

CHAPTER FOUR

THE RISE AND FALL
OF WORD-FORMATION PATTERNS:
A HISTORICAL COGNITIVE-LINGUISTIC
APPROACH TO WORD-FORMATION CHANGE¹

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1. Word-formation, construal and productivity

Why can we enjoy the *warmth* of a sunny beach but not complain about the **coldth* of last year's winter? Why can love at first be *awesome*, then turn out *gruesome*, leaving us *lonesome*—but no good advice that we get in this most unfortunate situation will ever turn out **helpsome*? Of course, this has to do with the morphological productivity of the respective word formation patterns.

The notion of morphological productivity has been subject to considerable debate. Mayerthaler (1981: 124) has even stated that “productivity” is one of the least clear concepts in linguistics. While there is a broad consensus as to the basic definition that “morphological productivity” refers to the ability of a morphological pattern to be extended to new cases (cf. Booij 2005: 68), it is far from clear what exactly this definition entails. For example, it is a matter of debate whether productivity has to be considered a gradual phenomenon (cf. Baayen 2009: 911) and when exactly a pattern can be seen as productive. Can, for instance, the attestation of coinages such as *coolth* (cf. Rosenbach 2007) or *greenth* (Hohenhaus 2005: 369) be considered as evidence that *-th* suffixation in English is still productive, albeit to a very small degree—or

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must these neologisms rather be considered “playful formations” (Bauer 1983: 264; Bauer 2001: 57) that draw their expressivity exactly from the fact that they violate word formation rules?² Furthermore, it depends on the respective theoretical framework whether productivity is conceived of as a synchronic or as a diachronic notion (cf. Rainer 1987: 193). Marchand (1955) argues that “word formation. . . should only deal with items that are synchronically analyzable as morphologically complex, that is, motivated” (Kastovsky 1986: 587). A theoretical framework that conceptualises language as a complex adaptive system (CAS, cf. Steels 2000; Beckner et al. 2009) and therefore “intrinsically diachronic” in nature (Frank and Gontier 2010: 48), by contrast, would certainly hold that morphological productivity can only be understood in a diachronic perspective.

This paper outlines a Cognitive-Linguistic and usage-based approach towards word-formation change with the example of German *ung-*derivation. This word-formation pattern is a particularly interesting object of study for a number of reasons. First, it has been studied both synchronically and diachronically in a variety of different frameworks (e.g. Generative Grammar: Esau 1973, Römer 1987; Decompositional Semantics: Ehrich and Rapp 2000, Ehrich 2002; Discourse Representation Theory: Roßdeutscher 2010, Roßdeutscher and Kamp 2010; Cognitive Linguistics: Hartmann 2012, Hartmann to appear). Second, it provides a prime example for a word-formation pattern that has undergone a significant loss in morphological productivity (cf. Demske 2000). Third, its diachronic development can be tracked rather easily with the help of electronic corpora. Last but not least, the decline of morphological productivity and the emergence of constraints affecting this word-formation pattern arguably offer valuable insights as to how language is organised and structured in the mind.

Importantly, the construal approach to word-formation change elaborated on in this paper does not only pertain to this specific pattern but is applicable cross-linguistically to a broad variety of word-formation patterns. In the remainder of this section, the basic notions will be explained mostly with the help of English word-formation patterns. First I will discuss the notion of word-formation change, which can be conceived of as change in word-formation constraints and in morphological productivity (1.1). Then I will turn to the notion of construal, which is

² A similar case in point is German *unkaputtbar*, lit. “un-broken-able,” which violates the rule that adjectives in *-bar* can only be derived from verbs. While *unkaputtbar* is now established in German colloquial language (cf. e.g. Hohenhaus 2005: 369), there have been no further derivations of adjectives in *-bar* from other adjectives, indicating that this pattern is not productive.

often used in Cognitive Linguistics but, according to Croft (2012: 13), seldom properly defined (1.2). The next section is dedicated to an empirical study of the German word formation pattern *V-ung* (e.g. *Landung* “landing,” *Bildung* “education,” *Wohnung* “flat,” etc.) and its diachronic development. It will be shown that the decrease in morphological productivity is tightly connected to changes in the schematic construal of the word-formation pattern’s semantic/functional content (2.1) as well as to an increase in lexical-categorial prototypicality, i.e. in the word-formation pattern’s “nouniness” (Ross 1973; Sasse 2001) (2.2). In conclusion, I will outline the possibilities and advantages of accounting for word-formation change in terms of construal and conceptualisation (3).

1.1. What is word-formation change?

According to Scherer (2005, 2006), word-formation change can be defined as change of word-formation constraints, which is mirrored in morphological productivity. For example, the English suffix *-ment*, as in *abandonment*, *disappointment*, “seems to have been productive between the mid-sixteenth century and the mid-nineteenth century” (Bauer 2001: 181). Strikingly, the first peak of productivity seems to co-occur with a (short-lived) relaxation of word-formation constraints in the second half of the 16th century: for a short period of time, the word-formation pattern could not only take nominal, but occasionally also adjectival bases (OED;³ e.g. *foolishment*, *jolliment*, cf. also Hilpert 2011: 72). The prefix *un-* experienced, according to the OED account, a strong increase in word-formation constraints: while it could be “freely applied with a purely negative force to several parts of speech” in Old English, only a few of those coinages survived in Middle English. In the case of *un-* expressing reversal or deprivation, by contrast, about half of the Old English formations survived. It would be interesting to study this pattern in more detail, especially considering recent coinages such as *unfriend* that were previously ruled out due to semantic and/or pragmatic constraints (cf. Schmid 2011: 118). In the case of the above-mentioned *th-* suffix, most word-formation products are “frozen into lexicalisations” (Čermák 2002: 19) by now; some of them, such as *warmth*, are still analyzable, others, such as *strength*, let alone *health*, do not reveal their respective bases as easily. Due to their (apparent) lack of productivity on a synchronic level, patterns such as *ADJ-th* have been treated as “lexically conditioned” and

³ Oxford English Dictionary: <<http://www.oed.com>> [Accessed November 2012]

have been accounted for in terms of “redundancy rules” in previous accounts of word-formation (cf. e.g. Plag 2003: 36). That is to say, “we are not dealing with a rule that can be used to form new words, but with a rule that simply generalises over the structure of a set of existing complex words” (ibid.).

