, with the V-slot lexically specified as *mach.* Note that the interpretation of *mach* 'make' depends on the lexical category of the first constituent: CAUSE with As, CREATE with Ns. These subschemas express the dependence of the use of *macher* with these meanings on its being embedded in a compound.

There are more cases in Dutch where complex words do not function as words in isolation, or only with a specific meaning (as was the case for German *Macher*). Examples are compounds headed by the deverbal noun *kun-de* 'skill, knowledge' which has acquired the meaning of 'science' when used as compound head:

(31)   bodem-kunde 'soil-science, geology'

         bouw-kunde 'build-science, architectural science'

         dier-kunde 'animal-science, zoology'

         taal-kunde 'language-science, linguistics'

These and other nouns ending in *-kunde* denote various sciences. Thus, a specific constructional idiom has developed in Dutch of the form

(32) $\langle[N/V]_i \; [kunde]_{Nj}]_{Nk} \leftrightarrow [science_j \; of \; SEM_i]_k$

Other examples of derived words that function in similar ways as building blocks of compounds are *-aard-ig, -vorm-ig, -zinn-ig*. These are denominal adjectives ending in the suffix *-ig* derived from the following nouns:

(33)   aard 'nature'
         vorm 'form'
         zin 'sense'

The adjectives *aardig* 'nice' and *zinnig* 'sensible' do occur as separate words, but not with the meanings that they have in compounds; the word *vormig* only occurs as the head of adjectival compounds:

(34)   a.   boos-aard-ig 'angry-nature-ed, malignant'
                eigen-aard-ig 'own-nature-ed, peculiar'
         b.   blad-vorm-ig 'leaf-shap-ed'
                cirkel-vorm-ig 'circle-shap-ed'
         c.   diep-zinn-ig 'deep-sense-ed, profound'
                eigen-zinn-ig 'self-willed'

The bound use of these complex adjectives can be characterized by constructional idioms of the following type:

(35) $\langle[A_i \; [[aard]_{Nj} \; ig]_A]_{Ak} \leftrightarrow [having \; property_j \; SEM_i]_k\rangle$
         $\langle[N_i \; [[vorm]_{Nj} \; ig]_A]_{Ak} \leftrightarrow [having \; form_j \; SEM_i]_k\rangle$
         $\langle[A_i \; [[zinn]_{Nj} \; ig]_A]_{Ak} \leftrightarrow [having \; mental \; disposition \; with \; property \; SEM_i \;]_k\rangle$

The formal structures of these complex adjectives are unifications of independently motivated morphological structures, AA compounds and complex adjectives of the form [N-*ig*]$_A$. Yet, we should specify them as part of the hierarchical lexicon, as the denominal adjectives by themselves either do not exist at all, or have a different meaning when used as independent words.

The constituent -*aardig* may have lost its internal structure for language users, because *aardig* in isolation means 'nice'. This lack of transparency can also be observed in the use of the denominal adjective -*matig* derived from the noun *maat* 'measure'. The word *matig* in isolation means 'moderate'. As the following examples illustrate, it functions to turn a noun into its corresponding adjective, in which the meaning of *maat* plays no role:

(36)   beroep 'profession'   beroeps-matig 'professional'
        dwang 'compulsion'   dwang-matig 'compulsory'
        gevoel 'instinct'   gevoels-matig 'instinctive'
        kunst 'art'   kunst-matig 'artificial'
        recht 'law'   recht-matig 'legal'
        wet 'law'   wet-matig 'regular, legal'

The same observation applies to the German equivalent of -*aardig*, the bound constituent -*artig*, where the constituent *Art* 'character' is probably no longer recognized, and -*mäßig*, the equivalent of -*matig*, where the meaning of *Maß* 'measure' is not relevant anymore:

(37)   bös-artig 'bad-natured'
        gut-artig 'good-natured'
        groß-artig 'great'
        gefühls-mäßig 'instinctive'
        recht-mäßig 'legal'
        gesetz-mäßig 'regular, legal'

The complex Dutch noun *gang-er* 'goer' is a bound word, only to be used as constituent of compounds, such as:

(38)   bedevaart-gang-er 'pilgrimage-go-er'
        kerk-gang-er 'church-go-er'
        Mekka-gang-er 'Mekka-go-er'

The word *ganger* cannot be used in isolation. According to the *Woordenboek der Nederlandsche Taal*, it used to be a word of Dutch that could be used as a free word with the meaning 'goer', but this is no longer possible. The class of compounds with *-ganger* can easily be extended, as the following examples illustrate. In the modifier slot geographical names can be inserted, but also other nouns that denote a destination:

