The linking morpheme in Afrikaans: a Cognitive Grammar description*

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In Germanic languages the linking morpheme, like the ·s· *in Afrikaans* seun·s·naam *'boy's name', or* ·en· *in Dutch* pann·en·koek *'pancake' is quite common. This word element has been the topic of discussion in the past, with no definite consensus about its origin or possible semantic input. There has been a renewed interest in this phenomenon, especially during the last few years, and not exclusively for Germanic languages. The objective of this paper is to categorise the linking morpheme in Afrikaans in terms of principles from Cognitive Grammar culminating in the postulation of the linking morpheme in two categorisation networks. The goal to construct categorisation networks are met in the conclusion to the paper, and it is concluded that the function of the linking morpheme is semantically highly schematic, but not functionally negligible.*

Keywords: *Afrikaans, Cognitive Grammar, linking element, linking morpheme, morphology*

1. Introduction

Linking morphemes (most often called a linking element, but also known as an interfix, link phoneme, phonomorpheme, connecting morpheme, linker, stem extender, and valence morpheme, amongst many others) are found in many languages of the world. In this article we consider Afrikaans linking morphemes, such as the ·*e*· in *hond*·***e***·*hok* (dog·LK·cage; 'kennel'), and the ·*s*· in *seun*·***s***·*naam* (boy·LK·name; 'boy's name'). For reasons that will become apparent, we use the term 'linking morpheme', instead of the more widely used "linking element".

In the past few years linking morphemes have been the subject of a number of large-scale linguistic enquiries, including Fuhrhop & Kürschner (2015), Krott et al. (2007), Van Tiel et al. (2011), and Wegener (2008), to name but a few. The questions raised in these projects ranged from the theoretical (e.g. the possible morphemic status of this word element), to the descriptive (e.g. historical origins, current uses, and productivity). Specifically in Dutch there has been a decades long investigation into the possible meaning of linking morphemes, from Mattens (1970), to most recently Hanssen (2011), and Banga et al. (2012; 2013). Similarly German has profited from studies especially highlighting the phonological value of these morphemes, like Krott et al. (2007), and Nübling & Szczepaniak (2013). Research on linking morphemes continues to this day, as is evident from the recent investigation by Schäfer & Pankratz (2018) into the plural interpretability of linking morphemes in German.

In contrast to this body of work, the status of linking morphemes in Afrikaans still remains largely unexplored. Apart from some remarks made in passing by a handful of Afrikaans linguists, writing exclusively in Afrikaans (i.e. Combrink 1990; Kempen 1969), no substantive, comprehensive and unifying description of Afrikaans constructions with linking morphemes exist – written in either in Afrikaans, or English. The main aim of this article is therefore to fill this gap in the international descriptive literature on linking morphemes.

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A secondary aim also relates to the descriptive nature of this article, albeit on a more meta-level, namely to demonstrate how Cognitive Grammar (hereafter CG) can be used as a descriptive framework for morphological constructions. CG (see the two-volume *Foundations of Cognitive Grammar*; Langacker 1987, 1991) is one of the earliest sub-theories of what would become known as the Cognitive Linguistics enterprise (Evans & Green 2006). As such, CG is also one of the oldest construction grammar theories, and has been used widely in the description of numerous grammatical constructions in various languages. However, compared to especially lexical, syntactic, and discourse studies, the use of CG in morphological descriptions has been rather scant. In addition to some writings by Langacker (e.g. 1990) and Taylor (e.g. 2002, 2015), two of the main proponents of CG, and an overview by Evan & Green (2006), the only other significant body of morphological research within this framework is by Tuggy (e.g. 2003, 2005) and Hamawand (2011). Van Huyssteen (2010) mentions several other morphological studies that have been done within the broader Cognitive Linguistics paradigm, though not specifically using CG as descriptive framework (e.g. Janda 2011; Manova 2011). This article therefore strives to contribute to this relatively small body of literature employing CG.

Of course, one would immediately ask why there is only such a small body of literature. Is CG perhaps not appropriate for morphological descriptions? There might be two main reasons why CG has not caught on as a popular morphological theory. Firstly, mainstream CG specialists have tended up to now to focus more on 'larger' constructions, such phrase, sentence and discourse constructions; 'smaller' constructions (like morphological constructions) have been mentioned in passing, or were described in isolated publications. This, however, does not imply that CG is not appropriate for morphological descriptions. On the contrary, Tuggy (2005) makes a convincing case for CG and other constructionist approaches to describe and explain various morphological phenomena that are difficult to account for in other theories. As will be illustrated in this article, we believe that the linking morpheme is another such a phenomenon that will benefit from a CG/constructionist treatment.

Secondly, Booij's theory of Construction Morphology (hereafter CM; 2010) became the de facto flavour of constructionist approaches to morphology, thereby overshadowing other sub-theories like CG, Cognitive Construction Grammar (Goldberg 2006), or Radical Construction Grammar (Croft 2001). If this creates the impression that CM and CG are at odds, nothing could be further from the truth. In our opinion, these two theories are both sub-theories of the general theory of Construction Grammar (CxG), within the broader Cognitive Linguistics paradigm. As such, CM and CG could and should be used in tandem, as was illustrated already in Van Huyssteen (2018). Continuing along these lines, we will demonstrate in this article that we generally work within and subscribe to the tenets of CM, while using specific tools and constructs from CG mainly for two purposes, namely:

(a) to give fine-grained descriptions of the realisational (i.e. phonological or orthographical) and conceptual (i.e. semantic details) of morphemes (component constructions) and complexes (composition constructions); and
(b) to construct (visual) categorisation networks, providing an overview of a specific morphological construction, its schemas and instantiations, while also explicating the interrelationships among constructions and their allomorphic variants.

In addition to the aforementioned primary and secondary aim, this article has another secondary aim, namely to provide a CG perspective on the age-old question of whether the linking morpheme is indeed a morpheme, i.e. a form-function pairing serving as a component

construction in morphological composition constructions. This question has been considered from different approaches, each highlighting different aspects of the linking morpheme. For example, Neef (2015) criticises linguists that follow a functional approach to linking morphemes, and holds that they are searching for meaning/content for this "morpheme", while it is nothing more than a form of stem allomorphy.

Contrary to Neef's (2015) viewpoint, the linking morpheme in Afrikaans will be characterised in this article as a morpheme, albeit with minimal form (prototypically consisting of only one grapheme/phoneme), and highly schematic conceptual content (i.e. highly abstract or vague meaning, to the extent that it is mostly meaningless from a synchronic viewpoint). In addition, it will be illustrated that one of the linking morpheme's functions is to create allomorphs with the purpose to increase the valence of component constructions to combine with other components. This opinion is grounded in the constructionist (and specifically CG) view that a morpheme is the smallest/minimal symbolic manifestation in language, which cannot be analysed into smaller meaningful parts (Langacker 2013: 16). Despite its 'size' and schematicity, the linking morpheme still contributes to the overall construal of a composite construction, since:

> […] the meaning of many linguistic elements – especially those considered "grammatical" – consists primarily in the construal they impose, rather than any specific content. Yet every element evokes some content (however schematic it might be), and conversely, any content evoked is construed in some fashion (Langacker 2008: 43).