In the remainder of this paper I will outline a theory of word-formation that renders such distinctions superfluous. While I will stick to the notion of word-formation rule (WFR), which some scholars have abandoned for various reasons (cf. Plag 2003: 38), I will argue that word-formation constraints (and hence, WFRs) emerge from actual language use, which in turn is determined by a variety of interrelated language-internal as well as language-external factors (cf. Baayen 2009). Consequently, morphological productivity is not only a matter of degree—as is already widely held especially in Cognitive-Linguistic accounts (e.g. Taylor 2012: 174)—but also more dynamic than is usually recognised.

One case in point demonstrating the highly dynamic nature of productivity patterns is Taylor’s (2012: 114-119) study of the compound pattern *X-minded*, which enjoyed a short peak of popularity in the middle of the 20th century. Pilch (1985: 428) mentions the paradigm of agent nouns in *-nik* (e.g. *beatnik*, *peacenik*) that “arose after the *sputnik* scare of 1957” but can hardly be considered productive any more nowadays. Similarly, the suffix *-ish* has become highly popular in colloquial language use in recent years (cf. e.g. Theijssen et al. 2010)—time will tell if it proves more persistent than the boom of *X-minded* or *X-nik* coinages.

Independent of how exactly the notion of morphological productivity is fleshed out in detail, the question arises how productivity can be measured appropriately. Baayen (2009: 901f) distinguishes between

- a) realised productivity ($P=V(C,N)$), with $V(C,N)$ representing the type count of the members of a morphological category C in a corpus with N tokens;
- b) expanding productivity ($P=V(1,C,N) / V(1,N)$): $V(1,C,N)$ stands for the hapax legomena (i.e. the words occurring only once in the corpus) belonging to the morphological category C ; $V(1,N)$ refers to the total number of hapax legomena in the corpus (irrespective of their respective morphological category);
- c) potential productivity ($P=V(1,C,N) / N(C)$), with $N(C)$ referring to the number of tokens belonging to the morphological category in question.

We will be mainly interested in the potential productivity of word-formation patterns (labelled “morphological productivity in the narrow sense” in Baayen’s earlier work, e.g. Baayen 1992; cf. also Scherer 2006), as it measures the relation of nonce-formations to established derivatives

(and, hence, the potential of a word-formation pattern to coin new words) most comprehensively.

As the example of English *un-* formations demonstrates, diachronic change affects both the “input” and the “output” of the word-formation pattern (cf. also Scherer 2006). Word-formation constraints determine which words or classes of words can serve as “input” for the respective morphological pattern. More specifically, Schmid (2011) distinguishes the following types of constraints:

1. Pragmatic and cognitive restrictions on productivity

- Existence of referents (e.g. **champagne heater*, Kastovsky 1982: 159)
- Exclusion of the naming of the self-evident (e.g. **eyed man*)
- “Nameability” (Ross 1973, qt. by Bauer 1983: 86: no need for a denominal verb meaning “grasp NOUN in the left hand and shake vigorously while standing on the right foot in a 2 ½ gallon galvanized pail of corn-meal-mush”)

2. General structural restrictions on productivity

- Blocking by synonym and homonym (e.g. **stealer* because of *thief*, **liver* “someone who lives” because of *liver* “organ”)
- Etymological restrictions (e.g. *-ity*, *cy* and *-ize*, which only allow for bases of Roman origin)
- Haplogy (adj. *funny* > adv. *funnily*, but adj. *elderly* > adv. **elderlyly*)

3. Word formation model-specific restrictions on productivity

- Phonological restrictions
- Morphological restrictions
- Semantic restrictions (from Schmid 2011: 115ff)

However, Schmid adds that the first four types of constraints can be left out of consideration as they are non-systematic and largely pragmatic in nature. In the following sections, we will mainly be concerned with pattern-specific word-formation restrictions, i.e. phonological, morphological and semantic constraints. Above all, we will be interested in the semantic constraints emerging from the availability of construal options, which is subject to diachronic change (see Sections 2.2 and 3).

We have already seen that, in some cases, word-formation products are not recognizable as such at a synchronic level. This is the result of lexicalisation, which is a notion almost as heavily debated as the term “productivity.” As Hohenhaus (2005: 355) points out, “‘lexicalization’ has to be regarded as the cover term for a range of phenomena.” In its prevalent use, however, lexicalisation refers to the “phenomenon that complex words and expressions are often not identical with the sum of their parts” (Sauer 2004: 1626). A more concise definition is offered by Brinton and Traugott (2005: 96):

Lexicalization is the change whereby in certain linguistic contexts speakers use a syntactic construction or word formation as a new contentful form with formal and semantic properties that are not completely derivable or predictable from the constituents of the construction or the word formation pattern.

