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More species in the affixal forest

The case of Dutch and Afrikaans -el *and* -er

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Abstract

This paper concerns the verbal suffixes *-el* and *-er* in Dutch and Afrikaans. These suffixes often bring about an iterative and/or attenuative interpretation (cf. Weidhaas & Schmid 2015; Audring et al. 2017; Grestenberger & Kallulli 2019). They furthermore display the same morphological behaviour and pragmatic features. This paper presents a detailed dictionary and annotation study on the morphological, semantic, and pragmatic properties of these two suffixes. Our analysis is stated in terms of the three-way division of suffix types proposed in Creemers et al. (2018). We show that the *-el* and *-er* suffixes are categorially flexible suffixes, which are the closest to the stem with respect to other suffixes. As Creemers et al.'s typology (2018) fails to identify verbal suffixes in Dutch that are in the position closest to the stem, this paper adds an important, but previously unnoticed species to one of their affix types.

Keywords: morphology; suffixes; verbal diminutives; Dutch; Afrikaans

1 Introduction

This paper concerns the verbal suffixes *-el* and *-er* in Dutch and Afrikaans.[1] The *-el* and *-er* suffixes are often referred to as *verbal diminutive suffixes* (cf. Weidhaas & Schmid 2015; Audring et al. 2017; Grestenberger & Kallulli 2019), and frequently indicate that an event is iterative (i.e. repetitive), attenuative (i.e. with low intensity), or both.[2] This is illustrated for Dutch in (1)-(2) and (3)-(4) respectively.

(1) *hupp-**el**-en* 'to skip (repeatedly)'
(2) *stuit-**er**-en* 'to bounce (repeatedly)'
(3) *krabb-**el**-en* 'to scratch lightly'
(4) *dobb-er-en* 'to float while rocking lightly'

In (1) and (2), the *-el* and *-er* suffixes bring about an iterative interpretation of the event, that is, the events of skipping and bouncing are presented as occurring repeatedly. In (3) and (4) these same suffixes bring about an attenuative interpretation, in the sense that the events are of low intensity – as indicated by the adverb 'lightly' in the English translation. In (5)-(6) two Afrikaans examples are given with an iterative interpretation, and in (7)-(8) two Afrikaans examples with an attenuative interpretation.[3,4]

(5) *hobb-**el*** 'to bump up and down (repeatedly)'
(6) *blikk-**er*** 'to flicker (repeatedly)'
(7) *does-**el*** 'to sleep lightly'
(8) *knapp-**er*** 'to crackle lightly (of fire)'

In both of these closely related West Germanic languages, verbal suffixes are very rare (De Haas & Trommelen 1993; Combrink 1990). In Dutch, there

1 We would like to thank two reviewers and the editor for their helpful comments and suggestions. All remaining errors are our own.

2 Weidhaas & Schmid (2015: 201) relate the notions of verbal attenuation and iterativity to each other by stating that 'rather than encoding a global and conclusive type of action, an ongoing, durative activity is conceptualised as consisting of smaller events that occur successively but have less force and intensity than the action proper.' This cluster of division of a single event into an iteration of smaller events with attenuated intensity is also common in the domain of reduplication, as in Jamaican Creole *yelo-yelo,* where the reduplicated form can express both lower intensity ('yellowish') and divisional spatial dispersion ('yellow-spotted') (Kouwenberg & LaCharité 2001: 537).

3 Note that in Afrikaans, there is no infinitive marker *-en*. The infinitive has the same form as the indicative.

4 Besides an attenuative interpretation, the verb *knapper* also has an iterative interpretation. As said above, these suffixes can bring about one of the two interpretations, but can also bring about both in one and the same verb.

are only two other verbal suffixes besides *-el* and *-er*, namely the productive suffix *-eer* (e.g. *alarm*$_{N}$-***eer***$_{V}$-*en* alarm-SUF-INFL 'to warn'), and the unproductive *-ig* (e.g. *steen*$_{N}$-***ig***$_{V}$-*en* stone-SUF-INFL 'to stone'). *The Handbook of Dutch Morphology* (De Haas & Trommelen 1993) devotes no more than two pages to the *-el* and *-er* suffixes. This is somewhat surprising, given that Dutch has quite a large set of verbs containing these suffixes (see Audring et al. 2017, and section 4 of the current paper). Furthermore, even though these suffixes are now no longer fully productive, they were highly productive derivational suffixes in previous stages of Dutch.[5,6]

In Afrikaans, the only verbal suffix that is explicitly mentioned in *Afrikaanse Morfologie* (Combrink 1990 – the Afrikaans equivalent of *The Handbook of Dutch Morphology*, see also Van Huyssteen (2020) on *Taalportaal*) is the productive suffix *-eer*. Further, *-el*, *-en*, and *-er* are mentioned in the list of suffixes at the beginning of the handbook, but not discussed in the main text.

Given that these two suffixes are part of the very small set of verbal suffixes in Dutch and Afrikaans, combined with the fact that the set of verbs containing these suffixes (henceforth *-el* and *-er* verbs) is quite large, it is surprising that there is hardly any literature on these suffixes. De Jager (1875) provides an extensive list of *-el* and *-er* verbs in Dutch, but most of the verbs on the list are no longer extant in Modern Dutch (Audring et al. 2017). A recent paper by Audring et al. (2017) focuses on the *-el* suffix only. Moreover, it is specifically devoted to a theoretical analysis thereof and does not contain a detailed list of *-el* verbs in Modern Dutch. A recent unpublished diachronic study on the *-el* and *-er* suffixes in Dutch (as well as English and German) is presented in Schmück (2019). As for Afrikaans, we are not aware of any study on Afrikaans morphology that discusses the *-el* and/or *-er* suffixes.

These suffixes are also found in other Germanic languages, e.g. German and its various dialects, English, and Scandinavian (see Audring et al. 2017, and Schmück 2019 for examples).[7] The only detailed dictionary and annota-

5 The only recent neologism (added in 2017 to the *Van Dale Groot Woordenboek van de Nederlandse Taal*) with the *-el* suffix that we have found is *sportelen* 'to sport recreationally, by elderly people'. We have not found any recent neologisms with the *-er* suffix. We checked both the *Van Dale* and the *Woordenboek van Nieuwe Woorden* (the Dutch dictionary of neologisms).

6 See Weidhaas & Schmid (2015) on the productivity of the German suffix *-eln*, the cognate of Dutch and Afrikaans *-el*. See furthermore Dettwiler et al. (2007) and Eichinger (2014) on the high productivity of this suffix in Swiss German.

7 In fact, the *-el* suffix with iterative and attenuative meaning was present in earlier stages/languages of many branches of the Indo-European language family (Van Bree 1996: 49).

tion study on German *-eln* is Weidhaas & Schmid (2015). As in the case of the paper on Dutch *-el* by Audring et al. (2017), these authors do not include German *-er* in their study.

The ability to express iteration and attenuation, as illustrated above, is not the only shared property of the *-el* and *-er* suffixes. With respect to their morphological properties, we see that they can attach to four types of bases, namely (i) a verbal base (i.e. an existing verb in Modern Dutch/Afrikaans), (ii) a nominal base (i.e. an existing noun in Modern Dutch/Afrikaans), (iii) a non-lexical root (a root that does not exist as an independent lexical item in Modern Dutch/Afrikaans), and (iv) a base which can both be a noun or a verb. Examples are given for Dutch *-el* in (9)-(12). The same types of morphological bases can accommodate the *-er* suffix, in both languages.

