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Menscheln, kibbelen, sparkle

Verbal diminutives between grammar and lexicon

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German, Dutch and English have surprisingly large sets of verbal diminutives: verbs ending in *-el/-le* and carrying an attenuative and/or iterative meaning. These verbs exhibit particular properties that make them interesting for morphological theory. Focussing on Dutch data, this paper sketches the challenges that arise with respect to structure, productivity and meaning, and proposes a constructionist account that allows for a better understanding of the issues. The central notion is the *schema*, a generalization over the structure of complex words. In contrast to rules, whose main function is to generate new words, schemas *motivate* existing words by marking their structure as non-arbitrary. We discuss the modelling options this gives us and apply them to the verbal diminutives.

Keywords: verbal diminutives, frequentatives, schema, Construction Morphology, motivation, Germanic

1. Introduction

Diminution is mostly seen as a nominal affair. Yet the Germanic languages also possess verbal diminutives: derived verbs denoting activities of low intensity. A few examples are given in (1).

- (1) a. German
hüsteln ‘to cough slightly’
köcheln ‘to simmer’
kippeln ‘to wobble’
- b. Dutch
krabbelen ‘to scratch lightly’
huppelen ‘to skip’
duikelen ‘to tumble’

- c. English
sizzle
scribble
sparkle
- d. Norwegian (examples courtesy of Hans-Olav Enger, p.c.)
somle ‘to dawdle’
romle ‘to rumble’
vrимle ‘to swarm’

The formal pattern associated with verbal diminution is the suffix *-el* and its cognates. In English, Dutch and German, verbs with this suffix constitute surprisingly large classes. CELEX (<http://celex.mpi.nl>, accessed March 15, 2017) yields 250 English *-le* verbs; Weidhaas & Schmid (2015) give around the same number for *-el* verbs in German. The *Van Dale dictionary of present-day Dutch* contains around 300 verbs with *-el*. The largest Dutch collection is de Jager (1875), a two-volume dictionary of “frequentatives”, whose first volume is entirely dedicated to *-el* verbs (although many of the lemmas are now archaic or obsolete). These numbers stand in stark contrast to the scarcity of scientific attention for the pattern. Bauer, Lieber & Plag (2013), for example, exclude it from their extensive account of English derivational morphology, mentioning verbal *-le* in one breath with “historical remnants like *-ric* (*bishopric*) [and] *-ter* (*laughter*)” (2013:4). Weidhaas & Schmid (2015: 183), talking of German, conclude that “hardly any research has been done to examine these verbs in a systematic way”.

Semantically the *-el* verbs are typified by an attenuated reading that justifies the term “verbal diminutives”.¹ In addition, the activity they denote is often repetitive or characterized by a sequence of smaller sub-events, which results in an iterative reading, as in *bubble*, *speckle* or *waddle*.² Other verbs have an onomatopoeic quality; examples are English *mumble*, Dutch *stamelen* ‘to stammer’ and German *gurgeln* ‘to gargle’.

The core pattern for *-el* verbs can be schematized as in (2) (ignoring the syntactic category of the base):

- (2) [_{Act} AT/IT₁ (..._a)]_b (Semantics)
 [_V ..._a -suff₁]_b (Morphosyntax)
 /..._a əl₁/_b (Phonology)

1. We are borrowing the relevant use of the term “attenuated” from Weidhaas & Schmid (2015).

2. Studies regarding iterativity as the primary semantic property often refer to these verbs as “frequentatives” (e.g. de Jager 1875) and discuss them together with *-er* verbs such as English *to patter*, German *bibbern* ‘to shiver’ or Dutch *dobberen* ‘to bob’.

This schema reads as follows: the upper layer shows the semantic structure, which contains the attenuated/iterative (AT/IT) meaning as a function and the meaning of the base as its argument. The entire word denotes an activity (subscript Act). The second layer expresses the fact that the words are verbs and consist of a base and a suffix. The third layer specifies the phonology, which is made up of the phonology of the base – whatever it may be – and the phonology of the suffix. The subscript coincides tie together corresponding parts of structure. They can be thought of as replacing association lines (which are unwieldy to draw). Numbers mark structure that is ‘filled’ or specified, letters mark structure that is ‘unfilled’ or variable. The variable slots are additionally indicated by dots.