(39)   Amsterdam-gang-er 'Amsterdam-go-er'
        Berlijn-gang-er 'Berlin-go-er'
        Heiloo-gang-er 'Heiloo-go-er'
        Parijs-gang-er 'Paris-go-er'
        congres-gang-er 'conference-go-er'
        museum-gang-er 'museum-go-er'
        zee-gang-er 'see-go-er'

Hence, the following constructional idiom must be assumed for Dutch:

(40)   <[N$_i$ [gang-er]$_{Nj}$]$_{Nk}$ ↔ [goer$_j$ to SEM$_i$]$_k$>

Note that unlike English *goer*, the constituent *ganger* is not derived from the present-day verbal stem *ga* 'go'. The noun *gang* 'going' does exist, but *gang* in *ganger* is an old infinitive. So even though the suffix *-er* may be recognized as these words are agent nouns, there is no motivation for a category label for *gang*. Hence, *ganger* is only formally complex, still formally being recognizable as an agent noun.

4.2. Allomorphy

Constructional idioms for subsets of compounds enable us to express specific properties of words when embedded in compounds which are not restricted to one lexicalized compound, and can be used to coin new compounds. This special property can also be a phonological property: compounds may require a particular allomorph of a word used as compound constituent.

As observed in Booij (2010b: Chapter 3), the Dutch noun *eer* 'honour' has an allomorph *ere*. The short form is the effect of a historical process of schwa apocope. The long form is still used in fixed expressions such as *Ere wie ere toekomt* 'Honour to whom deserves honour', and in old religious songs. Both the short and the long for occur in the modifier slot of NN compounds:

(41) a. eer-betoon 'honour-show, mark of honour'
          eer-bewijs 'honour-proof, mark of honour'
          eer-gevoel 'honour-sense, sense of honour'
      b. ere-divisie 'honour-division, premier league'
          ere-dienst 'honour-service, religious service'
          ere-boog 'honour-arch, triumphal arch'

However, it is only the long form that is used if it carries the meaning ´honorary´, and that can be used for coining new compounds with the meaning 'honorary x'. In that sense, the noun *ere* has become a prefixoid, and this meaning of the allomorph *ere* has to be specified in a constructional idiom:

(42) ere-lid / *eer-lid 'honour-member, honorary member'
      ere-voorzitter / *eer-voorzitter 'honour-president, honorary president'

The rise of this constructional idiom is another example of how the word formation possibilities of Dutch are extended, through the availability of a special bound morpheme for the expression of the notion 'honorary'.

4.3. Phrases as bound constituents of compounds

The use of linguistic constructs with an idiosyncratic meaning when embedded in compounds is not restricted to the mono-morphemic constituents discussed in section 4.1. Phrases can be used in the same way. An example of the compound-bound use of a phrase is *huis-tuin-en-keuken* 'house-garden-and-kitchen' with the meaning 'run of the mill, ordinary', as in:

(43)   huis-tuin-en-keuken-adverteerders 'ordinary advertisers´
        huis-tuin-en-keuken-onderwerpen 'ordinary topics'
        huis-tuin-en-keuken-chirurgie 'ordinary surgery'
        huis-tuin-en-keuken-tandarts 'ordinary dentist'
        huis-tuin-en-keuken-ongevallen 'ordinary accidents'
        huis-tuin-en-keuken-klussen 'ordinary chores'

The use of this phrase as the modifier constituent of compounds is extremely productive. In fact, the English gloss', the phrase *run of the mill* exhibits the same behaviour. Originally it meant to refer to products that come directly from the mill in an ungraded state, and may contain imperfections. Its use has been extended, and this NP functions as a modifier with the meaning 'ordinary'. In German, the phrasal word constituent *(Feld,)Wald-und-Wiesen* is used for this purpose.

This way of using phrases can be accounted for by making use of constructional idioms. The phrase *huis-tuin-en-keuken* defines an extensive word family of compounds, and this pattern can be extended easily. In this case, the term 'affixoid' would not be adequate for the simple reason that this constituent is complex, and even phrasal in nature.

5. Conclusions

The expressive power of the word formation system of Dutch, in particular its compounding system, is enhanced continuously through the emergence of new

constructional idioms. These are subschemas for compounding that are partially lexically fixed, with specific semantic properties. These constructional idioms enable the language user to encode a larger variety of meanings by means of compounds. In addition, they are the source of new affixes, as illustrated by the German prefix *Haupt-*.

These phenomena lend support to a conception of the lexicon as defended in Construction Morphology: a hierarchical lexicon with different layers of abstraction at which the word formation possibilities of a language are specified. This model of the lexicon provides an adequate framework for representing affixoids and other cases of bound meanings for words and phrases, and bound allomorphy for words, embedded in compounds. In sum, subschemas in a hierarchical lexicon provide a structural interpretation of affixoids that makes a special theoretical status of affixoids unnecessary.