(9) *hakk*$_V$-***el***-*en* 'to stutter'	*hakk*$_v$-*en* 'to chop'	
(10) *moff*$_N$-***el***-*en* 'to cover up'	*mof*$_N$ 'sleeve'	
(11) *kabb*-***el***-*en* 'to ripple (of water)'	no lexical base	
(12) *krass*$_{V/N}$-***el***-*en* 'to scrape lightly'	*krass*$_V$-*en* 'to scrape'	*kras*$_N$ 'scratch'

Besides these four morphological base types, both Weidhaas & Schmid (2015) for German, and Audring et al. (2017) for Dutch, include in their typology cases in which it seems that the verb is in fact derived from a noun that inherently contains *-el*. Examples also exist for the *-er* suffix. An example for the *-el* suffix is given in (13), and for the *-er* suffix in (14).

(13) *cirke****l***$_N$-*en* 'to circle'	*cirkel*$_N$ 'circle'
(14) (*aan*)*modde****r***$_N$-*en* 'to skimp'	*modder*$_N$ 'mud'

It is not clear whether the *-el* and *-er* morphemes in the verbs *cirkelen* and *aanmodderen* are the actual verbal suffixes. As Audring et al. (2017) note, the *-el* morpheme in nouns often came from the instrumental suffix *-el,* which was homophonous with the verbal suffix *-el*.[8] Schmück (2019) mentions the same instrumental suffix origin for *-er* in certain Germanic nouns that can form the base for iterative/attenuative verbs such as (*aan*)*modderen*. Audring et al. (2017) set the *-el* morpheme in this type of *-el* verbs aside as a homophonous suffix, whereas Weidhaas & Schmid (2015) do not.

8 As mentioned in Audring et al. (2017), Schönfeld & Van Loey (1964: 238-239) in fact propose that the verbal suffix *-el* developed from a reanalysis of verbs that were derived from nouns containing the instrumental *-el* suffix. See Schmück (2019) for a similar analysis for the *-er* suffix.

The latter argue that this type of *-el* verbs should be accounted for in the same way as the other types, because they can also indicate attenuation or signal endearment/pejorative meaning – two properties that cannot be accounted for as straightforwardly if one assumes two different but homophonous *-el* suffixes. Given this disagreement in the few works on the two verbal suffixes, the current study also investigates this fifth type of morphological base, to see whether the Dutch and Afrikaans data can shed new light on this issue.

As just indicated, a significant property which these two suffixes have in common is that they can be used to signal expressive meaning. Just like the nominal diminutive suffix (Jurafsky 1996), these suffixes can signal a positive or negative evaluation by the speaker of the event that is referred to. The two main types of expressive meaning involved are the signaling of endearment (a positive evaluation) and the signaling of a pejorative meaning (a negative evaluation). Examples for Dutch are given in (15) and (16).

(15) *bomm**el**-en* 'to buzz (of a bumblebee)' (16) *baz**el**-en* 'to waffle'

Our own native speaker judgments are that the verb *bommelen* can signal endearment (a cute and positive sound made by a bumblebee), whereas *bazelen* signals pejorative meaning. It is important to note, though, that expressing endearment or pejorative meaning is not the core meaning of these suffixes. That is, the expressive meaning is an additional layer of meaning, aside from the semantic meanings of iteration and/or attenuation.[9] Both suffixes should therefore be viewed as derivational suffixes which additionally can express or strengthen the speaker's evaluation of the event (see also Weidhaas & Schmid 2015: 189).

All in all, the clearly similar behaviour of the *-el* and *-er* suffixes in their semantics (iteration/attenuation), morphology (being able to attach to the same morphological base types), and pragmatics (endearment/pejorative meaning), makes it worthwhile to investigate both suffixes in parallel. That this joint treatment is warranted, is supported by the existence of such minimal pairs as *stamelen* (Dutch)/*stammer* (English)

9 This is suggested by the fact that the expressive meaning that latches on to the word can go in two opposite directions (positive or negative), which means that the morphemes may trigger or enhance such meanings, but need not be the source of the direction chosen. This is supported by the fact that the history of *bazelen* 'onsamenhangend spreken' relates to the Middle Dutch verb *basen*, which itself had a pejorative meaning already ('raaskallen, gek doen') (https://etymologiebank.nl/trefwoord/bazelen). What the meaning introduced by *-el/-er* arguably does, is to add to the annoyance felt, just as in other cases it can bring out or strengthen endearment.

or *aanmodderen* (Standard Dutch)/*moddelen* (West-Flemish Dutch), where the morphological *-er/-el* alternation does not seem to have any noticeable effect and merely reflects historical choices made and/or lost. This is not to say that we think there can be no differences between the two morphemes. It is certainly true that some of the examples given are more commonly used and known than others, but the present exploratory study takes the parallel behaviour and commonalities as its starting point.

The aim of this paper is twofold. On the descriptive front, we want to enrich the typology of the *-el* and *-er* verbs in West Germanic by presenting a detailed dictionary and annotation study of these verbs in Dutch and Afrikaans. As mentioned above, no detailed study on these suffixes exists for Dutch and Afrikaans, with the exception of Audring et al. (2017) on Dutch *-el* verbs, which however does not include a detailed annotation of the semantic, morphological, and pragmatic properties of these verbs. On the analytical and theoretical front, we want to propose a unified analysis of the *-el* and *-er* verbs in all five morphological base types. This analysis builds on work by Creemers et al. (2018), who argue that there are three types of affixes that can be distinguished. We will show that the *-el* and *-er* suffixes are so-called 'level Ia' suffixes. This type of suffix is positioned closest to the morphological base compared to other suffixes, it often has a low degree of productivity, and a wide range of semantic meanings. Our analysis of the *-el* and *-er* suffixes as level Ia suffixes is particularly interesting for the typology of affix types in Dutch, as Creemers et al. (2018) do not identify verbal suffixes of level Ia in this language.

The outline of the paper is as follows. In Section 2, we briefly discuss the two core previous studies on *-el* verbs, namely Audring et al. (2017) on Dutch, and Weidhaas & Schmid (2015) on German. The latter paper is discussed in more detail, as the methodology of our dictionary and annotation study is partly based on theirs. Furthermore, we discuss Creemers et al. (2018), which is the core paper for our analysis of how the *-el* and *-er* suffixes fit in the typology of Dutch and Afrikaans affix types. In Section 3, we present the methodology of our dictionary and annotation study. In Section 4, we present the results of this study. Section 5 is devoted to our analysis of the affix type that the verbal suffixes belong to. As already mentioned above, we propose that the verbal suffixes are of type level Ia – affixes which are closest to the morphological base compared to the other two types of affixes. Section 6 draws the main conclusions.

2 Previous studies

2.1 Audring et al. (2017)

As mentioned in the introduction, the paper by Audring et al. (2017) is the only recent work which discusses the verbal suffix *-el* in Dutch extensively. They establish that iteration and attenuation are the core semantic meaning components of this suffix. They furthermore state that the morphological base of *-el* verbs can be either a verb or a noun, but that the large majority has a non-lexical root as a base. In addition, they mention that there is a set of verbs for which it is unclear whether the base is a verb or a noun. The four types of morphological bases were already presented in Section 1, abstractly repeated here for convenience.

(17) X_V-*el-en*	X is unambiguously a verb
(18) X_N-*el-en*	X is unambiguously a noun
(19) *X-el-en*	X has no category, i.e. it is a non-lexical root
(20) $X_{V/N}$-*el-en*	X is ambiguous, i.e. it can be either a noun or a verb

However, Audring et al. do not present exact numbers for each type of morphological base, since they did not do a detailed annotation of the set of verbs containing the *-el* suffix in Dutch.

As mentioned above, they include a fifth type of base, namely nouns that already contain the *-el* suffix. Audring et al. argue that this suffix is a non-verbal, homophonous suffix. Accordingly, the set of verbs that contain a noun which in turn already contains this homophonous *-el* suffix, should be set aside from all the other verbs containing the verbal *-el* suffix.