This notation (proposed in Jackendoff & Audring forthcoming) is similar in spirit to the constructional schemas in Booij (2010), but it allows us to pinpoint the details with greater precision. For an account of verbal diminution in Construction Morphology, see Booij & Audring (forthcoming).

The individual verbs that we have lumped under “verbal diminutives” match the core pattern to varying degrees. In this paper, we will be particularly interested in divergent cases, be they structural or semantic, and in the theoretical challenges they pose. Specifically, we will discuss four patterns in which the following obtains:

- the pattern is unproductive
- the base is not a stem or word
- *-el* is not a verbal suffix
- the morphological structure of the verb is ambiguous

We will examine each in turn, identifying the theoretical issues at hand. We will then proceed to suggest an account that accommodates the various patterns.

2. Non-lexical bases and non-productivity

The base of the verbal diminutives, notated with the variable *a* in (2), can be verbal (3a), nominal (3b) or adjectival (3c, only in German). Examples are given in the order German, Dutch, English.

- (3) a. verbal base
zünden ‘to play with fire – *zünden* (V) ‘to ignite’
trappelen ‘to paw the ground’ – *trappen* (V) ‘to kick’
suckle – *suck* (V)
- b. nominal base
menscheln ‘to show human weakness’ – *Mensch* (N) ‘human’
neuzelen ‘to twang’ – *neus* (N) ‘nose’
speckle – *speck* (N)

c. adjectival base

blödeln ‘to fool around’ – *blöd* (A) ‘dumb’

Thus, we can reformulate schema (2) as schema (2’).

(2’)	$[_{\text{Act}} \text{AT/IT}_1 (\dots)_a]_b$	(Semantics)
	$[_{\text{V}} \text{N/V/A}_a \text{-suff}_1]_b$	(Morphosyntax)
	$/\dots_a \text{ə}_1/_b$	(Phonology)

Note that the categorization reflects synchronic correspondence relations in the present-day lexicon, not derivational history. This is due to the mentalist perspective taken in this study, which views the grammar of words as the knowledge of language users, uninformed by diachrony. To a speaker of Dutch, the verb *brokkelen* ‘to crumble’ corresponds to the noun *brok*, not to the verb *brokken*, as this word is no longer part of the vocabulary of modern Dutch, although Philippa et al. (2003–2009) identify it as the historical source.

The patterns in (3) notwithstanding, the overwhelming majority of Dutch and English diminutive verbs and a high percentage of their German sisters are root-based, i.e. they do not have a recognizable lexical base. (4) lists a selection of Dutch examples.

(4) Root-based complex verbs

aarzelen ‘to dither’
afroggelen ‘to wheedle sth. out of sbd.’
afwimpelen ‘to get rid of sbd.’
babbelen ‘to babble’
bazelen ‘to talk nonsense’
bedelen ‘to beg’
bekonkelen ‘to cook up’
bezoedelen ‘to sully’
biggelen ‘to trickle (down)’
bikkelen ‘to work hard’
doezelen ‘to doze’

The absence of lexical bases can be attributed to various sources or developments (etymologies from www.etymologiebank.nl, consulted March 30, 2017):

- loss of the historical base (e.g. in *doezelen*, which goes back to *does* ‘dozy’, now obsolete)
- phonological variation (as in *bedelen*, which is no longer recognized as a derivative of *bidden* ‘to ask, to pray’)
- semantic drift breaking the connection between the base and the derived verb (as in *aarzelen*, which is historically related to *aars* ‘behind’).

The schema makes the generalization that Dutch has verbs (subscript e) converted from nouns (subscript d), which themselves consist of a base (subscript c) and the suffix $-el_2$. A verb subscripted e denotes an activity involving the meaning of a noun subscripted d. The suffix lends the base c an instrumental or diminutive meaning. Note that noun d and verb e are identical in phonology, hence the double subscript in the lowest layer.