Note that Brinton and Traugott “conceive of lexicalization as both a change in form and in meaning” (Trousdale 2008: 164). On this view, a compound such as *wheelchair* would not be considered an example of lexicalisation proper, but rather be treated as a case of institutionalisation (cf. Bauer and Huddleston 2002: 1629; Trousdale 2008: 163). For the purposes of this paper, however, this distinction is not necessary. Instead, I will use “lexicalisation” as referring to the assumption of idiosyncratic meaning elements, which is, however, often accompanied by changes in formal properties.

Lexicalisation can affect all linguistic levels (cf. Sauer 2004: 1628f) and has to be considered a gradual phenomenon (cf. Lipka 1977: 162). This again becomes clear with the example of *-th* suffixation: for *warmth–strength–health*, we can assume a cline of (synchronic) analyzability. As will be shown in our case study in Section 2, lexicalisation can have a strong impact on word-formation and word-formation change in that it can lead to the reanalysis of new meanings of morphological patterns, which then become productive; it can even render morphological patterns opaque (which is probably also the case with English *-th*).

Concerning the interconnection of lexicalisation, word-formation constraints and morphological productivity, we can assume the following chain of events:

lexicalisation > ... > emergence or loss of constraints > change in productivity

The notion of construal, which is the topic of the next section, provides the “missing link” in this chain of events, labelled “...” here.

1.2. Construal

According to Croft (2012: 13), the notion of construal refers to “a semantic structure for an experience.” While some scholars, such as Croft (*ibid.*), use the terms “construal” and “conceptualisation” interchangeably, others—most prominently Langacker (1987a, 1991a, 2008a)—make a distinction between these terms: “Simply stated, conceptualisation is equated with meaning and construal is the ability humans have to view a

scene in alternate ways (for instance, from different perspectives, or with focus on different elements)” (Matlock 2004: 224). Langacker (1991b: ix) points out that “an expression’s meaning consists of more than just conceptual content—equally important to linguistic semantics is how that content is shaped and construed.”

More specifically, the notion of construal describes the fact that when conceptualising a scene for purposes of communication, speakers structure the scene in a specific manner and from a certain perspective (cf. Pleyer 2012a: 47). They foreground or make salient certain aspects of a situation while backgrounding others (cf. also Verhagen 2007). Importantly, linguistic construal operations are seen as “instantiations of basic cognitive capacities” (Pleyer 2012b: 289), which is in line with the Cognitive-Linguistic view that language is inextricably connected to domain-general principles of human cognition.

The notion of construal can also be connected with influential theories that have been put forward in Cognitive Linguistics to capture the interconnection between language, thought and culture, e.g. Lakoff’s (1987) theory of Idealised Cognitive Models (ICMs), Johnson’s (1987) notion of Image Schemas and Fauconnier’s (1994) Mental Spaces theory (complemented by his work on conceptual integration, e.g. Fauconnier and Turner 2002). In such a framework, word-formation patterns (most prototypically, of course, word-formation affixes) can be considered carrying conceptual content. Even patterns whose sole function seems, at first glance, to be to syntactically transpose words from one word class to another can, on closer inspection, be found to evoke a certain schematic construal (cf. Ungerer 2007). With Kemmer (2003: 78), schemas can be understood as “essentially routinized, or cognitively entrenched, patterns of experience.” We can assume, then, that word-formation patterns have an image-schematic conceptual basis, i.e. they can be seen as construal patterns.

The notions elaborated on in Section 1.1 now imply that word-formation products can diverge from the default construal of their respective word-formation patterns through lexicalisation. This in turn can affect the word-formation pattern’s default construal, resulting in the emergence or loss of (semantic) word-formation constraints. These in turn are reflected by changes in morphological productivity:

lexicalisation > construal change > emergence / loss of constraints (i.e. changes in the availability of construal options) > change in productivity

2. A case study: German *ung*-nominalisation

Nominalisation in the suffix *-ung* is one of the most productive word-formation patterns in German (cf. e.g. Shin 2001: 299)—at least in terms of realised productivity (cf. Section 1.1). Diachronically, however, this pattern has experienced a significant decrease in potential productivity (cf. Demske 2000). According to Demske (2000, 2002), this can be attributed to the emergence of semantic input constraints: certain verb classes (e.g. state verbs, durative verbs, inchoative verbs) cannot function as base verbs of *ung*-nominals any more (e.g. **Tanzung* “dancing,” **Erblühung* “blossoming_{INCH}”). Some coinages that were felicitous in the Middle High German (MHG, 1050-1350) and Early New High German periods (ENHG, 1350-1650) are ungrammatical today, e.g. *swîgunge* “silence,” *murmelunge* “muttering.” Relatively new verbs such as *hupen* “(to) honk,” which only emerged in the 18th/19th century (cf. Kluge 2002: 427), or *googeln* “(to) google” are also not eligible for this word-formation pattern.

The following two sections address the question how these constraints came about and how they can be accounted for in the Cognitive-Linguistic framework outlined in the previous sections.

2.1. Reification and perspectivation

From a Cognitive-Linguistic point of view, we could go so far as to say that all basic functions of language can be subsumed under the notions of “categorisation” and “perspectivation.”⁴ Note that these terms can be paralleled with the notions of conceptualisation and construal in Langacker’s sense as outlined in Section 1.2: “Categorisation,” in its most basic sense, refers to the fact that the world is not perceived as “an unstructured total set of equiprobable co-occurring attributes” (Rosch 1978: 29), but rather as possessing high correlational structure. “Perspectivation,” in a general sense, can refer to our view on the perceived world (cf. e.g. Verhagen 2007), i.e. to our specific construal of the world. Intriguingly, the diachronic development of German *ung*-nominalisation can also be accounted for in terms of perspectivation and categorisation.