In sum, the paper of Audring et al. forms a useful starting point regarding the Dutch *-el* suffix for the current study to build on, by providing five types of morphological bases that need to be considered when investigating verbs containing the *-el* suffix. As they do not present any detailed dictionary and/or annotation study, the current study has an obvious gap to fill.

2.2 Weidhaas & Schmid (2015)

Weidhaas & Schmid (2015) present a detailed dictionary and annotation study on the German cognate suffix of Dutch *-el*, namely *-eln*. They report a number of 273 verbs ending in *-eln*, based on a dictionary investigation in the *Rückläufiges Wörterbuch der Deutschen Gegenwartssprache* (Mater 2001). As the authors note, this number is an underestimation, as they did not include *-eln* verbs that also have a prefix, in order to keep the semantic and pragmatic annotation focused

on the semantic/pragmatic contribution of the *-eln* suffix.. Moreover, they did not include *-eln* verbs from dialects, in which the *-eln* suffix seems much more productive than in Standard German (Weidhaas & Schmid 2015: 195).

They annotated the dataset of 273 *-eln* verbs for morphological, semantic, and pragmatic properties. Differently from Dutch, German *-eln* verbs can also take an adjective as its base. On the morphological side, they use three morphological base types as annotation categories, the first two of which were also annotated for the subcategories verb, noun, or adjective. Type I are bases that do not contain *-l-*, like *tanzen* 'to dance' which becomes *tänzeln* 'to step delicately'. Base type II are bases that do contain *-l-*, like *Fiedel* 'fiddle' which becomes *fiedeln* 'to fiddle'. For type I and type II, the base can be either a noun, verb, or adjective. Base type III is what we have labeled above as a non-lexical root, i.e. a base for an *-eln* verb that does not exist in the language without the suffix, like *nörgeln* 'to moan'. It is important to note, though, that Weidhaas & Schmid (2015) do not view this type as non-lexical roots from which *-eln* verbs can be derived by adding the suffix. Rather, they take the verbs that fall under this type as underived lexical items. The overview table of Weidhaas & Schmid is presented here in Table 1.

Table 1. Distribution of base types of -eln verbs in German (in percentage) (Weidhaas & Schmid 2015: 195).

	Type I: Base without *-l-*	**Type II: Base with *-l-***	**Type III: 'non-derived'**
	n = 125	*n*= 126	*n* = 22
Verb	74	5	n/a
Noun	17	87	n/a
Adjective	6	2	n/a
Unclear	3	6	n/a

Weidhaas & Schmid's type I verbs thus include both Audring et al.'s (2017) types in (17) and (18) above, whereas the former's type III corresponds to the latter's (19). Audring et al.'s (2017) type in which the base is ambiguous between a noun and verb (20) are included in the 'unclear' subcategories. Weidhaas & Schmid's type II correspond to Audring et al.'s (2017) fifth base type, namely nouns that already contain the *-el* suffix. As can be seen from Table 1, in German there are apparently a handful of verbs and adjectives that also belong to this type.

Two main observations can be made from Table 1. First, the two biggest classes of bases are those of type I and type II, whereas type III is rather infrequent (8% of the data set). Recall from the previous subsection that

Audring et al. (2017) claim that the majority of Dutch *-el* verbs have a non-lexical root as base. It thus seems that German and Dutch differ significantly in this respect. Second, in base type I (bases without *-l-*), the large majority are verbs, whereas in base type II (bases with *-l-*) the large majority are nouns.

As for the semantic and pragmatic annotation, Weidhaas & Schmid focus on different subcategories of the general property of attenuation of *-eln* verbs. These annotations were mainly based on descriptions in the lexical entries in the dictionary. For example, the use of adverbs such as *schwach* 'weak', *klein* 'small', or *leicht* 'light', or adverbs such as *ein bisschen* 'a little' were taken to be indicators of attenuation-related features of the verb under consideration. They divided the different flavours of semantic attenuation on the one hand and pragmatic attenuation on the other hand in five subcategories each. As for semantic attenuation, the subcategories they propose are 'low intensity', 'iteration', 'small pieces', 'playful-tentative' and 'playful-pretentive' [sic].[10] The order of the subcategories is in line with their prominence. As for the pragmatic attenuation, the subcategories are 'language of proximity', 'contempt', 'affection and sympathy', 'trivialization' and 'euphemism'. Again, the order lines up with the prominence of these pragmatic features in the data set. Note that Weidhaas & Schmid do not suggest that these subcategories are unrelated, but rather that they form a semantically and conceptually coherent network (Weidhaas & Schmid 2015: 203).

In order to investigate the extent to which there is a relation between the base types and the semantic and pragmatic features of *-eln* verbs, Weidhaas & Schmid present the following overview as given here in Table 2.

Table 2. Distribution of semantic/pragmatic attenuation in the three types of verbs (in percentage) (Weidhaas & Schmid 2015: 198).

	Type I: Base without *-l-*	**Type II: Base with *-l-***	**Type III: 'non-derived'**
Semantic attenuation	82	23	91
Pragmatic attenuation	42	36	77
Both	36	10	68
Neither	7	51	0

The data in Table 2 show that semantic and pragmatic attenuation is in fact the most frequent in type III verbs, followed by type I verbs. Weidhaas &

10 'Pretensive.'

Schmid state that 'these results are highly unexpected because the monomorphemic, non-derived structure of the Type III verbs seems to exclude the possibility that there is a link between *-l-* and either the semantico-pragmatic complex of attenuation or, for that matter, any other meaning possibly shared by these verbs' (2015: 198). However, the fact that type III verbs in their study have such high percentages of semantic and pragmatic attenuation is only surprising if one follows their analysis of these verbs being non-derived verbs, in which *-l-* is not a verbal suffix. If one, in contrast, assumes that these verbs are derived from non-lexical roots to which this verbal suffix is added, with its associated notion of attenuation, these results are what one would expect. From here on, we will assume that what Weidhaas & Schmid call 'non-derived verbs' are in fact verbs derived from non-lexical roots and the verbal suffix (cf. also Audring et al. (2017) above).

Another observation that can be made based on the data in Table 2 is that the frequency of semantic and pragmatic attenuation in type II verbs is much lower than in the other two types of verbs. As already mentioned in the introduction, Weidhaas & Schmid are reluctant to assume that there is a homophonous *-l-* suffix in (especially) the nouns from which their type II verbs are derived, as proposed by Audring et al. (2017) in the case of Dutch. They are reluctant to do so, because they think that such an account would fail to explain why semantic and pragmatic attenuation also occurs for this type of verb. However, they note that the low frequency of semantic and pragmatic attenuation in type II verbs 'supports the homonymy view to some extent' (2015: 208). We will take up this issue by including Weidhaas & Schmid's type II verbs in the current study on the *-el* and *-er* suffixes in Dutch to see to what extent this type of verb behaves similarly in its semantics and pragmatics compared to the other types of verbs in Dutch and Afrikaans.

To conclude, Weidhaas & Schmid present a detailed dictionary and annotation study of German *-eln* verbs. Setting aside the fact that we do not follow their assumption that their type III verbs are non-derived verbs, their study is a valuable methodological example for our own dictionary and annotation study, and their German results are a useful base to compare the Dutch and Afrikaans results to.

2.3 Creemers et al. (2018)

One of the main goals of Creemers et al. (2018) is to propose a more fine-grained division in the typology of derivational affixes than the classical two-way division of level I and level II affixes (Siegel 1974; Kiparsky 1982 et seq.; Selkirk 1982; Giegerich 1999 a.o.). In the classical two-way division, level I affixes are stress-shifting affixes and level II affixes are stress-neutral affixes.