The existence of the two derivational patterns has the consequence that root-based $-el$ verbs are structurally ambiguous: we have no way of saying which of the homophonous suffixes they contain. Such cases are rampant in German, Dutch and English, since lexical bases are the exception rather than the norm and since N-V conversion is highly productive. The situation is not improved by the availability of the reverse procedure, V-N conversion, which produces ambiguous doublets as in (7) from Dutch.

(7)	<i>klungelen</i> ‘to bungle’	< >	<i>klungel</i> ‘awkward person’
	<i>bikkelen</i> ‘to be tough’	< >	<i>bikkel</i> ‘tough person’
	<i>sukkelen</i> ‘to ail, to plod’	< >	<i>sukkel</i> ‘wimp, plodder’
	<i>stuntelen</i> ‘to be clumsy’	< >	<i>stuntel</i> ‘clumsy person’
	<i>dreutelen</i> ‘to dawdle’	< >	<i>dreutel</i> ‘dawdler’
	<i>griezelen</i> ‘to be creeped out’	< >	<i>griezel</i> ‘creepy person’

Again, we cannot tell whether we are dealing with nominal or verbal $-el$ since we cannot be sure of the direction of the conversion.

Interestingly, such structural ambiguities even extend to words that do have a lexical base. Consider the Dutch verbs and their family members in (8).

(8)	a.	<i>prikkelen</i> ‘to prickle’
		<i>prik</i> (N) ‘prick, jab, sting’
		<i>prikkel</i> (N) ‘prickle’
		<i>prik-</i> (V) ‘prick, sting’
	b.	<i>druppelen</i> ‘to drip’
		<i>drup</i> (N) ‘drip’
		<i>druppel</i> (N) ‘drop’
		<i>drup-</i> (V) ‘drip’

The verbal diminutives *prikkelen* and *druppelen* are derivationally ambiguous. They might be formed according to the pattern in (2’), fleshed out for the stem *druppel-* as (9a), with verbal $-el_1$. (The double <k> and <p> are due to spelling rules.) An equally plausible alternative is the pattern in (6), fleshed out as (9b), with nominal $-el_2$.

(9)	a.	$[_{Act} AT/IT_1 (DRIP_3)]_4$
		$[_V V_3 -suff_1]_4$
		/drɪp ₃ ə ₁ / ₄

- b. $[_{\text{Act}} \text{ACT INVOLVING } ([_{\text{Object}} \text{DIM}_2 (\text{DROP}_5)]_6)]_7$
 $[_{\text{V}} [_{\text{N}} \text{N}_5 \text{-suff}_2]_6]_7$
 /drʏp₅ ə₂/_{6,7}

Synchronically speaking, there is no way of determining whether the verbs in (8) have a structure as in (9a) or in (9b) (see also De Haas & Trommelen 1993: 345, who mention other Dutch examples).

4. Theoretical challenges and a constructionist account

The properties and behaviour sketched in Section 2 and 3 are theoretically interesting and challenging because they pose major disadvantages for a derivational approach, be it in terms of word-formation rules or in terms of feature realization. Let us briefly review the issues.

1. The pattern is clear and well-represented, but not productive.
2. There is a massive prevalence of non-lexical roots.
3. Homophonous suffixes lead to widespread structural ambiguity.

The consequence of the first issue is that we cannot assume a productive rule, since this rule would generate illicit instances. For example, there is no verb **talkle* based on the word *talk*. Naturally, a generative model might propose that such instances are generated and consequently eradicated, but this implies an additional mechanism. It is more parsimonious to state which words exist than to state which words do not exist.