First, let us consider how the perspective (again, in a very general sense, i.e. not restricted to a visual and/or spatial meaning) that speakers and hearers take on both the word-formation products of the morphological

⁴ Cf. e.g. Geeraerts and Cuyckens (2007: 5), who define language as a “structured set of meaningful categories” and emphasize the perspectival nature of linguistic meaning.

pattern in question and on the pattern itself can influence its image-schematic construal. The best starting point for this discussion is perhaps the English progressive, whose similarities to ENHG word-formation products in *-ung* have already been pointed out by Demske (1999). Langacker (2008a: 68), Verspoor (1996: 437) and Verhagen (2007: 53) have described the English progressive in perspectival terms: “the position from which the situation is viewed is contained in the ongoing process itself (so that any boundaries are not ‘in view’)” (Verhagen 2007: 53). In Verspoor’s (1996: 438) terms, the event is viewed from a “close-by” perspective. Support for these theoretical considerations comes from recent psycholinguistic experiments: Matlock et al. (2012) report that when asked *what was happening?*, participants tended to describe the unfolding of an event in significantly more detail than when asked *what happened?*, indicating that imperfective framing—i.e. using the *ing*-form—“expands the temporal window of a situation because it is associated with unbounded, ongoing events in its basic construal” (Matlock et al. 2012: 705).

The “close-by” perspective evoked by the English progressive also seems to be the default construal of (non-lexicalised) ENHG *ung*-nominals. This becomes particularly obvious in the frequent use of Prep. + V-*ung* constructions, e.g. *in grabung* “in / while digging,” *in lesung* “in / while reading.” Especially the construction *in* + V-*ung* evokes a highly processual reading in that it refers to an undetermined point within a process or an event whose boundaries are—as in Verhagen’s characterisation of the English gerund cited above—not “in view.” But the same goes for the use of many other prepositions such as *bei* or *mit* (e.g. *bei aufsetzung ditz Sacrament* “in instituting this sacrament,” OOB-1530-KT-019; *aber mit anruffung vnd hilf got des almechtigen griffen wir vnser feind in der stat mit zweien hauffen tro: estlich an* “but with praying to and the help of God Almighty, we confidently attacked our enemy in the city with two armies,” WMD-1500-ST-neu). In New High German (NHG, 1650-today), however, this processual construal option is almost entirely ruled out. The most prototypical instances of *ung*-nominalisations, apart from entirely lexicalised formations such as *Bildung* “education,” refer to bounded regions in time, i.e. to events that are conceptualised as a whole. *Landung* “landing,” for example, while capturing the semantics of its base verb rather comprehensively, tends to refer to the entirety of the landing event; consequently, it is not possible any more to refer to a certain point in the event with the preposition *in* (**in (der) Landung des Flugzeugs musste der Pilot niesen* “in / while landing / the landing of the plane the pilot had to sneeze”). Instead, we would have to use the

preposition *während* “during,” referring to a point during the whole of the (landing) event. In other words, the boundaries of the event do come into view both in this specific construction and in the default construal of NHG *ung*-nominals. This in turn leads to a higher degree of reification: the event is construed as individuated and viewed from a bird’s-eye point of view.

The degree of reification that we assign to a specific word-formation product can also be seen as a manifestation of the perspective we take towards the conceptual entities in question.⁵ The intriguing capability to conceptualise entities not only as they exist or occur in space and/or time is not limited to the linguistic domain but becomes obvious in the domain-general cognitive processes subsumed under the label “mental scanning” by Langacker (e.g. 2008a: 82ff). For example, we can conceptualise a street by “tracing a mental path along it” (Langacker 2008a: 82)—this cognitive operation called “fictive motion” (cf. Talmy 2000: 99-175; cf. also Matlock 2004 for psycholinguistic evidence) is reflected in language, cf. *The road runs along the river*. While we construe a static object dynamically in the case of fictive motion, we are also capable to construe a dynamic event in a more reified fashion, as outlined above. Langacker’s distinction of summary vs. sequential scanning (e.g. Langacker 1987b, 1987a: 141-146) provides a heuristic framework to capture these different modes of construal. While sequential scanning is comparable to a scene from a movie, summary scanning is analogous to a multi-exposed photograph in that it

is basically additive, each set of events contributing something to a single configuration all facets of which are conceived as coexistent and simultaneously available (Langacker 1987a: 145, emphases mine).⁶

The roots of summary scanning as a way of conceptualising events that unfold over time holistically can be sought in the spatial domain. Here we can summarize over, for instance, an assembly of trees by conceptualising them as a *wood* (which does not prevent us, however, to focus our attention on a single tree within this wood—cf. the psychological discussion

⁵ I use “entity” in a very broad sense here, subsuming objects as well as actions, states and events.

⁶ Both the psycholinguistic validity and the heuristic value of the notions of summary and sequential scanning have recently been questioned (cf. Broccias and Hollmann 2007). However, Broccias and Hollmann concede that most of their arguments only pertain to a conceptualisation of summary and sequential scanning as discrete categories; but the observations reported on in the course of this paper demonstrate that the most natural way of conceiving of summary and sequential scanning is in terms of poles on a continuum, as is also held by Langacker (2008b).

of local vs. global attention, see Hurford 2007: 104ff for a review). Our ability to construe assemblies of homogeneous entities collectively is also reflected in word-formation devices such as the (unproductive) German prefix *Ge-*, which derives collective nouns such as *Gebüsch* “shrubbery” or *Geäst* “branchwood.” As we conceive of time in terms of space, i.e. by means of metaphorical mappings from the spatial domain (cf. e.g. Boroditsky 2000; Evans 2004, 2007), it is no surprise that we can conceptualise dynamic events unfolding in time and space in pretty much the same way in which we conceptualise concrete, static entities.