Furthermore, level I affixes may attach to bound stems (non-lexical roots), whereas level II affixes cannot. The order of the two types of affixes with respect to each other is level II affixes can occur more peripherally than level I affixes. Two other less prominent criteria to distinguish the two types of affixes that have been put forward are productivity and semantic transparency (Creemers et al. 2018: 49). That is, level I affixes are generally less productive than level II affixes, and level I affixes often have a less transparent meaning than level II affixes. Creemers et al. partly adopt this classical division of suffix types, however, they propose that affixes that belong to category level I can in fact be split up into two subcategories, which they label level Ia and level Ib affixes. An important criterion for an affix to fall into either of the two subcategories is their categorial flexibility. Both De Belder (2011) and Lowenstamm (2015) observe that in Dutch and English respectively, the same derivational affix can sometimes result in the creation of an adjective and sometimes in the creation of a noun. Examples from Creemers et al. (2018: 46-47) are given in (21) and (22).[11]

(21) a.	*-aat*]$_{A}$	b. *-aat*]$_{N}$	(Dutch)
	accuur-aat	*kandid-aat*	
	ACCUR-AAT	KANDID-AAT	
	'accurate'	'candidate'	
(22) a.	*-ian*]$_{A}$	b. *-ian*]$_{N}$	(English)
	reptile$_{N}$-IAN	LIBRAR-IAN	
	'reptilian'	'librarian'	

(21) shows that attachment of the Dutch suffix *-aat* can both result in an adjective ('accurate') and in a noun ('candidate'). Similarly, (22) shows that the English suffix *-ian* can either create an adjective ('reptilian') or a noun ('librarian'). These suffixes are far from the only affixes with such categorially flexible behaviour (Creemers et al. 2018: 47). Importantly, they are always level I suffixes under the classical two-way division, since they can affect the stress pattern of the stem. For instance, in the case of (22a), *reptile* has its main stress on the first syllable ['rɛptɪl], but in *reptilian* the main stress has shifted one syllable to the right [rɛp'tɪliən].[12] However, given that there are also level I affixes which

11 We follow the glossing convention of Creemers et al. (2018). That is, bound lexical morphemes are glossed in small caps. These include both non-lexical roots and the affixes themselves. Independent forms (lexical roots) are glossed with the English translation and lexical category (V for verbal, N for nominal and A for adjective).

12 Note that stress shift can only be seen/made visible when an affix attaches to a lexical stem. In cases like (21) and (22b), the stem is a non-lexical root, which does not have a stress pattern to begin with, and thus the stress pattern prior to suffixation cannot be established. Stress shift

do not show categorial flexibility, Creemers et al. propose to divide the set of level I affixes into a subcategory that shows categorial flexibility (level Ia) and a subcategory that does not (level Ib). The overview of the properties of the three types of affixes Creemers et al. propose is given in Table 3.

Table 3. Overview of properties of three types of affixes (Creemers et al. 2018: 50).

Properties	Level-I		Level II
	Level Ia	Level Ib	
Can be stress shifting?	YES	YES	NO
Categorially flexible?	YES	NO	NO
Can attach to bound stem?	YES	YES	NO
Relative position with relation to stem	1	2	3

Let us consider an example affix for each level type.[13] (23) illustrates the case of a level Ia suffix *-iek*. This suffix can be stress shifting – the first property of a level Ia suffix – which can be seen when the stem is an independent lexical item. For instance, in (23b), the stem is the noun ['kanɔn] 'canon', which has the main stress on the first syllable. The derived adjective [kano'nik] 'canonical', however, has the main stress on the suffix. (23) also shows the second property of a level Ia suffix, namely that it is categorially flexible. That is, in (23a) the suffix *-iek* derives a noun, in (23b) it derives an adjective, and in (23c) it can either derive a noun or an adjective. The third property of level Ia suffixes, being able to attach to a bound stem, is shown in (23a) and (23c) – both *pan-* and *ant-* are non-lexical roots. The final property of level Ia suffixes – its relative position w.r.t. the stem – will be illustrated after we have presented the behaviour of level Ib affixes below.

(23) a.	*-iek*]$_{N}$	b.	*-iek*]$_{A}$	c.	*-iek*]$_{N/A}$
	pan-*iek*		*canon-iek*		*ant-iek*
	PAN-IEK		canon$_{N}$-IEK		ANT-IEK
	'panic'		'canonical'		'antique'

In (24) the suffix *-(e)lijk* is used to illustrate the properties of level Ib suffixes. The first property, being able to shift stress, can be illustrated with the

is also excluded when the affix itself cannot bear stress, as in the case of affixes whose vowel is a schwa, for instance. See Creemers et al. (2018) for more discussion.

13 All examples are taken from Creemers et al. (2018), except (24c), as they only provided two examples to illustrate the suffix *-heid.* See their paper for more examples per affix type.

derived words in (24a) and (24b). The verbal stem [ˈanhɔut] 'continue' in (24a) has its main stress on the first syllable, but after the suffix *-elijk* is attached, the stress shifts: [anˈhɔudələk] 'continuous'. The nominal stem [ˈvɛi̯ɑnt] 'enemy' in (24b) has the main stress on the first syllable. With the suffix *-elijk*, the stress shifts: [vɛiˈ̯ɑndələk] 'hostile'. The second property, not being categorially flexible, can be seen in (24): all words derived by the suffix *-(e)lijk* have an adjectival status. The third property, being able to attach to bound stems, is illustrated in (24c), where the suffix attaches to the non-lexical root *vro-*.

(24) a.	*-(e)lijk*]$_A$	b.	*-(e)lijk*]$_A$	c.	*-(e)lijk*]$_A$
	aanhoud-elijk		*vijand-elijk*		*vro-lijk*
	continue$_V$-LIJK		enemy$_N$-LIJK		VRO-LIJK
	'continuous'		'hostile'		'cheerful'

Now that we have determined that *-iek* is a level Ia suffix and *-(e)lijk* a level Ib suffix, we can illustrate the fourth property of these suffixes, namely their relative order with relation to the stem. According to Creemers et al., level Ia suffixes directly follow the stem. Level Ib suffixes can also directly follow the stem, but when there is also a level Ia suffix in the derived word, the level Ib suffix will always occur outside of the level Ia suffix. This latter fact is illustrated in (25) (Creemers et al. 2018: 60).

(25) a.	*publ-iek-elijk*	b.	**publ-(e)lijk-iek*
	PUBL-IEK-LIJK		PUBL-LIJK-IEK
	'publicly'		

In (26) the suffix *-heid* is used to illustrate the properties of level II affixes. The first property, being stress neutral, can be seen especially in the case of (26c): in the adjective [bəˈleːft] 'polite', the main stress is on the second syllable. The position of stress remains the same after suffixation of *-heid:* [bəˈleːfthɛit] 'politeness'. The second property, being categorially rigid, can be seen in all three examples: the output is always a noun. The third property, not being able to attach to a bound stem is illustrated by all the stems being individual lexical items (*schoon* 'clean', *scheef* 'askew', *beleefd* 'polite').

(26) a.	*-heid*]$_N$	b.	*-heid*]$_N$	c.	*-heid*]$_N$
	schoon-heid		*scheef-heid*		*beleefd-heid*
	clean$_A$-HEID		askew$_A$-HEID		polite$_A$-HEID
	'beauty'		'flexure'		'politeness'

Finally, the fourth property of level II suffixes is illustrated in (27), namely the fact that they can only occur in a more peripheral position than level Ia and level Ib suffixes. (Creemers et al. 2018: 60).

(27) a. *publ-iek-elijk-heid* b. **publ-heid-iek-elijk* c. **publ-iek-heid-elijk*
PUBL-IEK-LIJK-HEID PUBL-HEID-IEK-LIJK PUBL-IEK-HEID-LIJK
'the state of being public'

In our analysis of the verbal *-el* and *-er* suffixes in Dutch and Afrikaans in section 5, we will use Creemers et al.'s three-way division of affix types. Since they did not include the *-el* and *-er* suffixes in their typology of Dutch affixes, our study will thus expand their typology of Dutch affixes, and apply it to Afrikaans.