If we tried to posit a redundancy rule restricted to those words from which *-el* words can actually be derived, we encounter the difficulty that – in the majority of cases – these words do not exist on their own in the present-day language. Again, a generative theory could opt for listing such bound roots and stipulating that they do not appear in isolation. However, assuming a root such as **cud* whose sole purpose it is to help generate the word *cuddle* – thereby necessitating both a generative operation and a stipulation that prevents **cud* from occurring by itself – appears to be less parsimonious than simply listing the complex word as a lexical item in the language. Moreover, the former solution is psycholinguistically doubtful, as the meaning of such putative roots can only be established on the basis of inferences from the complex word.

The third issue closes the final loophole: even if we were to assume that the lexicon contains bound roots of the type **cud*, or else **trog*, **wimp* and **konk* (cf. Examples (4)), we could not be sure what word-formation rule to apply, as there are two homophonous patterns available.

In the remainder of this paper, we argue that verbal diminutives – and indeed all morphology – can be modelled more insightfully in a constructionist framework that does not make use of rules. Instead, we propose to state the relevant generalizations as output schemas and couch the analysis in an architecture in which complex words and schemas are stored in lexical memory. Let us introduce the approach in brief.

The general assumptions are those that underlie Construction Grammar (e.g. Goldberg 1995; Hoffman and Trousdale 2013) and Construction Morphology (Booij 2010): words and multi-word units are listed as structured form-meaning pairs in the mental lexicon. This is the canonical situation; individual constructions might lack semantics (the infinitive construction has no specific meaning) or indeed form (the conversion construction has no dedicated phonology). In the notation we have seen, from Jackendoff & Audring (forthcoming), the form part is separated into morphosyntax and phonology, in line with the Parallel Architecture defended in Jackendoff (2002) and Culicover & Jackendoff (2005). Schemas such as (2') and (6) above are a central feature of constructionist models. Compare again schema (2') and two example words, the Dutch verbs *krabbelen* 'to scratch lightly' and *trappelen* 'to paw the ground'.

- (2') $[\text{Act AT/IT}_1 (\dots_a)]_b$
 $[\text{V N/V/A}_a \text{-suff}_1]_b$
 $/\dots_a \partial_1/_b$
- (10) a. $[\text{Act AT/IT}_1 (\text{SCRATCH}_8)]_9$
 $[\text{V V}_8 \text{-suff}_1]_9$
 $/krab_8 \partial_1/_9$
- b. $[\text{Act AT/IT}_1 (\text{STEP}_{10})]_{11}$
 $[\text{V V}_{10} \text{-suff}_1]_{11}$
 $/trap_{10} \partial_1/_{11}$

The three structures are virtually identical, with the exception that the variable in (2') is replaced by lexical material in (10). Notationally, this means replacing the variable index *a* by the constant indices 8 (*krab-*) and 10 (*trap-*). The same applies to the outer variable *b* that ties together the three layers of the schema: it gets replaced by 9 and 11 respectively, which tie together the three layers of the words. Otherwise the three items correspond, down to the identity of the suffix indexed as 1. Hence, the schema in (2') represents a lexical item just like the words in (10). All three items are structurally related: the two verbs might be seen as sisters and the schema as the mother. Together, mother and sisters constitute a tiny piece of morphological knowledge, stating that Dutch has the words *krabbelen* and *trappelen* and that these words share a particular structure. What they have

in common – and where they differ – is captured in the schema. In Construction Morphology and its sister theory, Relational Morphology (Jackendoff & Audring forthcoming), all morphological structure follows from this kind of structural relations between complex words.

While schemas might seem a notational variant of rules, they have important advantages. Since they are first and foremost generalizations over existing words, they are not intrinsically committed to productivity. Schemas are productive when their variables are open and can be instantiated by new lexical material (Jackendoff & Audring 2016). However, this is an optional ‘upgrade’ – an unproductive schema is not dysfunctional in the way an unproductive rule is. Its main function can be characterized as *motivation*: it captures shared structure among words and thereby makes them less arbitrary (for motivation in morphology, see Lakoff 1987; Goldberg 1995; Radden & Panther 2004; Booij 2010 and 2017, cf. also bibliography; Panther & Radden 2011; Jackendoff & Audring 2016; the notion goes back to de Saussure 1916/1977: 133).⁴ Looking back on the examples above, the schema in (2’) motivates the words in (10) by stating what parts of the pattern are systematically the same (the parts indexed by 1 and all the structural scaffolding encoded by brackets) and what parts are systematically variable (the parts indexed by the letters a and b). Indeed, the words *krabbelen* and *trappelen* end up fully motivated: there is no part that has no equivalent in the schema.