The different degrees of individualisation/reification become obvious if we consider the different readings of German *ung*-nominals such as *Lesung* “reading / reading event” or *Grabung* “digging/excavation.” While the semantically transparent reading of *Lesung*, as in *durch sölich emsig lesung guoter und zierlicher gedichten* “through such eager reading of good and delightful poems” (1478WYL), is ungrammatical in Present-Day German, the most salient readings in NHG, namely, “reading of a bill” and “poetry reading,” both represent special cases of the “bounded region in time” construal. Corpus searches in the historical and contemporary corpora of COSMAS II⁷ reveal that the lexicalisation of the latter reading has been a relatively recent process (Fig. 4-1).

The assumption of a “bounded region in time” reading is of course by no means unique to *Lesung*. Examining the second example mentioned above, namely, *Grabung*, we find that the respective readings oscillate between a rather processual construal as exhibited by the ENHG example in (1) and “bounded region in time” or “bounded region in space” readings, as in (2) and (3), respectively.

- (1) *es geschicht oft, daß in **Grabung** der Fundamenten viel Brunnenquellen gefunden werden* “It often happens that many wells are found in digging up the foundations.” (1688BAW)
- (2) *Und noch eine **Grabung** in vermintem Gelände fand kürzlich statt.* “Yet another excavation on a mined area took place recently.” (ZEIT, 23.06.2005)
- (3) *Das merken wir auch an den vielen Besuchern unserer **Grabung**.* “We notice that as well with regard to the many visitors of our excavation.” (ZEIT, 28.10.2004)

⁷ <<http://www.ids-mannheim.de/cosmas2/>> [Accessed December 2012]

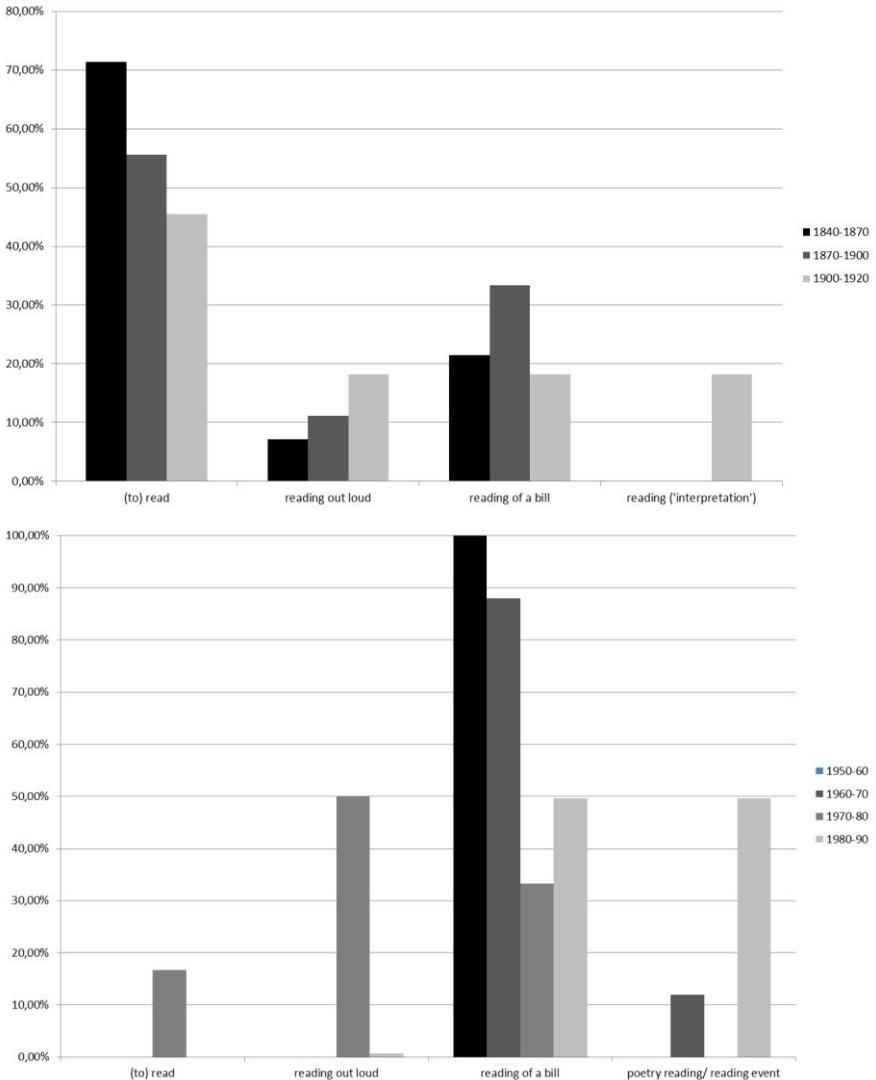


Fig. 4-1: *Different readings of Lesung “reading” in relation to the total number of occurrences of Lesung in the respective time period.*⁸

⁸ Basis: All 44 attestations of Lesung from COSMAS II’s HIST corpus in the time from 1840 to 1920; all 143 attestations of Lesung from COSMAS II’s “W” corpus

From the “bounded region in space” reading it is only a small step towards metonymic transfer, as metonymy is based on close conceptual relations (cf. Blank 1999: 73) or on “some sort of ‘nearness’” (Lüdtke 1999: 52), which can in some cases be taken literally. Considering the cognitive foundations of language, metonymy is of special interest as it reflects basic cognitive construal operations such as profiling and figure/ground alignment (cf. e.g. Radden and Dirven 2007: 28-30). Metonymic transfer to the excavated object is precluded in the case of *Grabung*, but it is possible with the near-synonym *Ausgrabung* “excavation,” cf. Ehrich and Rapp’s (2000: 246) example *Die Ausgrabung ist im Museum ausgestellt* “The excavation is exhibited in the museum.”