3 Methodology

3.1 Data collection

A list of *-el* verbs and a list of *-er* verbs were collected from the *Van Dale Groot Woordenboek van de Nederlandse Taal* (online version) for Dutch and the *Woordeboek van die Afrikaanse Taal* (online version on Virtuele instituut vir Afrikaans (VivA)) and the *Handwoordeboek van die Afrikaanse Taal* (online version on VivA) for Afrikaans. For Dutch, the data collection proceeded in the following two steps. First, a search was done in the online version of the dictionary using a function that makes it possible to trace verbs ending in *-elen* or *-eren*. Second, the lists of verbs were manually checked for irrelevant or incorrect hits. Following the methodology of data collection of Weidhaas & Schmid (2015), we also manually filtered out all *-el* and *-er* verbs with an additional prefix. This was done in order for the semantic and pragmatic annotation not to be potentially influenced by the meaning of such additional prefixes. For Dutch, the data collection resulted in a list of 299 *-el* verbs and 109 *-er* verbs. For Afrikaans, the online versions of the dictionaries on VivA unfortunately do not provide a function to search for a specific part-of-speech ending in a specific morpheme. This means that the data collection for Afrikaans proceeded differently from Dutch. As a first step, we manually checked whether the verbs on the Dutch lists of *-el* and *-er* verbs also occur in the *Woordeboek van die Afrikaanse Taal.* As a second step, one of the authors of the paper who is a native speaker of Afrikaans consulted other native speakers to determine whether there

are *-el* and *-er* verbs in Modern Afrikaans that did not occur on the list of Dutch verbs. This data collection resulted in a list of 130 *-el* verbs and 52 *-er* verbs in Afrikaans.

3.2 Testing the synchronic use of -el and -er verbs

Given that *-el* and *-er* suffixation is not a productive means of word formation in present-day Dutch and Afrikaans, we first wanted to check whether *-el* and *-er* verbs are still commonly used in (some or all) varieties of these two languages. That is, if it turned out that these verbs are not used anymore, executing a detailed annotation study would be less worthwhile, at least from a synchronic perspective.

For both Dutch and Afrikaans, a questionnaire was created using the online software Qualtrics©. Each questionnaire contained all verbs for the given language that were gathered in the data collection. Each participant was assigned a random set of 30 verbs. The verbs were integrated in a sentence and presented as such to the participants. The participants were asked to indicate on a Likert scale ranging from 1 to 5 whether the boldfaced verb in the given sentence was a verb in the language variety as spoken in their immediate environment (defined as spoken with friends, family, at work, or in their town). They were instructed to assign a '1' if they were sure the verb does not exist in this variety, and a '5' if they were sure the verb does.

84 native speakers filled out the Dutch questionnaire (number of observations = 2520). Their ages ranged from 18 to 76 years old (mean: 28 years old). The participants came both from the Netherlands and from Flanders. 117 native speakers filled out the Afrikaans questionnaire (number of observations = 3510). Their ages ranged from 19 to 86 years old (mean: 46,5 years old). The participants' home towns were located in various regions throughout the country.

We analyzed the data as follows. When participants assigned a '3', '4' or '5' to a given verb, we considered this to be an indication that verb is part of the variety of that speaker, and thus still used in the given variety. When participants assigned a '1' or '2' to a verb, we considered this to be an indication that the verb is not part of the variety of that speaker, and thus not or very infrequently used in that variety.

For Dutch, we found that 81.2% of the total of 408 verbs are clearly part of at least one, but often several, varieties of Dutch. The set of verbs that were not accepted by any of the informants include almost all of the verbs that were labeled as 'non-standard' in the Dutch dictionary Van Dale. For Afrikaans, we found that 95.5% of the total of study are part of at least one variety of Afrikaans. We take these results to indicate that *-el* and *-er* verbs

are still commonly used in both varieties, and thus show the annotation of this data set to be worthwhile from a synchronic perspective.

3.3 Annotation

The data were annotated by two of the authors (Cora Cavirani-Pots for Dutch and Engela de Villiers for Afrikaans) in combination with information provided by the language specific dictionaries. One sociolinguistic and three categories of linguistic properties were annotated for. The sociolinguistic factor concerned 'standard versus colloquial/dialectal' status of the verbs. That is, in some cases the dictionary indicated a verb as 'colloquial' or 'dialectal'. In such cases, these verbs were annotated for as 'non-standard'. If no such indication was given, verbs were annotated as 'standard'.

The three categories of linguistic properties that were annotated for are morphological, semantic, and pragmatic. The morphological annotation category concerned the morphological base type of the *-el* and *-er* verbs. We adopted the five morphological base types as proposed by Audring et al. (2017) (see section 1 and 2). The five types are given here in (28)-(32). The labeling of the types is ours. Note that this labeling is different than the order in which the base types are presented in Audring et al. We have changed the order in such a way that the types with a nominal base – our type II and III – follow each other in the order. In (33)-(37) abstract examples are given for Dutch. The same base types exist for *-er* verbs in Dutch, and for both *-el* and *-er* verbs in Afrikaans.[14]

(28)	Type I	X_V-*el*-*en*	X is unambiguously a verb
(29)	Type II	X(*-el* included)$_N$-en	X is unambiguously a noun, which ends in *-el*
(30)	Type III	X_N-*el*-*en*	X is unambiguously a noun
(31)	Type IV	*X-el-en*	X has no category, i.e. it is a non-lexical root
(32)	Type V	$X_{V/N}$-*el*-*en*	X is ambiguous between a noun and a verb

Concrete examples, as given above in the introduction, are repeated here for clarity.

(33)	*hakk*$_V$-***el***-*en* 'to stutter'	*hakk*$_v$-*en* 'to chop'
(34)	*cirk****el***$_N$-*en* 'to circle'	*cirkel*$_N$ 'circle'
(35)	*moff*$_N$-***el***-*en* 'to cover up'	*mof*$_N$ 'sleeve'
(36)	*kabb*-***el***-*en* 'to ripple (of water)	no lexical base
(37)	*krass*$_{V/N}$-***el***-*en* 'to scrape lightly'	*krass*$_V$-*en* 'to scrape' *kras*$_N$ 'scratch'

14 In the case of Afrikaans, infinitival *-en* is absent, cf. footnote 3.

The semantic annotation category comprised two subcategories. The first subcategory was the property of *iterativity*. That is, for each verb we annotated whether it has a semantic component of iteration or not. We adopted Weidhaas & Schmid (2015)'s annotation strategy for semantic properties to decide whether a verb has an iterative component or not. That is, the *-el* or *-er* verb is compared to the verbal base verb if such verb exists in the language (i.e. in the case of morphological base type I, cf. (28)). If the dictionary indicated an iterative component for the *-el* or *-er* verb that was not present in the base verb, the *-el* or *-er* verb was annotated as iterative. If the *-el* or *-er* verb did not have a verbal base, we compared it to its closest synonym.

The second semantic subcategory was *intensity*. A property that *-el* and *-er* verbs have in common, but that has not been investigated in any detail in Weidhaas & Schmid (2015) for German or Audring et al. (2017) for Dutch, is that they can indicate either low intensity (also labeled attenuation) or high intensity. We included the direction of intensity in our annotation to get a more detailed picture of the semantic range of these suffixes. We used the same annotation strategy as we did for iteration. That is, if there was a verbal base for a particular verb, it was assessed whether the verb with suffix was of a higher or lower intensity than the verb without suffix. In the case of verbs with other morphological base types, we compared them to the closest synonyms. Examples for Dutch *-el* verbs are given in Table 4.