The discussion will begin with an account of constructions in CG (§2), followed by the specific application of linking morphemes in Afrikaans in terms of composition (§3.1) and entrenchment (§3.2). In §4 Afrikaans corpus data will be analysed to ultimately postulate a categorisation network for the linking morpheme in compound and non-compound words. The origin, nature, and structure of the corpora form part of the discussion in §4. The article concludes with a discussion of the two categorisation networks for the linking morpheme in Afrikaans.

2. Constructions in CG

A construction is any symbolic form-function pairing in a language (Langacker 2013: 15). In constructions such as (1), which is a representation of the word *eend* 'duck' in Afrikaans, the uppercase letters symbolise the conceptualised idea (i.e. meaning) of a water bird with webbed feet (on the pole of conceptualisation, also known as the semantic pole), while the lower case letters represent the realisation (i.e. form) of the idea on the realisation pole (also known as the phonological pole). Square brackets are used to show that the concept is already an accepted word in the language; normal/rounded brackets are used for unknown examples such as neologisms and newly constructed compounds.

(1) [[DUCK]/[eend]]
'duck'

Importantly, note that in accordance with Langacker (2013: 15) any formal realisation, whether phonological or orthographical, is taken into account in the construal of constructions. When

referring to the realisation/phonological/orthographical pole in this article, the actual orthographical realisation will be used as representation rather than the sounds that the construction consists of. Van Huyssteen (2018:405) reiterates the role orthographical representation plays in the overt symbolisation of meaning in CG, and therefore motivates why orthographical elements like hyphens could also be considered as linguistic elements. As will be indicated in this article, the hyphen sometimes fulfils a valence function (e.g. to avoid potential readability problems), and at other times as semantic function (i.e. to indicate a coordinative relation between constituents in compounds). As such, the hyphen complies to the general definition of what a morpheme is, namely a form-function pairing, despite the fact that the form is not realised in traditional letters or sounds.

Constructions need not be fully specified: words like the example in (1), or the representation of the plural construction in (2a), are both constructions, seeing as both have a semantic and phonological pole. The absence of a middle dot (·)[1] in the case of (1) denotes phonological independency which is not the case with (2a), seeing as (2a) is a suffix that must combine with other constructions to be able to function (Van Huyssteen 2017: 186). When these constructions combine, they form complex constructions (Langacker 2013: 15), which are represented as in (2b), and which can be simplified notationally as in (2c). Note that 'THING' is used in CG in a rather technical sense, referring to entities that are profiled by nouns.

(2) a. [[PL]/[·s]]
b. [[[THING]/[X]]/[[PL]/[·s]]]
c. [THING·PL/X·s]

When two or more constructions are combined, phonological and semantic dependency comes into play (to be discussed as part of composition in §3.1). An example of a composition structure is given in (3a) where two independent component structures ([EEND/eend] and [HOK/hok]) combine *with a highly dependent component [LK/·e·]*.

(3) a. [DUCK·LK·CAGE/eend·e·hok]
'duck's cage'
b. [DUCK·LK·FARMER/eend·e·boer]
'duck farmer'
c. [DUCK·LK·LIVER/eend·e·lewer]
'duck's liver'

Other composition structures, like those in (3b) and (3c), clearly share commonalities with (3a). These commonalities can be represented as a constructional schema (Langacker 2013: 219). Constructional schemas are the way in which knowledge of linguistic patterns are expressed (Evans et al. 2007: 25) – schemas in CG fulfil a similar role as rules in generative grammar, namely to model our knowledge of patterns of commonalities in language use (Langacker 2013: 23). Similar to constructions, constructional schemas are not limited in their level of specificity (Langacker 2013: 24), and because of this characteristic, (4a) (together with Figure 1), (4b) (together with Figure 2) and (4c) (together with Figure 3) all serve as increasingly

[1] Seeing as hyphens are analysed as graphemic linking morphemes, it would be confusing to use them to indicate morpheme boundaries. For this reason, middle dots (·) are consistently used in this paper to indicate morpheme boundaries, following the tradition of Bauer (2003).

schematic constructional schemas of the *eend* composition structures. Ellipses are used to indicate a high level of schematicity, or non-specificity.

(4) a. [DUCK·LK·CAGE/eend·e·hok]
‘duck’s cage’
b. [DUCK·LK·THING/eend·e·...]
‘duck·LK·THING’ (any compound with left-hand constituent *eend*, followed by a linking morpheme and another noun, e.g. *eend·e·plaas* ‘duck farm’, *eend·e·boerdery* ‘duck farming’, and *eend·e·dam* ‘dam for ducks’.)
c. [THING·LK·THING/...$_1$·e·...$_2$]
‘THING·LK·THING’ (any noun-noun compound with a linking morpheme)

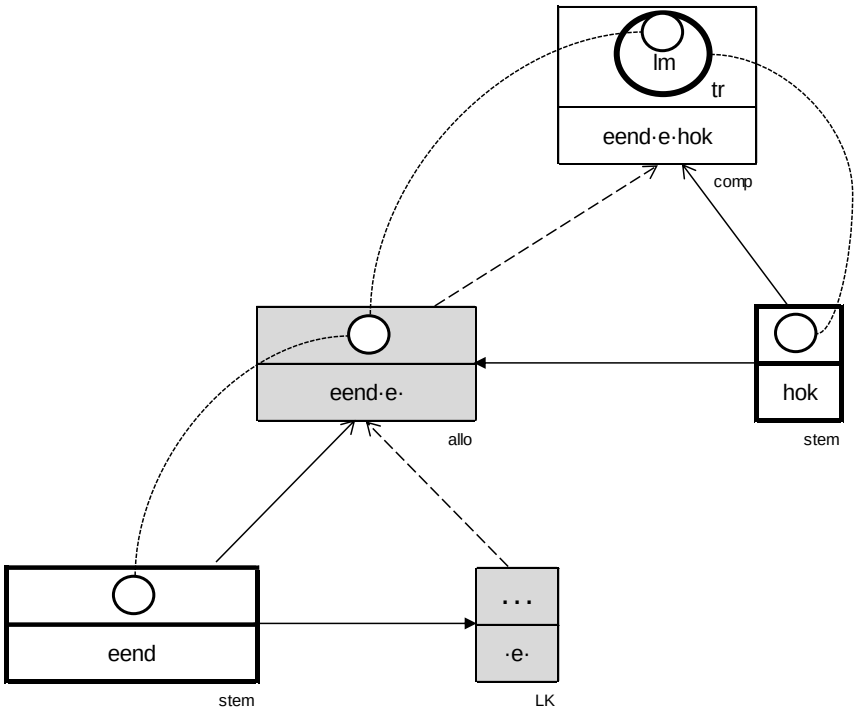

Figure 1: Schema of [EEND·E·HOK/eend·e·hok] ‘duck’s cage’