As *ung*-derivation often derives nouns from verbs that denote human activities, it is not too surprising that some *ung*-nominals assume a person reading by means of metonymic transfer. However, only a few derivatives can refer to an individual (e.g. *Bedienung* “waiter/waitress,” *Begleitung* “company (several people or one person only)”). Most *ung*-nominals for which a person reading is available refer to collectives of persons, e.g. *Schulleitung* “school administration.”

2.2. Categorisation and prototypicality

The “lexicalisation path” outlined in Section 2.1, which is typical for many *ung*-nominals (especially very frequent ones, further examples including MHG *wonunge* “whereabout” > “region” > NHG *Wohnung* “flat,” MHG/ENHG *übung(e)* “practice” > “exercise”), is tightly connected to linguistic categorisation. Specifically, I argue that *ung*-nominals, over time, assume more and more features of prototypical nouns.

This is in line with the Cognitive Grammar view that parts of speech have a semantic or conceptual basis (cf. e.g. Langacker 1991a: 14ff; Taylor 2003: 216ff). Consequently, it can be assumed that nominalisation processes do not operate on a merely syntactic level but rather go along with construal modifications such as those outlined in the previous sections of this paper. With regard to *ung*-nominalisation, it has often been argued that the resulting word-formation products can be somewhat “verby” (cf. e.g. Vogel 2000: 269). Schippan (1967: 63), for example, states that *ung*-derivation “constitutes a synthesis of the word classes

of written language for the time of 1950 until 1990. Note, however, that 114 out of those 143 items come from the decade of 1980-1990, these data thus abeing much more representative than the data from the preceding time periods.

‘noun’ and ‘verb’ with shifting dominance of the verbal and substantival features” (my translation). This conforms to the observation that “grammatical categories are very much like everyday categories” (Thompson and Hopper 2001: 47), i.e. there are better and less good examples for each category, they exhibit fuzzy category boundaries, etc. (cf. Taylor 2003). If lexical categories can indeed be regarded as “indicators of pre-linguistic categories” (Dotter 2005: 43, my translation) that reflect the construal of situations (cf. also Talmy, 1988; Hentschel and Weydt 1995: 47; Vogel 1996: 109, 191f; Langacker 2007: 439), it is not too strong a claim that words—especially products of word-class changing word-formation processes—can be “between” categories. Consequently, semantic change can entail a shift on the scale of “nouniness” and “verbiness.” Considering this, it might not be accidental that—as Panagl (1987: 146) demonstrates with examples of Latin word-formation—

nouns of action generally show an inherent tendency toward categorial change of meaning. This development, for which the term “drift,” going back to Edward Sapir, seems convenient, tends to proceed through the level of resultative noun (*nomen acti*) and in many cases reaches the level of concrete noun (interpretable as instrumental or local), in certain cases achieving even an agentive reading.

Importantly, Panagl’s observations are in line with the account proposed in this paper. The “drift” from the abstract to the concrete pole as described by Panagl for Latin and attested by the German corpus data can be explained as an increase in (lexical-categorial) prototypicality. Although *ung*-nominals exhibit, to a varying degree, “verbal” features, they have formally always been nouns in filling the NP slot in syntactic constructions and in taking their complements in the genitive case (cf. Demske 2000: 386). Therefore it is not very surprising that the semantics of the word-formation products approach a prototypically nominal meaning by means of lexicalisation.

As Hopper and Thompson (1985: 152) point out, nouns and verbs “have semantic correlates corresponding very approximately to perceived entities in the real world.” While nouns denote objects or concepts that exhibit what Givón (e.g. 1979) has called “time-stability” (cf. also Hopper and Thompson 1984: 705; Hentschel and Weydt 1995: 47), verbs prototypically refer to actions, events and states (cf. e.g. Bredel and Töppler 2007: 824), i.e. “percepts which lack time-stability” (Hopper and Thompson 1985: 152). As becomes clear from the considerations in the previous sections, nouns and verbs cannot, however, be treated as completely distinct and homogeneous categories. This is why Nübling et

al. (2012: 38), drawing on Ewald (1992), propose a semantic sub-classification of nouns, arranging the different classes on a scale according to their respective “nounhood.” Appellatives such as *dog*, *car*, *tree*, representing the prototypical instances of concrete nouns, are maximally contoured and individuated; prototypical abstract nouns such as *joy*, on the other hand, are non-contoured and non-individuated, which is why they are not pluralizable (except if they are used in a reified sense, as in *The joys of youth*). These criteria can also be applied for arranging German *ung*-nominals on a scale of “verb-proximity” (Fig. 4-2) according to their respective meaning, which in turn is motivated by the choice of different construal options.