Table 4. Examples of Dutch -el verbs with low, high or neutral intensity.

Low intensity	high intensity	neutral
pruttelen 'to simmer'	*buffelen* 'to beaver away'	*knevelen* 'to muzzle'

The pragmatic annotation category involved the positivity or negativity of the evaluation of the event expressed by the *-el* or *-er* verb. That is, we annotated for the verb being able to signal *endearment* (a positive evaluation) or *pejorative meaning* (a negative evaluation). Given that this is subjective (see also Weidhaas & Schmid 2015), we annotated a verb as 'YES' for either endearment or pejorative meaning if the dictionary entry contained an adjective or adverb that was clearly positive or negative, or if we as native speakers had a strong judgment about the presence of an endearing or pejorative meaning. In all other cases we annotated the verb as 'NO' for the type of pragmatic meaning under consideration. An example of a Dutch *-el* verb that was annotated as 'YES' for endearment is *dartelen* 'to frolic'. The dictionary entry for this verb is *speels bewegen* 'to move playfully', where the adverb *speels* 'playfully' indicates endearment. An example of a Dutch *-el*

verb that was annotated as 'YES' for pejorative meaning is given *wauwelen* 'to waffle'. The dictionary entry for this verb is *vervelend praten* 'to talk in an annoying way', where the adverb *vervelend* 'annoyingly' indicates a pejorative meaning.

4 Results[15]

Let us start with the sociolinguistic factor, namely whether a verb is part of the standard language or not. The numbers and percentages are given for the *-el* and *-er* verbs in both languages in Table 5.

Table 5. Distribution of standard/non-standard verbs spit up by language and per suffix.

	Dutch				Afrikaans				
	-el		*-er*		*-el*		*-er*		
	n	%	*n*	%	*n*	%	*n*	%	
Standard	240	80.6	95	86.2	112	86.2	49	92.5	
Non-standard	59	19.4	14	13.8	18	13.8	3	7.5	
Total	299				130		52		590

As can be seen from Table 5, the majority of the data set is part of the standard language. Only smaller subsets of *-el* and *-er* verbs in both languages were indicated as 'colloquial' or 'dialectal' in the respective dictionaries.

Let us now move on to considering the morphological, semantic, and pragmatic categories of these verbs. The first category we consider is the morphological base type of the verbs. Table 6 gives the frequencies per base type for the *-el* and *-er* verbs in both languages. Recall that type I verbs are verbs whose base is a verb, type II are verbs whose base is a noun which ends in *-el*/*-er*, type III are verbs whose base is a noun which does not end in *-el*/*-er*, type IV are verbs whose base is a non-lexical root, and type V are verbs whose base is ambiguous between a verb and noun. A first observation is that for both *-el* and *-er* verbs in both languages, the largest set of verbs is of type IV – verbs whose base is a non-lexical root. This is in stark contrast with the German results as reported by Weidhaas & Schmid (2015), where the set of

15 The results of the study are open access data and can be viewed here: https://kuleuven-my.sharepoint.com/:f:/g/personal/cora_pots_kuleuven_be1/EjSspzuSlQFEqrqvLgK1_z4BkyyK1mExsOPY5aDf_viUuQ?e=FcQdgt.

non-lexical roots as bases comprises only 8% of the total set of *-eln* verbs (see Table 1). However, these data nuance the claim of Audring et al. (2017) that the large majority of the Dutch *-el* verbs are of this base type. That is, a percentage of 42.8% cannot be seen as 'the large majority', and the percentages of type I (11.7%), type II (17.1%), and especially type V (25.1%) are higher than one would expect if the large majority were of one type only. A second observation is that type III is by far the smallest set of verbs in both languages for both the *-el* and *-er* verbs. A third observation is that type V is rarer in Afrikaans than in Dutch, whereas the reverse holds for type II. Besides these two differences in frequency patterns, all other frequencies are very similar in the two languages.

Table 6. Distribution of morphological categories split per language and per suffix.

		Dutch				Afrikaans				
		-el		*-er*		*-el*		*-er*		
Type		*n*	%	*n*	%	*n*	%	*n*	%	
I	X_V-el-en	35	11.7	15	13.8	14	10.8	9	17.3	
II	$X(\text{-el})_N$-en	51	17.1	2	1.8	31	23.9	8	15.4	
III	X_N-el-en	10	3.3	3	2.8	3	2.3	3	5.7	
IV	X-el-en	128	42.8	76	69.7	75	57.7	28	53.8	
V	$X_{V/N}$-el-en	75	25.1	13	11.9	7	5.3	4	7.7	
Total		299		109		130		52		590

Next, we consider the semantic category and its two subcategories, namely iteration and intensity. The frequencies are given in Table 7 for both languages and both the *-el* and *-er* verbs with respect to iteration, and in Table 8 with respect to intensity. The following relevant patterns emerge. First, the large majority of *-el* and *-er* verbs in both languages have the semantic component of iteration. Second, in both languages low intensity is more frequent with *-el* verbs compared to *-er* verbs, whereas the reverse holds for high intensity. However, low intensity is still quite frequent in *-er* verbs; high intensity with *-el* verbs being much lower in comparison. In other words, low intensity is quite a common property of both *-el* and *-er* verbs in both languages, whereas high intensity is a more prominent property of *-el* verbs than of *-er* verbs.

Let us now turn to the pragmatic annotation category and its two subcategories, namely endearment and pejorative meaning. The frequencies are given in Table 9. The following observations can be made. First, both pragmatic features are present in a subset of both *-el* and *-er* verbs, and in both languages. Second, pejorative meaning is slightly more frequent overall than endearment. Third, especially the subset of *-er* verbs in Afrikaans has a very low frequency of endearment as a pragmatic feature.

Table 7. Distribution of the semantic category 'iterativity' split per language and per suffix.

	Dutch				Afrikaans				
	-el		*-er*		*-el*		*-er*		
	n	%	*n*	%	*n*	%	*n*	%	
Iteration	240	80.6	95	86.2	110	84.4	46	88.6	
No iteration	59	19.4	14	13.8	20	15.6	6	11.4	
Total	299		109		130		52		590

Table 8. Distribution of the semantic category 'intensity' split per language and per suffix.

	Dutch				Afrikaans				
	-el		*-er*		*-el*		*-er*		
	n	%	*n*	%	*n*	%	*n*	%	
Low intensity	170	56.9	45	41.3	73	56.2	23	44.2	
High intensity	52	17.7	55	50.5	27	20.8	27	51.9	
Neutral	76	25.4	9	8.2	30	23.0	2	3.9	
Total	299		109		130		52		590

Table 9. Distribution of pragmatic categories split per language and per suffix.

	Dutch				Afrikaans				
	-el		*-er*		*-el*		*-er*		
	n	%	*n*	%	*n*	%	*n*	%	
Endearing	78	34.1	32	31.4	28	26.1	8	5.7	
Not endearing	199	65.9	75	68.6	96	73.9	43	94.3	
Pejorative	78	51.8	30	39.4	52	53.1	15	46.1	
Not pejorative	146	48.2	66	60.6	61	46.9	28	53.9	
Total	299		109		130		52		590

Having looked at all linguistic categories separately, let us now investigate the relation between the morphological base type of the verbs on the one hand, and their semantic and pragmatic properties on the other. Table 10 gives the frequencies of the semantic and pragmatic features per morphological base type of the subset of Dutch *-el* verbs, Table 11 for the subset of Dutch *-er* verbs, Table 12 for the subset of Afrikaans *-el* verbs, and Table 13 for the subset of Afrikaans

Table 10. Dutch -el: Distribution of semantic and pragmatic features per base type.