Full motivation, however, is not the only option. Existing words can exhibit idiosyncrasies that fall outside the relation to their mother schema. This creates patterns of *partial motivation*. Moreover, words can be *multiply motivated* by being linked to more than one schema. Both notions are relevant to the verbal diminutives, as will be shown next.

5. Partial motivation

It is well known that derived words often exhibit idiosyncrasies vis-à-vis the word-formation pattern that (once) produced them. Such idiosyncrasies can be semantic, phonological or morphosyntactic. Consider the three Dutch nominal diminutives in (11).

- (11) *viltje*: literally ‘little felt’, but meaning ‘cardboard beer mat’
meisje ‘girl’: structurally *meid-je*, with stem allomorphy
akkefietje ‘small unpleasant chore, trifle’: no lexical base

4. A related notion is *inheritance*, but we prefer the term *motivation*, as inheritance is usually associated with impoverished entry theories (see Jackendoff & Audring forthcoming for a fuller discussion).

Viltje, *meisje* and *akkefietje* are daughters of a productive word formation process, but they show the typical irregularities that come with lexicalization. As instances of the diminutive schema (12), they are motivated by it, but only partially so.⁵ The situation is illustrated for *akkefietje* in (13).

- (12) $[\text{Ent DIM}_{12} (\dots_f)]_g$
 $[\text{N } \dots_f \text{-suff}_{12}]_g$
 $/\dots_f j e_{12}/_g$
- (13) $[\text{Ent DIM}_{12} (\text{CHORE})]_{15}$
 $[\text{N } - \text{suff}_{12}]_{15}$
 $/ak\acute{a}fit j\text{ə}_{12}/_{15}$

Akkefietje is motivated for its lexical category (noun), as well as for the phonology, morphosyntax and semantics of its suffix. However, it has no lexical base, so there is no structure corresponding to the variable *f* in the morphosyntax of the schema. For the same reason, the phonological string /akəfit/ remains unindexed – it has no counterpart in either morphosyntax or semantics. (In fact, it is not entirely certain where the root ends and the suffix begins; /t/ could also be seen as part of the suffix.) Also without an index is CHORE, the non-transparent meaning of the word. Hence, *akkefietje* represents a case of partial motivation: the schema accounts for many properties of the word, but not for all.

Partial motivation can also be invoked when a lexical item has the expected semantics plus some additional meaning.⁶ Consider the Dutch noun *peertje*. In line with expectations and with schema (12), the word can be used to refer to small pears, but it additionally means ‘lightbulb’. Hence, all properties of the schema are reflected in the word, yet it is only partially motivated as it has an extra meaning on top. The structure of *peertje* is sketched in (14); we see that ‘lightbulb’ has no index.

- (14) $[\text{Ent DIM}_{12} (\text{PEAR}_{16}), \text{LIGHTBULB}]_{17}$
 $[\text{N } \text{N}_{16} \text{-suff}_{12}]_{17}$
 $/p\acute{e}:r_{16} t\acute{j}\text{ə}_{12}/_{17}$

We are making this point with a productive pattern (nominal diminution in Dutch) rather than an unproductive pattern (verbal diminution) in order to point out an important advantage of the proposed account. The degree of involvement between schema and instance is word-specific. The schema in (12) partially

5. The schema in (12) ignores the allomorphic variants of the diminutive suffix.

6. Note in passing that the reverse situation can also hold: a schema can have properties not reflected in the word. This would be the case for words such as English *swindle* and *ladle* that have an attenuative or an iterative reading, but not both. Therefore they match the schema only partially.