Notes

1. This morpheme is also used with verbal base nouns, as in *bügel-frei* 'lit. iron-free, no iron', where *-frei* has the related meaning 'without the necessity of'.

2. The relevance of the notion 'constructional idiom at the word level' for the proper characterization of the affixoid behaviour of words has also been argued to be relevant for languages such as Greek (Ralli et al. 2008), French (Van Goethem 2008, 2010), Mandarin Chinese (Arcodia 2011) and Japanese (Namiki 2010). A constructional idiom analysis of some German affixoids (*-stück*, *-fall* and *-werk*) is defended in Zifonun (2012).

3. The adjective *steen-rood* 'red as stone' is an instantiation of the class of NA compounds with a comparative meaning, also exemplified by compounds like *sneeuw-wit* 'snow-white, white as snow'.

4. *Van Dale's* Dutch French dictionary explicitly mentions a prefix *straat-*, but this pertains to the literal meaning of *straat* in compounds. This shows that the use of the notion 'prefix' in this dictionary is rather erratic.

5. This English prefixoid *über* has various other spelling forms such as *uber*, *ueber* and *Uber* (Forche 2011).

References

Abbot-Smith, Kisten and Michael Tomasello. 2006. Exemplar-learning and schematization in a usage-based account of syntactic acquisition. *The Linguistic Review* 23: 275-290.

Arcodia, Giorgio F. 2011. A *Construction Morphology* account of derivation in Mandarin Chinese. *Morphology* 21: 89-130.

Ascoop, Kristin & Torsten Leuschner. 2006. Affixoidhungrig? Skitbra! Comparing affixoids in Swedish and German. *Sprachtypologie und Universalienforschung* 59: 241-252.

Baayen, R. Harald. 2009. Corpus linguistics in morphology: morphological productivity. In Anke Lüdeling and Merja Kytö (eds.), *Corpus Linguistics. An International Handbook*, 900-917. Berlin / New York: De Gruyter.

Barðdal, Jóhanna. 2008. *Productivity. Evidence from Case and Argument Structure in Icelandic.* Amsterdam / Philadelphia: Benjamins.

Booij, Geert. 2005. Compounding and derivation: evidence for Construction Morphology. In Wolfgang U. Dressler, Dieter Kastovsky, Oskar E. Pfeiffer & Franz Rainer (eds.), *Morphology and its Demarcations*, 109-132. Amsterdam / Philadelphia: John Benjamins.

Booij, Geert. 2010a. Compound construction: schemas or analogy? A Construction Morphology perspective. In Sergio Scalise & Irene Vogel (eds.), *Cross-disciplinary Issues in Compounding*, 93-108. Amsterdam / Philadelphia: John Benjamins.

Booij, Geert. 2010b. *Construction morphology*. Oxford: Oxford University Press.

Decroos, Nancy and Torsten Leuschner. 2008. Wortbildung zwischen System und Norm: Affixoiden im Deutschen und im Niederländischen. *Sprachwissenschaft* 33: 1-34.

Elsen, Hilke. 2009. Affixoide: Nur was benannt wird, kann auch verstanden werden. *Deutsche Sprache* 04/2009: 316-333.

Forche, Christian R. 2011. The über-phenomenon. Überlegungen zur Entlehnung von über- ins Englische. Berlin: Paper, M.A. Program Sprachen Europas, Freie Universität.

Heine, Bernd and Tania Kuteva. 2006. *The Changing Languages of Europe.* Oxford: Oxford University Press.

Hoeksema, Jack 2012. Elative compounds in Dutch: Properties and developments. In Guido Oebel (ed.), *Intensivierungskonzepte bei Adjektiven und Adverbien im Sprachvergleich / Cross-linguistic Comparison of Intensified Adjectives and Adverbs,* 97-142. Hamburg: Verlag dr. Kovač.

Hoekstra, Jarich. 1998. *Fryske wurdfoarming.* Ljouwert: Fryske Akademy.

Hüning, Matthias. 2009. Semantic niches and analogy in word formation. *Languages in Contrast* 9: 183-201.

Hüning, Matthias. 2010a. Productiviteit in taal en taalgebruik. Overwegingen vanuit een diachroon perspectief. *Voortgang. Jaarboek voor de Neerlandistiek* 28: 51-69.

Hüning, Matthias. 2010b. Wortbildung im niederländisch-deutschen Sprachvergleich. In Lutz Gunkel and Gisela Zifonun (ed.s), *Deutsch im Sprachvergleich. Grammatische Kontraste und Konvergenzen*, 161-186. Berlin: De Gruyter.