					Semantic				Pragmatic			
		Total	Iteration		Low intensity		High intensity		Endearment		Pejorative	
Type		*n*	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
I	X_V-*el*-*en*	35	34	97.1	27	77.1	7	20.0	20	57.1	17	48.6
II	$X(\text{-}el)_N$-*en*	51	33	64.7	12	23.5	4	7.8	4	7.8	17	33.3
III	X_N-*el*-*en*	10	9	90.0	4	40.0	3	30.0	1	10.0	3	30.0
IV	*X*-*el*-*en*	128	95	74.2	82	64.1	8	6.3	37	28.9	55	43.0
V	$X_{V/N}$-*el*-*en*	75	69	92.0	45	60.0	18	24.0	25	33.3	25	33.3

Table 11. Dutch -er: Distribution of semantic and pragmatic features per base type.

					Semantic				Pragmatic			
		Total	Iteration		Low intensity		High intensity		Endearment		Pejorative	
Type		*n*	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
I	X_V-*el*-*en*	15	15	100	3	20.0	12	80.0	1	6.7	4	26.7
II	$X(\text{-}el)_N$-*en*	2	1	50.0	1	50.0	0	0	1	50.0	1	100
III	X_N-*el*-*en*	3	2	66.7	1	33.3	1	33.3	2	66.7	2	6.7
IV	*X*-*el*-*en*	76	57	75.0	37	48.7	32	42.1	27	35.5	30	39.5
V	$X_{V/N}$-*el*-*en*	13	13	100	3	23.1	10	76.9	3	23.1	5	38.5

Table 12. Afrikaans -el: Distribution of semantic and pragmatic features per base type.

					Semantic				Pragmatic			
		Total	Iteration		Low intensity		High intensity		Endearment		Pejorative	
Type		*n*	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
I	X_V-*el*-*en*	14	14	100	10	71.4	3	21.4	6	42.9	5	35.7
II	$X(\text{-}el)_N$-*en*	31	25	80.6	10	32.3	6	19.4	3	9.7	11	35.5
III	X_N-*el*-*en*	3	3	100	0	0	1	3.3	0	0	0	0
IV	*X*-*el*-*en*	75	62	82.7	49	65.3	15	20.0	23	30.7	51	68.0
V	$X_{V/N}$-*el*-*en*	7	6	86.7	4	57.1	2	28.6	2	28.6	2	28.6

-er verbs. What is important to notice from Tables 10 to 13 is that for both *-el* and *-er* verbs in both languages, and for all morphological base types, at least a subset of verbs shows the semantic features and/or pragmatic features we have considered. This is in line with the findings of Weidhaas & Schmid (2015) for the semantic and pragmatic features of German *-eln* verbs of different base types. In their German data, a subset of all the morphological base types considered also showed the semantic and pragmatic features related to attenuation.

Table 13. Afrikaans -er: Distribution of semantic and pragmatic features per base type.

					Semantic				Pragmatic			
		Total	Iteration		Low intensity		High intensity		Endearment		Pejorative	
Type		*n*	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
I	X_V-*el*-*en*	9	9	100	5	55.6	3	33.3	0	0	2	22.2
II	*X*(-*el*)$_N$-*en*	8	5	62.5	5	62.5	3	37.5	4	50.0	5	62.5
III	X_N-*el*-*en*	3	3	100	0	0	2	66.7	0	0	0	0
IV	*X*-*el*-*en*	28	25	89.4	13	46.4	15	53.6	6	2.4	6	21.4
V	$X_{V/N}$-*el*-*en*	4	4	100	0	0	4	100	0	0	1	25.0

Taken together, all morphological base types contain instances of iteration, lower/higher intensity, endearment or pejorative meaning after suffixation of *-el*/*-er*. This suggests that the *-el* and *-er* verbs with morphological base type II – that is, a nominal base that already contains an *-el* or *-er* morpheme – should receive a similar analysis as the *-el*/*-er* verbs with any of the other morphological base types (cf. Weidhaas & Schmid 2015; *pace* Audring et al. 2017).

5 Analysis: *-el* and *-er* as level Ia suffixes

In order to determine what type of suffixes the *-el* and *-er* suffixes are, the properties per suffix type from Creemers et al. as mentioned in subsection 2.3, are repeated here for convenience.

The first property, being able to shift stress, is not a testable property in the case of the *-el* and *-er* suffixes. All morphological bases of the verbs in the dataset are monosyllabic (except for *trompetter*(*en*) 'to trumpet'), meaning that the suffix itself is the only morpheme to which stress could potentially be shifted. Since the vowel in these suffixes is a schwa, which can never bear stress in Dutch and Afrikaans, stress shift onto the suffix can therefore never take place (Sebregts & Van Oostendorp 2020). The second property, categorial flexibility, can be either true or false in the case of the *-el* and *-er* suffixes, depending on whether one assumes the existence of a homophonous *-el* and *-er* in morphological base type II, or not. If one takes the homophony path, one assumes there to be a verbal suffix *-el* and verbal suffix *-er* for the other morphological base types, and a homophonous nominal suffix *-el* and nominal suffix *-er* for type II verbs. In such an analysis, the answer to the question whether the suffixes *-el* and

Table 14. Overview of properties of three types of affixes (Creemers et al. 2018: 50).

Properties	Level-I		Level II
	Level Ia	Level Ib	
Can be stress shifting?	YES	YES	NO
Categorially flexible?	YES	NO	NO
Can attach to bound stem?	YES	YES	NO
Relative position with relation to stem	1	2	3

-er are categorially flexible should thus be 'no', and therefore lead to the analysis of these suffixes as either level Ib or level II suffixes. However, if one assumes that the *-el* and *-er* suffixes are always the same suffixes in all morphological base types, one would analyse them as level Ia suffixes, given their ability to derive both nouns (type II bases, from which an *-el* or *-er* verb can be derived by null suffixation) and verbs (all other types). By looking at the third property, being able to attach to a bound stem, we cannot decide between the two analyses, because this property is expected by both. Note also that this third property forces the homophony analysis to decide on level Ib status, since level II suffixes cannot attach to a bound stem. For the fourth property, the position of the suffix relative to the stem, the two analyses make different predictions, which means we can use that property to determine which analysis is correct. That is, the homophony analysis, in which the *-el* and *-er* suffixes are level Ib suffixes, predicts that *-el* and *-er* cannot co-occur with other level Ib suffixes. The uniform analysis of *-el* and *-er* as level Ia suffixes, which due to their categorial flexibility can both derive type II verbs and all other verb types, predicts that *-el* and *-er* should be able to occur inside level Ib suffixes. A suffix that is categorized as a level Ib suffix by Creemers et al. (2018: 53-54), and that we can thus use to test the ordering of the *-el* and *-er* suffixes with relation to level Ib suffixes, is *-ig*. In Afrikaans, this suffix is *-(e)(r)ig*. As in the case of *-el* and *-er*, for *-ig*/*-(e)(r)ig* it cannot be shown that they are stress shifting – the first property of level Ib affixes – since the vowel of the suffix is a schwa. The second property of level Ib affixes, being categorially rigid is illustrated for Dutch *-ig* in (38), and in (39) for *-(e)(r)ig*. Both suffixes always derive an adjective.

(38) a. *-ig*]$_A$
netel-ig
nettle$_N$-IG
'precarious'

b. *-ig*]$_A$
noodlott-ig
fate$_N$-IG
'fatal'

c. *-ig*]$_A$
zuin-ig
ZUIN-IG
'stingy'

(39) a.	*-ig*]$_A$	b.	*-ig*]$_A$	c.	*-ig*]$_A$
	netel-ig		*noodlott-ig*		*suin-ig*
	nettle$_N$-IG		*fate$_N$-IG*		*SUIN-IG*
	‘precarious’		‘fatal’		‘stingy’

The fourth property, the relative order with respect to the base, is shown in (40)-(41) for Dutch *-ig* and in (42)-(43) for Afrikaans *-(e)(r)ig*. Recall from subsection 2.3 that *-iek* is a level Ia suffix, and that *-heid* is a level II suffix. The examples thus show that *-ig*/*-(e)(r)ig* follows level Ia suffixes, and precedes level II suffixes, meaning that its relative position is that of a level Ib suffix.