These schemas are illustrative of the way in which morphological constructions are described in CG. Langacker (2013: 10) emphasises that any visual representation serves a heuristic function; it is merely an aid to explain a certain linguistic phenomenon. In visual representations, halved rectangles are component structures. Things (nouns), irrespective of their status as component or composition structures, are represented as circles. The dark border around some rectangles represents the important role of that specific component structure as the profile determinant in the formation of a more complex construction. In §3.1.1 constructional profiling and the representation of constructional schemas with the use of, among others, correspondence lines and ‘tr’ and ‘lm’ will be discussed in detail. On the realisation pole, structures are represented with lower case lettering. The abbreviation ‘allo’ is used to indicate allomorphic structures; ‘comp’ is used to indicate compounds; ‘LK’ for linking morphemes; and ‘stem’ labels an independent component (either words or stems). In subsequent figures (e.g. Figure 6) the abbreviation ‘aff’ is used for affixed forms.

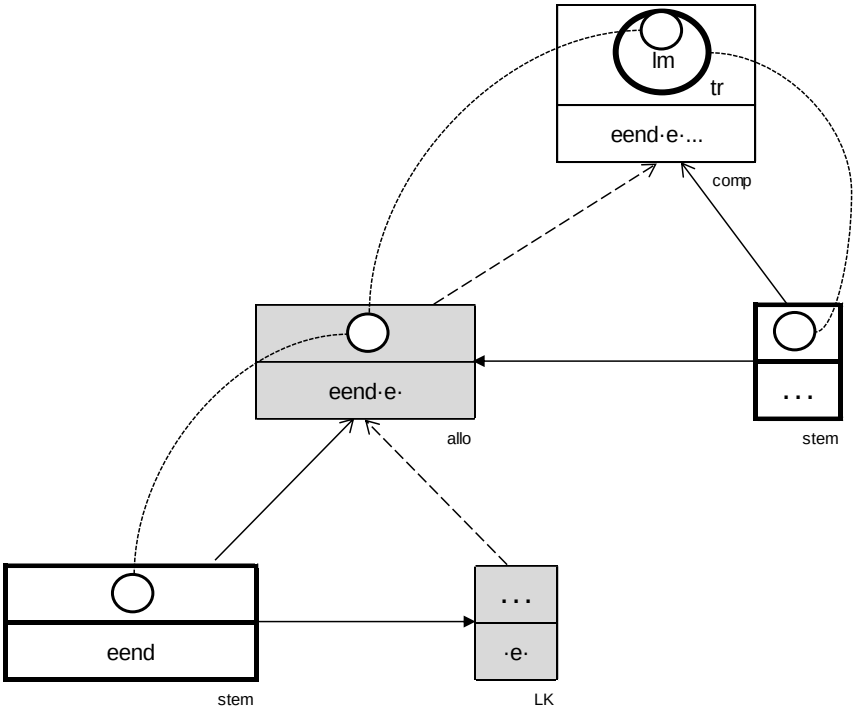

Figure 2: Schema of [EEND·LK·THING/eend·e·...]

A crucial difference between the representation in (4a) and Figure 1 is the arrows. The arrows with the black heads in Figure 1 represent the order in which component structures combine. This arrow always points in the direction of the component structure that elaborates the composition structure on the next level of constituency. The arrow originates from the profile determinant or the component that determines the *nature* of the composition structure on the next level of constituency. The broken line arrow and normal arrow (with open heads) that feature between the levels, join the profile determinant (normal arrow) with the component that serves to elaborate the profile determinant (broken line arrow) (in §3.1.1 it will be made clear what is meant with profile determinant.) Another difference between the representation in (4a) and Figure 1, is the grey colouring of the constructions that are semantically and/or phonologically dependent.[2] The shading indicates the dependency of the component structures, and that it is necessary for the dependent structures to combine with at least one other, more independent component structure (like an affix or independent word) to function.

Figure 3 is the most abstract of the constructional schemas and makes use of two wholly unspecified component structures on the realisation pole. It is important to remember that the construal of more general, higher-level schemas (abstract schemas) is not preferred to the construal of lower level schemas (concrete schemas). It is a characteristic of CG that distinguishes it from other approaches: more general schemas are important to show commonalities, but an extensive network of abstract and specified/concrete schemas is necessary to postulate a complete description of any linguistic phenomenon (Tuggy 2003: 28). The implication here is that lower level schemas have to be included in the description of the linking morpheme.

[2] Langacker uses hatching to represent non-specifity/dependency. See Langacker (2013: 198) for an example.

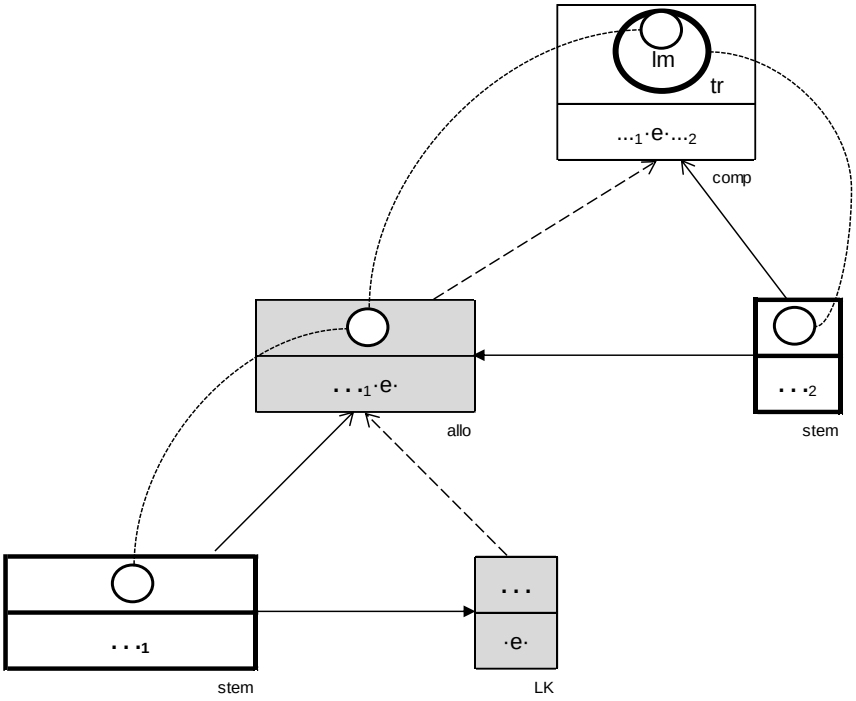

Figure 3: Schema of [THING·LK·THING]/...$_1$·e·...$_2$]

The ease with which a schema is activated by users, depends on the level of *entrenchment* that the specific schema enjoys (Van Huyssteen 2005: 134). The more entrenched a constructional schema is, the more easily it will be activated by users in the process of making new constructions. (In §3.2 entrenchment will be discussed and as components thereof, *generality* and *productivity*.) In the current example, Figure 3 functions as the most productive of the three schemas seeing as it accommodates a massive range of possibilities regarding the first and third component structures. It is unlikely that users will use the schema in Figure 3 when new complex structures with *eend* as the first component must be constructed, as it is formulated very generally/abstractly. Even though Figure 2 is less generally formulated than Figure 3, it is entrenched by/familiar to users when forming complex structures that use *eend* as its first component.