motivates *akkefietje* and *peertje*, but fully motivates other words, say *tafeltje* ‘small table’. In addition, it is productive and can generate new words: we can instantiate the variable *f* in (12) with a neologism, say *tapekini*, and form the new diminutive *tapekini’tje*.⁷ Consequently, the schema in (12) has two functions. For existing lexical items it has a *motivating function*, whereby motivation can be partial or full, whereas it has a *generative function* for novel items. These two functions are reminiscent of the difference between redundancy rules (motivation) vs. proper rules (generation), but the advantage of the current setup is that the schema serves both functions simultaneously (Jackendoff & Audring 2016). This relieves us of the necessity to posit two rules for the same pattern, a redundancy rule ‘in the lexicon’ and a true rule ‘in the grammar’. Obviously, the joint function is in full accordance with the joint modelling of grammar and lexicon that is the hallmark of construction-based theories.

Returning to the verbal diminutives, we see partial motivation in root-based words such as *kibbelen* ‘to bicker’ (15). Schema (2’) is repeated for convenience.

- (2’)
$$\begin{array}{l} [_{\text{Act}} \text{AT/IT}_1 (\dots)_a]_b \\ [_{\text{V}} \text{N/V/A}_a \text{-suff}_1]_b \\ / \dots_a \partial_1 /_b \end{array}$$
- (15)
$$\begin{array}{l} [_{\text{Act}} \text{AT/IT}_1 (\text{ARGUE})]_{16} \\ [_{\text{V}} - \text{suff}_1]_{16} \\ /kɪb \partial_1 /_{16} \end{array}$$

Again, the schema accounts for a number of properties of the verb, while the phonology of the root, the morphosyntax of the root and the lexical semantics of the word – aside from its attenuative and iterative flavour – remain unmotivated.

If we assume with Goldberg (1995: 70) that an optimal system is a system that maximizes motivation, the massive prevalence of root-based words such as *kibbelen* might be expected to give rise to a subschema that caters to this particular situation. This subschema could be represented as in (16). The suffix is the same, hence we re-use index 1, but the pattern as a whole is different, so a different outer index is needed.

- (16)
$$\begin{array}{l} [_{\text{Act}} \text{AT/IT}_1 (\dots)]_h \\ [_{\text{V}} - \text{suff}_1]_h \\ / \dots \partial_1 /_h \end{array}$$

7. This word is taken from the neologism database of the Dutch Language Institute (<http://ivdnt.org/onderzoek-a-onderwijs/lexicologie-a-lexicografie/neologisme-van-de-week-archief/1381-tapebikini>, accessed April 1st, 2017).

This schema is a less specific generalization than the schema in (2'), but it provides the maximum degree of motivation for root-based instances such as *kibbelen*, *doezelen* and *kietelen*. Verbs such as *trappelen* 'to paw the ground', from *trapp*- 'step', show a closer fit to the schema in (2') and thus receive the maximal motivation from this schema.

6. Multiple motivation

Having established motivation as a basic function of schemas, we can also make sense of the troublesome cases in (8) and (9) above. To repeat, these are items that are structurally ambiguous and either contain the verbal diminutive suffix *-el* or are conversions from nouns with a homophonous nominal suffix. The two analyses for *druppel*- (Example (9)) are repeated here.

- (9) a. $[_{\text{Act}} \text{AT/IT}_1 (\text{DRIP}_3)]_4$
 $[_{\text{V}} \text{V}_3 \text{-suff}_1]_4$
 $/\text{drɪp}_3 \text{ə}l_1/_4$
- b. $[_{\text{Act}} \text{ACT INVOLVING } ([\text{DIM}_2 (\text{DROP}_5)]_6)]_7$
 $[_{\text{V}} [_{\text{N}} \text{N}_5 \text{-suff}_2]_6]_7$
 $/\text{drɪp}_5 \text{ə}l_2/_6,7$