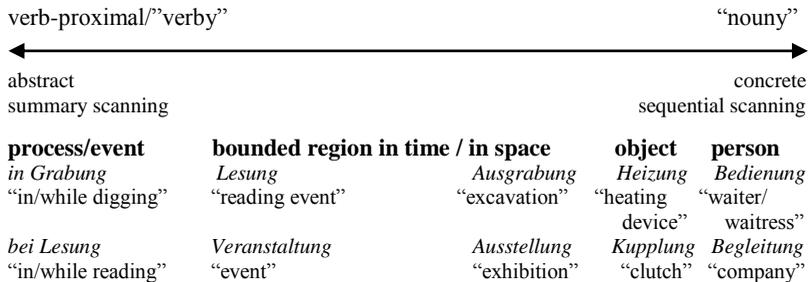


Fig. 4-2: *Scale of “verb-proximity”*

Note that the considerations on construal changes in Section 2.1 and on lexical-categorial prototypicality in this section—roughly assigned to the basic linguistic functions of “perspectivation” and “categorisation,” respectively, for the purposes of our investigation—complement each other. As we have seen, many frequent *ung*-nominals diachronically assume a more reified construal by means of lexicalisation. Although the lexicalisation process mostly entails the assumption of idiosyncratic meaning components—compare, for example, the entirely different frames evoked by *Lesung* “reading,” *Vorlesung* “lecture,” and *Versammlung* “meeting/assembly,” respectively—, the “pathways of lexicalisation” (to borrow Blank’s (2001) term) are very similar on a higher level of abstraction.⁹ Usually, the “lexicalisation path” leads from a process/event reading to a bounded region in time and/or space reading, sometimes proceeding towards an object or even a person reading.

⁹ Remember that the construal options prompted by word-formation patterns can be seen as (image-) schematic in nature, cf. Section 1.2.

At first, this semantic development inducing a higher degree of “nouniness” only affects the word-formation products that undergo lexicalisation, i.e. it is restricted to the semantic level. However, the meaning variants thus emerging can themselves become productive, as Scherer (2006: 12) points out:

In einem Reanalyseprozess wird die gemeinsame neue Inhaltskomponente . . . extrahiert, aus den Einzelwörtern herausgelöst und auf das Wortbildungsaffix bzw. Wortbildungsmuster verlagert.

[In a process of reanalysis, the common new meaning component is . . . extracted, separated from the individual words, and transferred to the word-formation affix or word-formation pattern, respectively.]

Adopting Dressler’s (1987: 99) distinction between lexical enrichment on the one hand and “motivation” of existing words on the other as the two main functions of word-formation, we can assume that the latter, which can be roughly identified with syntactic transposition, is both functionally and temporally primary at least with regard to *ung*-derivatives. In our scale of “verb-proximity,” syntactic transposition would have to be allocated at the verb-proximal pole, while lexical enrichment—i.e. the naming of new concepts—could be assigned to the “nouny” part of the scale. This does not mean, however, that word-formation change is an entirely regular process that follows the pattern outlined in Fig. 4-3 without any exceptions. If we take the reasoning behind the complex adaptive systems approach mentioned at the beginning of this paper seriously, we must acknowledge that word-formation change is also influenced by factors that lie outside the scope of this paper but are tightly connected to the processes elaborated on here. For example, phonotactic patterns also seem to play a role with regard to *ung*-nominalisation, which accounts for the irregular occurrence of *-n-* in *Hoffnung* (< MHG *hoffenunge*): while the attestation of regular *hoffunge* in the document archive of the MHG dictionary¹⁰ is relatively sparse, the variant *hoffenunge* perhaps prevailed because of its phonotactic analogy to other highly frequent MHG *ung(e)*-formations such as *ordenunge* “order,” *bezeichnenunge* “meaning; label,” which pertain to the trochee pattern that has established itself as the “ideal” syllable structure in German from the MHG period onwards (cf. Szczepaniak 2007: 226). This is in line with Taylor’s (2012) hypothesis that language users take record of the linguistic utterances they encounter, thereby compiling a “mental corpus” of constructions at various levels of abstraction—consequently, not only syntactic and morphological patterns can serve as “templates” for the

¹⁰ <<http://www.mhdwb-online.de>> [Accessed December 2012]

coinage of new constructions, but also, among others, constructional idioms such as *the X-er the Y-er* or even phonological and phonotactic patterns. Importantly, the (lifelong) acquisition of constructions can also be accounted for in terms of categorisation (cf. Taylor 2012: 185-194).

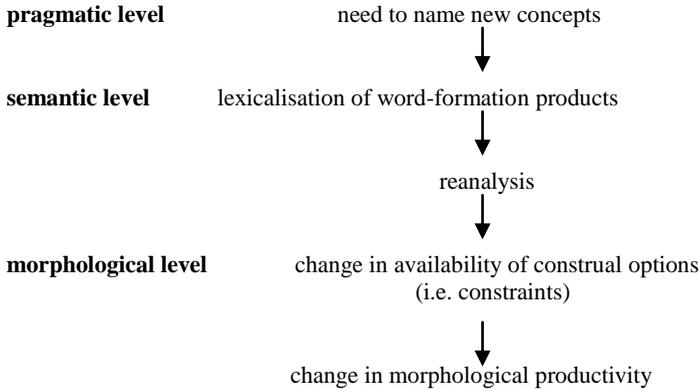


Fig. 4-3: Overview of major processes constituting word-formation change

The increase in “nouniness” is reflected by the syntactic patterns in which *ung*-nominals occur. While the Prep. + V-*ung* construction mentioned in Section 2.1 constantly decreases throughout the ENHG period, the rising degree of individuation is reflected in an increasing amount of *ung*-derivatives accompanied by a determiner¹¹ as well as in the, albeit slight, increase of pluralised forms (Fig. 4-4). Concerning the use of determiners, Langacker (1991a: 97-107) describes the definite and indefinite articles in terms of mental spaces. While the definite article refers to a designated instance t_i of a type T that is unique and maximal in relation to the current discourse space, the indefinite article as well as e.g. *some* and the zero determiner (*Some dogs are cute*; \emptyset *Dogs are mammals*) “suggest that the nominals they ground are insufficient to put [the hearer] in mental contact with a uniquely determined instance of T” (Langacker 1991a: 103). Unlike *some* and the zero determiner, “the indefinite article occurs only with singular count nouns” (ibid.). This corresponds with Brinkmann’s (1949: 16) observation that the determiner can be seen as