The schemas are themselves generalisations of language use, but they also share characteristics with each other. Related schemas form a categorisation network: a collection of two or more schemas that share certain aspects. The composition structures in Figures 1, 2, and 3 are conflated into a simplistic categorisation network in Figure 4. The solid arrows between schemas represent *elaborations*, as opposed to dashed arrows indicating *extensions* (Langacker 2013: 17–18). Each node on the left-hand side of the categorisation is an elaboration of the one above it, without deviating from it. An extension is a schema that shows commonalities, but also differences, such as the right-hand node in Figure 4. Because an eagle is a bird and the word *eagle* systematically occurs with a linking morpheme when used in complex constructions as first component, it still has something in common with the rest of Figure 4. The use of the ·*s*· linking morpheme is grounds enough to see it as an extension rather than an elaboration. This article aims to construct such a categorisation network for the linking morpheme in Afrikaans that would serve as a synchronic description of this particular word element. Before an extensive categorisation network can be postulated,

it would be prudent to first discuss the processes of *composition* and *entrenchment* with regard to linking morphemes.

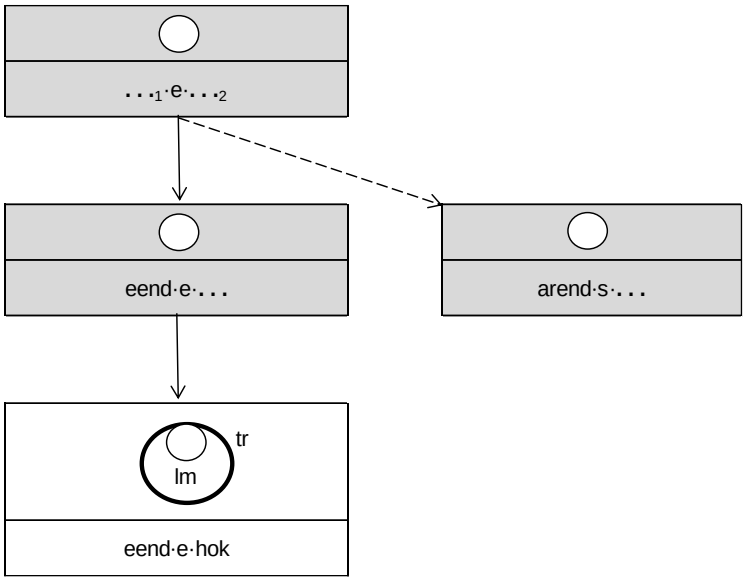

Figure 4: Categorisation network of composition structures with [EEND] 'duck', with [arend·s·...] 'eagle's THING...' as extension

3. Characterisation of the linking morpheme

When describing a linguistic element from a CG perspective, the following cognitive processes need to be taken into account (Van Huyssteen 2005: 128): *symbolisation* (the construction of form-meaning pairs), *composition* (how composition structures are constructed), *categorisation* (where a linguistic element fits into the network of linguistic elements), *schematisation* (the abstraction of commonalities in language use), and *entrenchment* (how easily a constructional schema is activated to construct new, similar constructions). The linking morpheme is, with regard to symbolisation, a form-function pair where the form is specified, but the meaning is highly schematic. The description of the systematic behaviour of the linking morpheme can be seen as a description of the schematisation thereof – the main aim of this article. In this article, composition and entrenchment will be discussed in detail seeing that these processes are at the core of the characterisation of the linking morpheme in Afrikaans.

3.1 *Composition*

Composition entails the combination of component structures to construct more complex composition structures. The manner of combination and the relationship between the component structures are central to this cognitive process. Composition also has to do with the commonalities between the component structures' substructures, the layout of the compositional route that the component structures follow to ultimately form a composition structure, and the distinction between dependent and independent structures (Butler 2014: 55;

Van Huyssteen 2005: 128–131). Constructional profiling, semantic and phonological dependency, and constituency are concepts that form part of composition.

3.1.1 *Constructional profiling*

Constructional profiling entails drawing attention to a specific substructure within a conceptual base structure (Langacker 2013: 66). In terms of complex constructions, it refers to such a structure's *profile determinant* (Van Huyssteen 2005: 129). Compare (5a) versus (5b), for example: both of these structures invoke the image of an eagle (base structure), but different aspects (substructures) of the eagle are being brought to the forefront, namely the claw and the eye respectively. The same goes for other complex constructions like (6) where the emphasis is placed on the person swimming by the use of the nominalising affix ([NR/·er]) that functions as a profile determinant. The profile determinant is also called the *trajector* and the base component structure the *landmark*. [AREND/arend] in (5a), as the base structure of the complex, functions as the landmark, and [KLOU/klou] as the core and specific substructure, functions as the trajector. The trajector and landmark are distinguished from each other in the schemas by the use of 'tr' for trajector and 'lm' for landmark; the trajector is also encircled with a darker line than the landmark; the landmark is connected to the component structured with a dotted arrow; the trajector is connected to the component structure with a solid arrow. Figure 5 serves as an example of these sketch conventions.

(5) a. [EAGLE·LK·CLAW/arend·s·klou]
'eagle's claw'
b. [EAGLE·LK·EYE/arend·s·oog]
'eagle's eye'

(6) [SWIMM·NR/swemme·er]
'swimmer'

In this article the constructional profiling of compounds is characterised using the semantic relationships described in Verhoeven et al. (2014: 28–50). Figure 5 is an example of a part-whole relationship (Verhoeven et al. 2014: 38). In (5a), [CLAW/klou] is a part/component of the whole [EAGLE/arend] and it is sketched as a smaller circle inside a bigger circle. The dotted arches serve as correspondence lines that show [CLAW/klou] (small circle) is the part of the [EAGLE/arend] (big circle) that is being focused on. A more detailed discussion of the semantic categories will be given in §4.2.1.