If the morphological structure of a word is established via lexical relations to other complex words and schemas that the word shares structure with, then (9a) and (9b) are not merely alternatives, but can in fact be true at the same time (we might call this *promiscuous structure*). This is impossible to state in diachronic, derivational terms, since every word has only one pattern of origin, but synchronically speaking, words may well be *multiply motivated* when they match more than one schema. In the case of *druppel*-, the verb might be listed with links to schema (2') for verbal *-el*₁ as well as to schema (6) for nominal *-el*₂. Again, if we argue from the ideal of maximal motivation, such a situation might in fact be favourable, as it integrates the items in question more tightly in the lexical network. Note also that multiple parentage, even without multiple motivation, is entirely the norm: complex words are motivated both by their stems or bases and by the schema that captures their structure. Hence, *peertje* in (14) is motivated by the nominal diminutive schema in (12), but also by the free word *peer* (not notated).

We reserve the term "multiple motivation" for cases in which a single piece of structure is motivated by two schemas. However, such cases might be more numerous than it seems at first blush, especially in languages that have little morphology, much affixal homophony and/or widespread conversion. A prime

candidate is English, where structurally ambiguous words such as *cuddle* (N/V), *drizzle* (N/V), *handle* (N/V) and *struggle* (N/V) are entirely the norm.

Before concluding, we will take the notion of multiple motivation further to explain an otherwise puzzling phenomenon. We saw before that German, Dutch and English have verbs that are conversions from nouns with nominal *-el*. A selection is given in (17); the suffix is (historically) instrumental in all examples but *Pinsel* and *circle*, which go back to Latin diminutives (etymologies from <https://dwds.de/wb>, www.etymologiebank.nl and www.oed.com, consulted July 8, 2017).

- (17) a. German
stacheln ‘to sting’ < *Stachel* (N) ‘sting’
pinseln ‘to brush with paint’ < *Pinsel* (N) ‘paintbrush’
- b. Dutch
lepelen ‘to spoon’ < *lepel* (N) ‘spoon’
sleutelen ‘to tinker with’ < *sleutel* (N) ‘key’
- c. English
ladle < *ladle* (N)
circle < *circle* (N)

The interesting observation is that the verbs in (17), while not containing a verbal diminutive suffix, show semantic properties that are otherwise typical for verbal diminutives. All words refer to repetitive activities and some are attenuated variants of other verbs (cf. *stechen* ‘to sting’ or (*an*)*streichen* ‘to paint’). Weidhaas & Schmid (2015: 197–198) report semantic or pragmatic attenuation of the sort associated with verbal *-el* for an exceedingly high percentage of non-diminutive verbs. This suggests that the semantic effects of verbal diminution can spill over into the class of nouns with nominal *-el* (including, in Weidhaas & Schmid’s analysis, words where /əl/ is not a suffix at all but part of the stem).

To our mind, the notions of partial and multiple motivation can help to account for this otherwise puzzling behaviour. While the words in (18) are motivated by the nominal *-el* schema (recall (6) above), they also formally resemble the verbal *-el* schema, which may lead to the inheritance of semantic aspects from this schema. While this makes no sense in diachronic or derivational terms, it is easily accommodated in a synchronic architecture involving associative lexical relations and a system that strives for maximal motivation.

7. Conclusion

We started out by listing a number of properties that make diminutive verbs interesting for morphological theory. These properties are:

- a derivational pattern that is transparent and well-represented, yet unproductive
- a massive prevalence of non-lexical roots
- structural ambiguities due to the existence of two homophonous suffixes and the availability of conversion

We have argued for a constructionist account and an architecture that encodes grammatical knowledge in the form of schemas rather than rules. Schemas are lexical items that form networks with the words that instantiate them. This setup provides a helpful modelling space for the issues at hand.

First, productivity in schemas is an ‘upgrading’ option, hence, an unproductive schema is unsurprising and certainly unproblematic. The links between the schema and its instances define the dominion of the schema in a straightforward way.