¹¹ In accordance with, e.g., Thielmann (2007: 808), I subsumed under the notion of “determiner” not only definite and indefinite articles, but also demonstrative and possessive pronouns, pronominal genitives and quantifiers.

“eigentliches Merkmal des Substantivs” (“actual characteristic of the noun”). Regarding the occurrence of plural forms, Vogel (1996: 115) notes that pluralisation of abstract nouns such as *beauty* automatically entails concretisation: *beauties*, for example, refers to several (human) entities carrying the feature [beautiful]. Consequently, the increase of pluralised forms—which is even more striking if we take the MHG period into account as well: in MHG, hardly any occurrences of pluralised *ung*-nominals are attested, cf. Hartmann (to appear)—can be said to reflect the higher degree of reification.

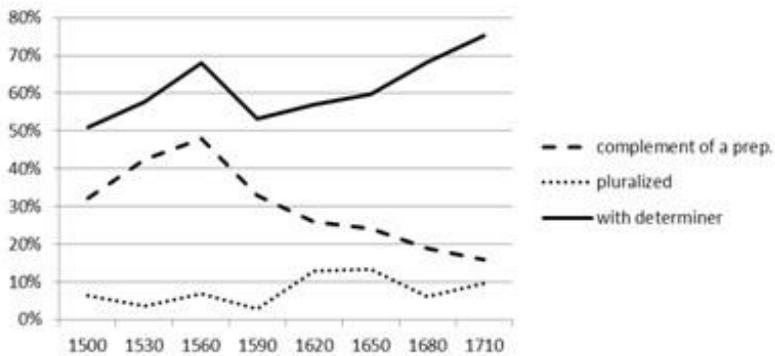


Fig. 4-4: Use of *ung*-nominals in *Prep.*+ *V-ung* constructions, with a determiner, and in the plural form, respectively, as attested by the Mainz ENHG corpus, a compilation of 63 texts (so far) mostly based on PDF scans from a project on German noun capitalisation (Bergmann and Nerius 1989).

3. Conclusion

In the history of Cognitive Linguistics, the interrelation of language and cognition has mostly been studied with regard to semantics. Word-formation, by contrast, has “remained a fairly neglected branch of study in the field of cognitive linguistics” (Onysko and Michel 2010: 9). This paper aims to contribute to the growing body of research investigating the cognitive foundations of word-formational processes (further efforts in this direction include, among others, Ungerer 1999; Panther and Thornburg 2001; Lampert 2009; Taylor to appear; Booij to appear). To this end, the interfaces between morphology, semantics and pragmatics as well as extra-linguistic factors have to be taken into consideration.

The investigation presented in this paper focused on the morphology/semantics interface. Adopting the guiding assumption of Cognitive Linguistics that linguistic meaning reflects the cognitive construal of entities and situations, I argued that word-formation patterns carry image-schematic conceptual content, which is subject to diachronic change. The process of change sets out at the semantic level: some word-formation products undergo lexicalisation. The construal options resulting from this lexicalisation process, in spite of their idiosyncratic characteristics, cluster around a couple of core meaning variants. The new meaning variants can become productive at the morphological level by means of reanalysis—given that they are used frequently enough. On the other hand, established construal options can get out of use, thus becoming unproductive and, eventually, even ungrammatical. The availability of construal options determines the emergence or loss of word-formation constraints, which in turn is reflected in the word-formation pattern's morphological productivity.

The diachronic development of the German word-formation pattern *V-ung* can be considered a prime example of word-formation change. As we have seen, the construal changes outlined in the course of this paper are not only obvious in the semantics of the respective word-formation products but are also reflected by the prevalent syntactic patterns in which *ung*-derivatives occur. The interrelation between “cognition, culture and [language] use” (Bybee 2010: 194) becomes obvious in the study of this word-formation pattern. While this paper does not cover the cultural factors determining the coinage of *ung*-nominals (but cf. Wolf 1987; von Heusinger and von Heusinger 1999), the impact of cognitive factors as well as frequency of use should have become clear. However, the analysis presented here is not exhaustive. Further research can provide a more fine-grained picture of the word-formation pattern's development by analysing the constructions in which it occurs in more detail. Moreover, it is conceivable that further methods of corpus exploration such as collocation analyses can give valuable clues as to the semantic development of the respective word-formation products. Regarding the synchronic constraints affecting the formation of *ung*-nominals, the (mostly introspective) grammaticality judgments of the respective researchers should be complemented by psycholinguistic studies. In addition, a cross-linguistic comparison with similar word-formation patterns in other languages could highlight commonalities and differences in the construal variants prompted by the respective patterns.

Despite these desiderata, the construal approach to word-formation change elaborated on in this paper can prove a powerful heuristic tool for

explaining morphological change as well as synchronic variation in the use and interpretation of word-formation patterns.

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