Especially important when dealing with constructional profiling is to determine which component structure adds to the content of the composition structure on a conceptual level. Complex constructions must be seen as unique constructions, not only a sum total of the component structures that are combined to construct them (Van Huyssteen 2005: 128). The opposite should also be true, namely that any additional component structures of which the objective/separate conceptual content is restricted/seems meaningless, does *not necessarily* have no effect on the ultimate compositional structure.

Langacker (2013: 187–189) discusses *redundancy* as a way in which extra clues are given about the meaning of an expression – it boils down to the fact that different component structures in a composition structure carries the same or very similar information. There are, for example, in both (5a) and (7) instances of part-whole relationships between the

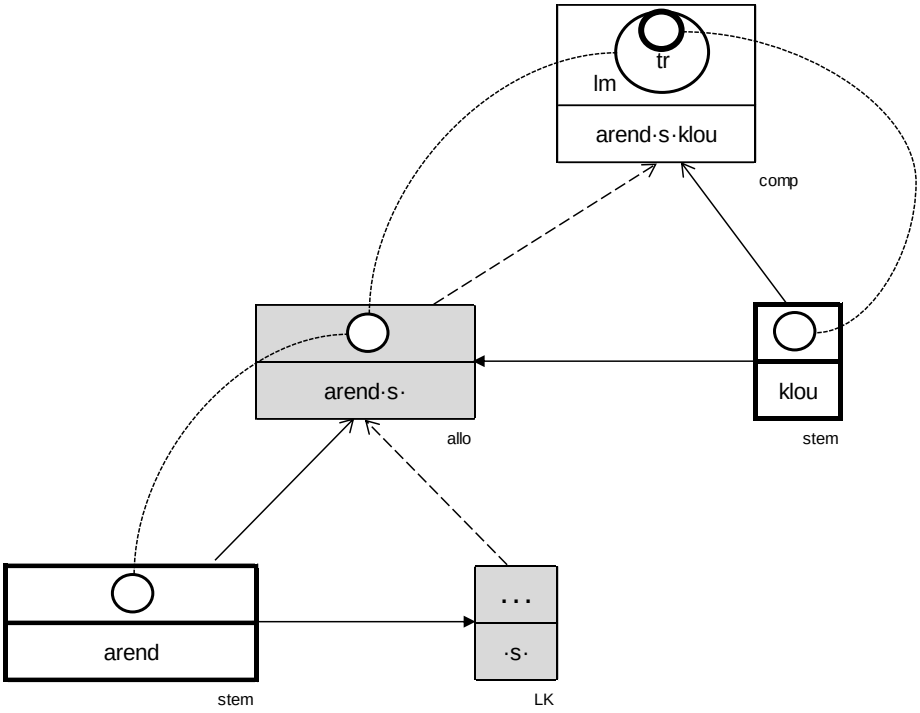

Figure 5: Schema of [AREND·LK·KLOU/arend·s·klou] ‘eagle’s claw’

component structures despite the presence of a linking morpheme in the former and the absence thereof in the latter. The semantic structures of the compounds are similar, but the linking morpheme in the first example is a historical (albeit redundant) clue as to the semantic relationship between the constituents – see Van Tiel *et al*. (2011) for a discussion on the interaction between the loss of the genitive and the use of the *·s·* linking morpheme in Dutch. If seen in this light the linking morpheme does (indirectly) add to the content of the composition structure on a conceptual level.

(7) [OWL·CLAW/uil·klou]
‘owl’s claw’

3.1.2 *Semantic and phonological dependency*
Linking morphemes are highly dependent on both the level of conceptualisation and realisation (Van Huyssteen 2010: 12). They are dependent to such a degree that two independent component structures or one independent and one dependent component structure must combine with the linking morpheme to make it possible to function. In this regard linking morphemes differ from other affixes which combine with only one independent component structure (Langacker 2013: 199–202). Figure 6 and 7 show the schemas of two comparable suffixed forms, (8a) and (8b). In (8a) the independent component structure [WORK/werk] and the dependent component structure [NR/·er] combine with each other; in (8b) two similar components combine, but the linking morpheme is an extra dependent component structure that first combines with the suffix before it combines with the independent component structure (Combrink 1990: 172). This illustrates the general dependency of the linking morpheme and specifically how the linking morpheme first combines with another component structure (in

the case of non-compounds the other component is an affix) before it can be part of the final compositional structure.

(8) a. [WORK·NR/werk·er]
‘worker’
b. [LEARN·LK·NR/leer·d·er]
‘pupil’

The semantic and phonological dependency of the linking morpheme is crucial when formulating a description thereof. The stem allomorph ([EAGLE·LK/arend·s]) in Figure 5 and suffix allomorph ([·LK·NR/·d·er]) in Figure 7 serve as illustrations. In Figure 5 the linking morpheme initially combines with [EAGLE/arend], an independent word/component structure, and it leads to a semantically and phonologically dependent component structure (i.e. a stem allomorph). An additional component structure must combine with this stem allomorph to make it sufficiently independent to function as a complex word. In the case of Figure 7, where [NR/·er] combines with the *·d·* linking morpheme, the effect of the linking morpheme differs slightly. The difference is that the linking morpheme combines with a component structure that was itself dependent and makes it phonologically more complex. The content of the affix is not affected semantically because of the lack of a second independent component structure that would have served as elaboration.

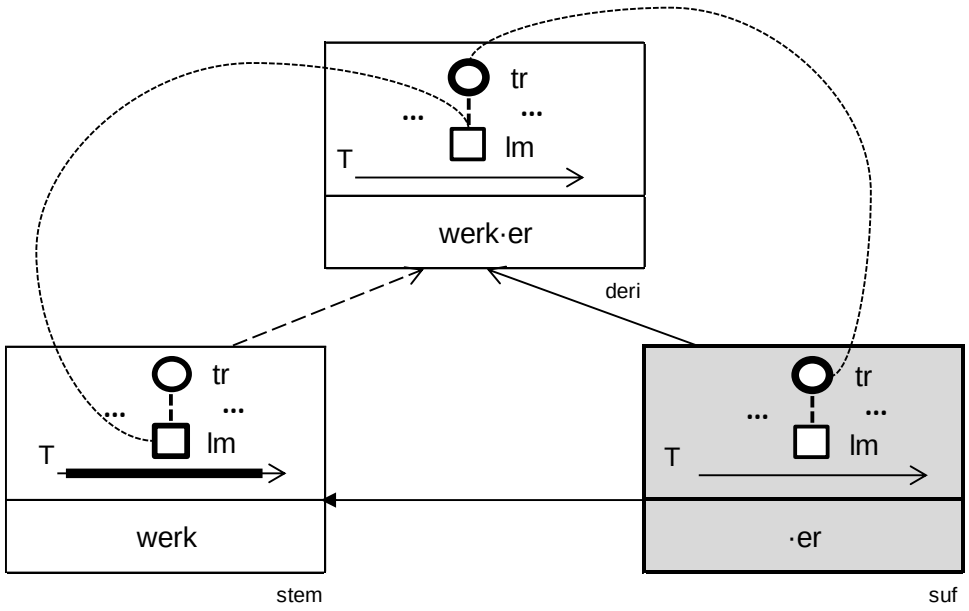

Figure 6: Schema of [WORK·NR/werk·er] ‘worker’