In Section 4 we argue that the basic function of schemas is motivation: the reduction of arbitrariness in the lexicon. In contrast to rules, which should account for all properties of the items they generate, motivation does not depend on a full match between schemas and words. Divergences such as a category-less base or idiosyncratic semantics lead to situations of partial motivation, the consequence of which is a less tight integration of the word into the lexical network.

Structural ambiguities are particularly problematic for a traditional rule-based account. In the analysis proposed, ambiguities are modelled as multiple motivation: a complex word can fall under the jurisdiction of more than one schema. This approach does not push an artificial decision but lets the ambiguity persist as structural promiscuity. As an additional advantage, multiple motivation accounts for the occasional spill-over of semantic aspects from the verbal diminutives into non-diminutive *-el* verbs.

With our account, we hope to have demonstrated the strengths of a constructionist approach, which gracefully integrates grammar and lexicon, regularity and idiosyncrasy.

References

- Bauer, Laurie, Rochelle Lieber & Ingo Plag. 2013. *The Oxford reference guide to English morphology*. Oxford: Oxford University Press.
- Booij, Geert. 2010. *Construction Morphology*. Oxford: Oxford University Press.
- Booij, Geert. 2017. “Inheritance and motivation in Construction Morphology.” *Defaults in Morphological Theory*. ed. by N. Gisborne & A. Hippisley. Oxford: Oxford University Press.
- Booij, Geert & Jenny Audring. forthcoming. “Partial motivation, multiple motivation: the role of output schemas in morphology.” *The construction of words, Advances in Construction Morphology*. ed. by G. Booij. Dordrecht: Springer.
- Culicover, Peter & Ray Jackendoff. 2005. *Simpler syntax*. Oxford: Oxford University Press.
- De Haas, Wim & Mieke Trommelen. 1993. *Morfologisch Handboek van het Nederlands. Een overzicht van de woordvorming*. Den Haag: Sdu Uitgevers.

- Goldberg, Adele E. 1995. *Constructions: a construction grammar approach to argument structure*. Chicago: University of Chicago Press.
- Hoffmann, Thomas & Graeme Trousdale. 2013. *The Oxford Handbook of Construction Grammar*. Oxford: Oxford University Press.
- Jackendoff, Ray. 2002. *Foundations of language*. Oxford: Oxford University Press.
- Jackendoff, Ray & Jenny Audring. forthcoming. *The texture of the lexicon*. Oxford: Oxford University Press.
- Jackendoff, Ray & Jenny Audring. 2016. "Morphological schemas: Theoretical and psycholinguistic issues." *The Mental Lexicon* 11(3): 467–493. doi: 10.1075/ml.11.3.06jac.
- Jager, Arie de. 1875. *Woordenboek der frequentatieven in het Nederlandsch*. Gouda: G.B. van Goor.
- Lakoff, George. 1987. *Women, fire, and dangerous things: what categories reveal about the mind*. Chicago: University of Chicago Press.
- Panther, Klaus-Uwe & Günter Radden, eds. 2011. *Motivation in grammar and the lexicon*. Amsterdam: John Benjamins.
- Philippa, Marlies, Frans Debrabandere & Arend Quak. 2003. *Etymologisch woordenboek van het Nederlands*. Amsterdam: Amsterdam University Press.
- Radden, Günter & Klaus-Uwe Panther, eds. 2004. *Studies in linguistic motivation*. Berlin: Mouton de Gruyter.
- de Saussure, Ferdinand. 1916/1977. *Cours de linguistique générale*, ed. by C. Bally and A. Sechehaye, with the collaboration of A. Riedlinger. Lausanne and Paris: Payot; trans. by W. Baskin, Course in general linguistics, Glasgow: Fontana/Collins.
- Schönfeld, Moritz & Adolphe Van Loey. 1964. *Schönfelds historische grammatica van het Nederlands: Klankleer, vormleer, woordvorming*. Zutphen: Thieme.
- Weidhaas, Thomas & Hans-Jörg Schmid. 2015. "Diminutive verbs in German: semantic analysis and theoretical implications." *Morphology* 25(2). 183–228.

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