Hüning, Matthias and Barbara Schlücker. 2010. Konvergenz und Divergenz in der Wortbildung - Komposition im Niederländischen und im Deutschen. In Antje Dammel, Sebastian Kürschner, and Damaris Nübling (eds.), *Kontrastive Germanistische Linguistik*, 783-825. Hildesheim etc.: Georg Olms Verlag.

Jackendoff, Ray. 2002. *Foundations of Language.* Oxford: Oxford University Press.

Joeres, Rolf. 1995. *Wortbildungen mit -macher im Althochdeutschen, Mittelhochdeutschen und Neuhochdeutschen*. Heidelberg: Universitätsverlag C. Winter.

Karsdorp, Folgert and Matthias Hüning. 2012. De relatie tussen schema's en analogische verbindingen. *Nederlandse Taalkunde* 17: 261-67.

Leuschner, Torsten. 2010. Ausnahmepianist fettgeschreckt - inbleich! Deutsche, niederländische und schwedische präfixoide im Spanningsfeld von Genealogie, Kreativität und Norm. In Antje Dammel, Sebastian Kürschner & Damaris Nübling (eds.), *Kontrastive Germanische Linguistik* Vol. 2, 863-92. Hildesheim etc: Georg Olms Verlag.

Meesters, Gert. 2004. *Marginale morfologie in het Nederlands. Paradigmatische samenstellingen, neo-klassieke composita en splintercomposita*. Gent: Koninklijke Academie voor Nederlandse Taal- en Letterkunde.

Namiki, Takayasu. 2010. Morphological variation in Japanese compounds: The case of *hoodai* and the notion of "compound-specific meaning". *Lingua* 120: 2367-2387.

Norde, Muriel. 2009. *Degrammaticalization*. Oxford: Oxford University Press.

Ralli, Angela, Geert Booij, Sergio Scalise, and Athanasios Karasimos (eds.) 2008. *Morphology and dialectology. On-line Proceedings of the Sixth Mediterranean Morphology Meeting (MMM 6), Ithaca, 27-30 September 2007*. Patras: University of Patras.

Renouf, Antoinette. 2007. Tracing lexical productivity and creativity in the British media. In Judith Munat (ed.), *Lexical Creativity, Texts and Contexts*, 61-88. Amsterdam / Philadelphia: Benjamins.

Schlücker, Barbara and Ingo Plag. 2011. Compound or phrase? Analogy in naming. *Lingua* 121: 1539-1551.

Schmidt, Günter Dietrich. 1987. Das Affixoid. Zur Notwendigkeit und Brauchbarkeit eines beliebten Zwischenbegriffs der Wortbildung. In Rainer Wimmer and Gisela Zifonun (eds.), *Deutsche Lehnwortbildung: Beiträge zur Erforschung der Wortbildung mit entlehnten WB-Einheiten im Deutschen*, 53-101. Tübingen: Narr.

Schreuder, Rob and R. Harald Baayen. 1997. How complex simplex words can be. *Journal of Memory and Language* 37: 118-139.

Stevens, Christopher. M. 2000. The derivational suffixes and suffixoids of Old Saxon: A panchronic approach to a linguistic category. *American Journal of Germanic Linguistics and Literatures* 12: 53-79.

Stevens, Christopher M. 2005. Revisiting the affixoid debate. On the grammaticalization of the word. In Torsten Leuschner, Tanja Mortelmans and Sarah de Groodt (eds.), *Grammatikalisierung im Deutschen*, 71-83. Berlin / New York: Mouton de Gruyter.

Van der Sijs, Nicoline. 1996. *Leenwoordenboek. De invloed van andere talen op het Nederlands*. Den Haag: SDU Uitgeverij.

Van Goethem, Kristel. 2008. *Oud-leerling* versus *ancien élève*. A comparative study of adjectives grammaticalizing into prefixes in Dutch and French. *Morphology* 18: 27-49.

Van Goethem, Kristel. 2010. The French construction *nouveau* + past participle revisited: Arguments in favour of a prefixoid analysis of *nouveau*. *Folia Linguistica* 44: 163-178.

Van Santen, Ariane. 2010. Betekenis: de sturende kracht van woordvorming. *Voortgang. Jaarboek voor de Neerlandistiek* 28: 7-27.

Wills, Wolfram. 1986. *Wortbildungstendenzen in der deutschen Gegenwartssprache*. Tübingen: Gunter Narr.

Zifonun, Gisela. 2012. Komposition (oder Halbaffigierung) zum Ausdruck von Nominalaspect: *Schmuckstück*, *Glücksfall* und *Zuckerwerk*. In Livio Gaeta and Barbara Schlücker (eds.), *Das Deutsche als kompositionsfreudige Sprache. Strukturelle Eigenschaften und systembezogene Aspekte*, 101-34. Berlin: De Gruyter.