With regard to phonological dependency, a simplified manner in which the realisation pole can be represented, is sketched in Figures 8 and 9. The ‘T’ label (and accompanying arrow) represents a temporal order in which the component structures are realised by a language user (Langacker 2013: 163). The other arrows, like those in Figure 5, point in the direction of the

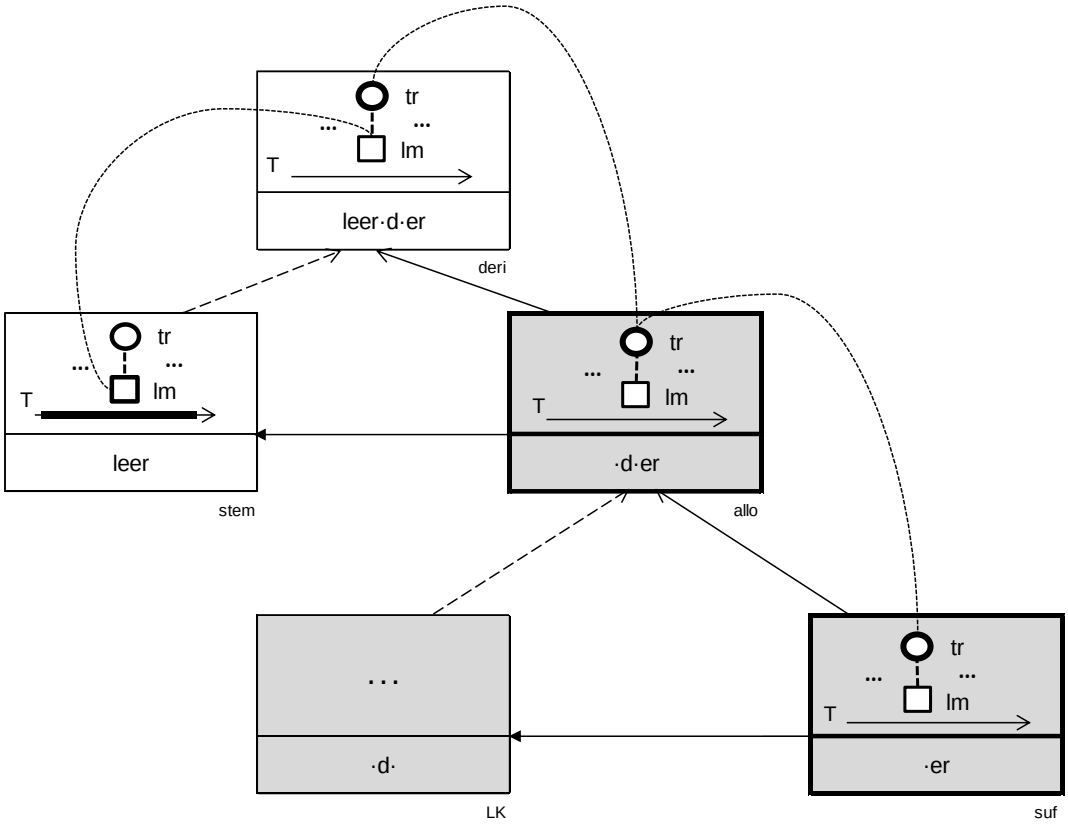

Figure 7: Schema of [LEARN·LK·NR/leer·d·er] ‘pupil’

components that elaborate the profile determinant. The block around [EAGLE/arend] and [LK/·s·] is used to indicate the phonological unit formed by the linking morpheme and the morpheme that it is preceded by (Kempen 1969: 94).

In the case of affixed constructions like [LEARN·LK·NR/leer·d·er], as depicted in Figure 9, the phonological composition is in the opposite direction, since the linking morpheme causes an otherwise cohering morpheme to be non-cohering (Booij 2018). Such a suffix allomorph of the suffix [NR/·er] is sketched in Figure 9. The dotted block around the left-hand constituent and the linking morpheme represents the syllabic relationship between the two components. Labrune (2014) argues that allomorphy and the use of linking morphemes are different processes when it comes to the study of compounds and that they should be studied separately; hence, in this article, they are represented by two separate categorisation networks (Figures 17 and 18).

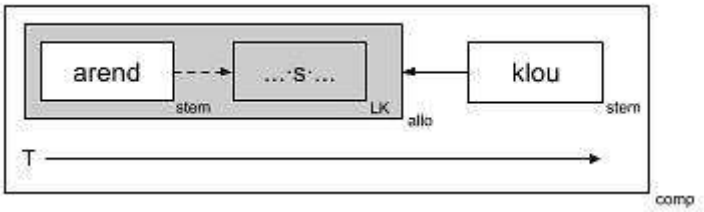

Figure 8: Realisation schema of [EAGLE·LK·CLAW/arend·s·klou] ‘eagle’s claw’

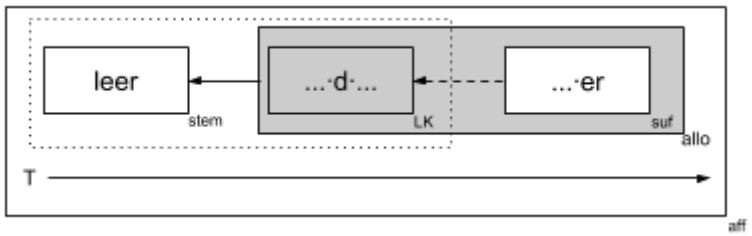

Figure 9: Realisation schema of [LEARN·LK·NR/leer·d·er] ‘pupil’

3.1.3 *Constituency*

Constituency involves the way and order in which composition structures’ components combine. According to Tuggy (2005: 257–258) constituency is mainly about how component structures combine, rather than the order in which they combine. Tree structures/hierarchies can be used to depict different levels of constituency (Langacker 2013: 205–207). In contrast to generative grammar that sees tree structures as ‘autonomous grammatical primitives’ (Langacker 2003: 55–57), CG uses it exclusively as a heuristic aid to help explain the symbolic connections between concepts.

As we have illustrated thus far, linking morphemes in Afrikaans combine with either an independent component structure (like [EAGLE·arend] in [EAGLE·LK·CLAW/arend·s·klou]), or a dependent component structure (like [NR/·er] in [LEARN·LK·NR/leer·d·er]). However, there is considerable uncertainty pertaining to the manner of combination of these two cases.