(40) a.	*ant-iek-ig*$_A$	b.	**ant-ig-iek*	(41) a.	*zuin-ig-heid*	b.	**zuin-heid-ig*
	ANT-IEK-IG		*ANT-IG-IEK*		*ZUIN-IG-HEID*		*ZUIN-HEID-IG*
(42) a.	*pan-iek-erig*	b.	**pan-erig-iek*	(43) a.	*suin-ig-heid*	b.	**suin-heid-ig*
	PAN-IEK-IG		*PAN-IG-IEK*		*SUIN-IG-HEID*		*SUIN-HEID-IG*
	‘panicky’				‘stinginess’		

Having illustrated the level Ib status of *-ig*/*-(e)(r)ig*, let us now examine the relative order of those suffixes and the *-el* and *-er* suffixes. In both Dutch and Afrikaans, *-ig*/*-(e)(r)ig* can appear after suffixation of *-el* or *-er*, whereas the reverse order is ungrammatical. This is illustrated in Table 15 for all verb types for both the *-el* and *-er* verbs, and in both languages.[16]

The fact that *-el* and *-er* precede the level Ib suffixes *-ig*/*-(e)(r)ig*, indicates that the former should be analysed as level Ia suffixes rather than level Ib suffixes. Thus, the relative order of the *-el* and *-er* suffixes with relation to the stem and other suffixes works in favour of the uniform analysis of *-el* and *-er*, whereas it does not for the homophony analysis. We therefore assume that the uniform analysis of the *-el* and *-er* suffixes, which takes these suffixes to be level Ia suffixes, and hence categorially flexible, to be correct. Furthermore, the advantage of a uniform analysis of the *-el* and *-er* suffixes for all base types, is that it makes it easier to account for the fact that a subset of verbs of base type II also show the semantic and pragmatic

16 Note that in the ungrammatical orders of *-ig* and *-er*, we target the ungrammaticality of this order with *-er* as the verbal suffix, which should not be confused with the comparative morpheme *-er*. For example, *blikkiger* is grammatical as a comparative form of the adjective *blikkig* ‘can-like’, but not as the deverbal adjective of *blikkeren* ‘flikker’.

features present in a subset of other verb types. The fact that not all *-el* and *-er* verbs show exactly the same set of semantic features is also in line with the level Ia analysis of these suffixes, as level Ia affixes are taken to be less semantically transparent compared to affixes of other levels, with level II suffixes being the most semantically transparent (Creemers et al. 2018: 49).

Table 15. Order of *-el/-er* with relation to the stem and level Ib suffix *-ig/-rig*.

		Dutch		Afrikaans	
Type		***-el***	***-er***	***-el***	***-er***
I	X_V*-el-en*	hakk-el-ig	knapp-er-ig	hakk-el-rig	glibb-er-ig
		*hakk-ig-el	*knapp-ig-er	*hakk-rig-el	*glibb-iig-er[17]
II	*X(-el)*$_N$*-en*	cirk-el-ig	modd-er-ig	korr-el-rig	sluim-er-ig
		*cirk-ig-el	*modd-ig-er	*korr-rig-el	*sluim-ig-er
III	X_N*-el-en*	kring-el-ig	blikk-er-ig	spikk-el-rig	snipp-er-ig
		*kring-ig-el	*blikk-ig-er	*spikk-rig-el	*snipp-ig-er
IV	*X-el-en*	aarz-el-ig	treit-er-ig	babb-el-rig	stott-er-ig
		*aarz-ig-el	*treit-ig-er	*babb-el-rig	*stott-ig-er
V	$X_{V/N}$*-el-en*	drupp-el-ig	snott-er-ig	hobb-el-rig	knipp-er-ig
		*drupp-ig-el	*snott-ig-er	*hobb-rig-el	*knipp-ig-er

In sum, a uniform analysis of *-el* and *-er* suffixes in *-el* and *-er* verbs of all base types, in which these suffixes have level Ia status and are therefore categorially flexible, is supported by the relative order of *-el* and *-er* with respect to the stem and other suffixes, and by the fact that they can attach to non-lexical roots. Such an analysis makes it easier to understand why a subset of type II verbs show the same semantic and pragmatic properties as the verbs of other base types: since they contain the same suffix, it is not unsurprising that they are able to signal the same semantic and pragmatic meaning. However, since level Ia suffixes in general have less transparent semantics than higher level suffixes, we can still account for the fact that not all *-el* and *-er* verbs have exactly the same set of semantic and pragmatic features. The analysis of *-el* and *-er* suffixes in Dutch (and Afrikaans) as level Ia suffixes is an interesting expansion of the typology of Creemers et al. (2018:59), given that in their analysis there are no level Ia verbal suffixes in Dutch.

17 Note that *glibbiger* is a possible form in some varieties of Dutch. However, in that case it is a reduced form of *glibberiger* 'more slippery', in which the first *-er* morpheme has been deleted, and thus is not equal to the intended form here.

6 Conclusion

The aim of this paper was two-fold. Descriptively, this study has aimed at enriching the typological description of Germanic *-el* and *-er* suffixes and the types of verbs they derive. This was executed by means of a detailed dictionary and annotation study on *-el* and *-er* verbs in Dutch and Afrikaans, in which the morphological, semantic, and pragmatic properties of these verbs were investigated. Following Audring et al. (2017) we included five types of morphological bases in the data set. The same five base types were also found for the Dutch *-er* verbs, Afrikaans *-el* verbs, and Afrikaans *-er* verbs. The results of the annotation study have shown that in both *-el* and *-er* verbs and in both languages, type IV verbs (based on a non-lexical root) are the most frequent. As for the semantic features, our study has shown that the large majority of verbs have an iterative meaning component. In addition, both *-el* and *-er* verbs in both languages can have a semantic component of high or low intensity, with high intensity being more frequent for *-er* verbs than for *-el* verbs. Concerning the pragmatic features of *-el* and *-er* verbs, the study has shown that in both *-el* and *-er* verbs, and in both languages, endearment and pejorative meaning is possible, though the former is less frequent overall than the latter. Finally, the descriptive part of the study has also shown that the semantic and pragmatic features under consideration are present in a subset of all morphological verb types in both languages.

On the analytical front, this study aimed at determining whether one uniform analysis of *-el* and *-er* suffixes in verbs of all morphological base types was to be preferred over a homophony analysis of two homophonous suffixes for both *-el* and *-er*, and to analyse the level of the *-el* and *-er* suffixes. We have argued for a uniform analysis for *-el* and *-er* in all five morphological base types, and hence do not take the *-el* and *-er* suffixes in type II verbs – in which the *-el* and *-er* morphemes are part of the nominal base – to be different from the *-el* and *-er* suffixes in the verbs with other morphological base types. In terms of the three-way division of affix-types in Creemers et al. (2018), the *-el* and *-er* suffixes were shown to be level Ia suffixes, which corrects an oversight in Creemers et al. (2018), and posits the existence of verbal level Ia suffixes in Dutch.

Even though this was only a first study into Dutch and Afrikaans *-el* and *-er* verbs, we hope to have shown that the *-el* and *-er* suffixes are interesting morphemes from a morphological, semantic, and pragmatic perspective. Interesting future research would include corpus and experimental studies (on the semantic and pragmatic properties of these verbs), as well as further detailed morphological investigation of the small set of Dutch and Afrikaans verbal suffixes and their position in the Dutch and Afrikaans affix systems.

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