The *binary branching hypothesis* (BBH) is seen as the solution for the constituency question. The hypothesis was developed in generative grammar to restrict the complexity of grammar and the underlying relationships between components and to keep grammar as unambiguous as possible (Guevara 2007: 1–2). Guevara (2007) compares the BBH with the alternative *simpler syntax hypothesis* (SSH). The SSH, suggested by Culicover and Jackendoff (2005) as a simpler way of analysis, seems to be just as vague and unverified as the BBH. The adoption of one of the hypotheses necessarily excludes the other (Geuvara 2007:3–4, 7). Langacker (2003: 58) states that both methods of constituency are valid, and that the crux of the matter is to clearly show the relationship between the constituents. It is nevertheless clear that more research should be done on this subject. For the purposes of this article the BBH is assumed in accordance with the current tradition in Afrikaans morphology (Combrink 1990; Kempen 1969), where both left and right branching are accepted.

3.2 *Entrenchment*

Entrenchment pertains to the ease with which a certain constructional schema is activated, whether as an entrenched constructional schema with unit status, or for the formation of new constructional schemas. Generality and productivity are the two components of entrenchment that warrant discussion.

3.2.1 *Generality*

Generality can have two meanings: firstly, with regard to the nature of a constructional schema; secondly, with regard to the distribution thereof. In terms of the nature of a constructional schema, (4c) (repeated here for convenience of reference) is more general than (4b), which is more general than (4a), since each successive constructional schema accommodates more possibilities.

(4) a. [DUCK·LK·CAGE/eend·e·hok]
‘duck’s cage’
b. [DUCK·LK·THING/eend·e·...]
‘duck·LK·THING’ (any compound with left-hand constituent *eend*, followed by a linking morpheme and another noun, e.g. *eend·e·plaas* ‘duck farm’, *eend·e·boerdery* ‘duck farming’, and *eend·e·dam* ‘dam for ducks’.)
c. [THING·LK·THING/...$_1$·e·...$_2$]
‘THING·LK·THING’ (any noun-noun compound with a linking morpheme)

However, in terms of the distribution of the constructional schema, (9a) will be more general than (4c) because the latter schema is applicable to a more restricted part of Afrikaans complex words. The schema in (9a) is the default schema for the formation of noun-noun compounds in Afrikaans, whereas (4c) applies to a smaller section of noun-noun compounds i.e. those that also take linking morphemes; hence, (9a) is more general than (4c). Van Huyssteen (2005: 133) points to the fact that generality is not a precondition for a constructional schema – constructional schemas that are not very general could still be productive.[3] In this article, the use of generality will be used specifically in this sense.

(9) a. [THING·THING/x·y]
‘THING·THING’

3.2.2 *Productivity*
Productivity becomes relevant when one asks to what extent a constructional schema is available for fashioning new constructions. (10a) is an example of a constructional schema that is highly productive, even though not general in the first sense of the meaning of ‘general’. Complex constructions like (10b) and (10c) are formed on the basis of this productive constructional schema. With (10b) and (10c) as analogues examples, one can similarly construe (10d) as a novel compound. Generality and productivity are characteristics that aid in the expansion of schemas, and ultimately add to the expansion of categorisation networks. A constructional schema like that of the linking morpheme, is similarly not as general, but still productive, as will be illustrated subsequently when we postulate categorisation networks for the linking morpheme.

(10) a. [PROCESS·NR·LK·THING/x·er·s·y]
b. [WORK·NR·LK·UNION/werk·er·s·bond]
‘worker’s union’
c. [NOMAD·NR·LK·LIFE/swerw·er·s·lewe]
‘nomad’s life’
d. (SKATE·NR·LK·TOURNAMENT/skaats·er·s·toernooi)
‘skater’s tournament’

[3] This hypothesis should be investigated further specifically with reference to the discussion on rule-based and analogy-based morphology.

4. Categorisation networks for the linking morpheme

To construct a categorisation network for the linking morpheme in Afrikaans, constructional schemas on the realisation as well as conceptualisation pole are required. These schemas should be based preferably on usage-based data, since natural, real-world data forms an integral part of CG research (Van Huyssteen 2005: 135). For this purpose, a variety of data sources were used for a usage-based representation of the linking morpheme in Afrikaans.

For compounds, we use the *AuCoPro*[4] data set, comprising of 25,266 split Afrikaans compounds and 3,828 semantically annotated compounds. Only annotated compounds that contained linking morphemes were considered, for a total of 288 compounds. For affixed words, the *NCHLT*[5] corpus was used, comprising a total of 64,257 tokens; all affixed forms containing the 'MLG' tag (*Morpheme>Linking>Germanic*) were extracted, for a total of 72 words as our non-compound data set. The quantitative summary of the data sets can be seen in Table 1.

Because of the relatively small size of the data sets, we supplemented our data with three other sources, namely the data-based studies of Kempen (1969) and Combrink (1990), and the rules for the use of the linking morpheme (specifically for the *·s·* and hyphen) in Afrikaans prescribed in the official Afrikaans orthography (Taalkommissie 2017).

Table 1: Summary of the data sets

Data set	Number of complex words
Compound data set	288
Non-compound data set	72
	360

4.1 *Description: Realisation pole*

4.1.1 *Linking morphemes in compounds*

The distribution of linking morphemes in this study is summarised in Table 2. In the data set consisting of compounds, the *·s·* linking morpheme and the hyphen are clearly the linking morphemes that are used the most (with a combined total of 268 (93%) out of the possible 288 compounds). This confirms Combrink's (1990: 272) assertion that the *·s·* is the most frequently used linking morpheme in Afrikaans.

[4] For more information on the project, see www.sourceforge.net/projects/aucopro/ and www.gerhard.pro/aucopro/.

[5] For more information on the project, see rma.nwu.ac.za.

Based on the data in the compound data set, it is possible to construe a categorisation network of the linking morpheme in Afrikaans compounds. The darker the outline of a node, the more compounds appeared with the appropriate linking morpheme and the more prototypical they are, as illustrated for the *·s·* linking morpheme and the hyphen. Figure 10 provides the complete realisation pole of the linking morpheme in Afrikaans compounds that featured in the sources used.

Table 2: Quantitative analysis of the linking morpheme distribution in the compound data set

LK	Example	Count
·s·	*mag·s·balans* (‘power balance’)	164
·-·	*rune·-·inskripsie* (‘runic inscription’)	104
·e·	*neut·e·dop* (‘nut shell’)	14
·ns·	*lewe·ns·probleme* (‘life problems’)	4
·er·	*kind·er·naam* (‘child’s name’)	1
·n·	*lewe·n·styl* (‘life style’)	1
		288

The prominence of *·s·* linking morpheme and the hyphen is confirmed by the fact that specific spelling rules[6] exist for them in the official Afrikaans orthography (Taalkommissie 2017), but not for any other linking morphemes. The effect of these rules is that they afford these two linking morphemes a prime position when new complex words are formed in the language. Specifically, the hyphen as an orthographical morpheme plays an important role with regard to readability and semantics (Taalkommissie 2017: 77), which makes it compulsory in certain contexts; occasionally without consideration of semantic factors, and occasionally without consideration of readability.

The *·er·* linking morpheme, *·n·* linking morpheme, and *·ns·* linking morpheme (occurring together in only six compounds in the data set), seem highly exceptional. The *·n·* linking morpheme is related to the Dutch infinitive/gerund form of a verb. The *·ns·* linking morpheme is seen as a combination of the infinitive/gerund form and the Afrikaans *·s·* linking morpheme; from the data (see Table 3), it seems that *·ns·* combines exclusively with *lewe* ‘life’ as left-hand component in compound, e.g. *lewe·ns·vreugde* ‘life’s joy = joy of life’. The *·er·* linking morpheme (that only features in (11a)) seems to attach to a select few constituents, which include (11b), (11c), and (11d) (Combrink 1990: 249).

[6] It is accepted a priori that the orthographical rules of a language and its morphology influences one another – see Schäfer & Pankratz (2018:333) where reference is made to the influence of Dutch spelling reforms on language users’ interpretation of compounds.

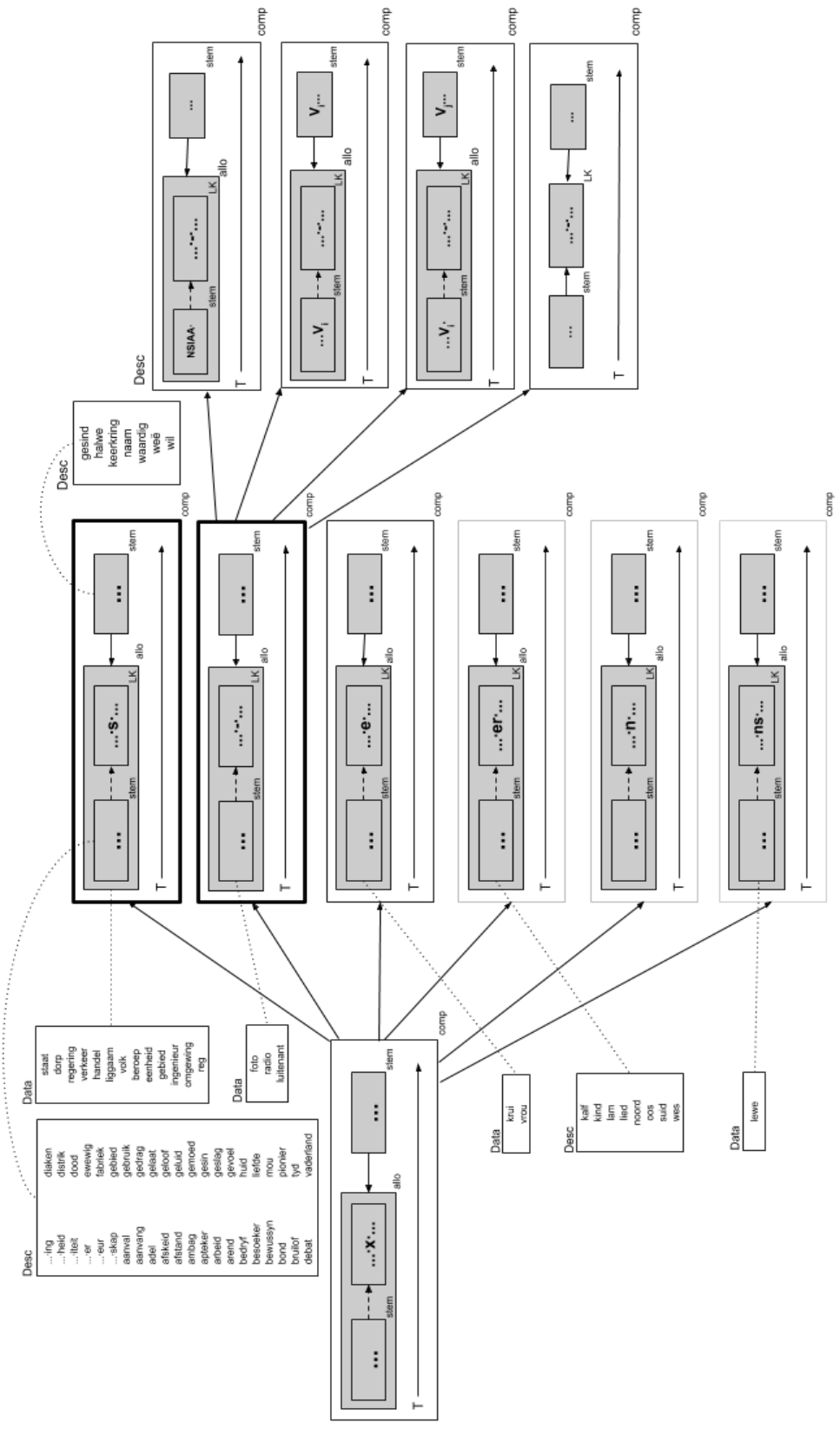

Figure 10: Categorisation network for the realisation pole for the linking morpheme in Afrikaans compounds (Full-scale version available at http://gerhard.pro/publications.)

(11) a. [CHILD·LK·NAME/kinder·er·naam]
‘child’s name’
b. [CHILD/kind]
‘child’
c. [CALF/kalf]
‘calf’
d. [SOUTH/suid]
‘south’

When postulating a categorisation network, one must include both lower-level (less general) schemas, and more general schemas. The left-hand constituents that appeared three times or more in the compound data set (three times is sufficient in the light of the size of the data set) are listed in Table 3.

Table 3: Left-hand constituents that appeared three or more times in the compound data sets (with the specific linking morpheme they appear with)

Constituent	LK	Count	Constituent	LK	Count
staat (‘state’)	*·s·*	8	*beroep* (‘occupation’)	*·s·*	3
dorp (‘town’)	*·s·*	5	*eenheid* (‘unit’)	*·s·*	3
foto (‘photo’)	·-·	5	*gebied* (‘area’)	*·s·*	3
regering (‘government’)	*·s·*	5	*ingenieur* (‘engineer’)	*·s·*	3
verkeer (‘traffic’)	*·s·*	5	*krui* (‘herb’)	*·e·*	3
handel (‘commerce’)	*·s·*	4	*luitenant* (‘lieutenant’)	·-·	3
lewe (‘life’)	*·ns·*	4	*omgewing* (‘environment’)	*·s·*	3
liggaam (‘body’)	*·s·*	4	*reg* (‘law’)	*·s·*	3
radio (‘radio’)	·-·	4	*vrou* (‘woman’)	*·e·*	3

Twelve of the eighteen left-hand constituents in the table combined with the *·s·* linking morpheme, three with a hyphen, two with the *·e·* linking morpheme, and one with *·ns·*. With a

frequency of eight, it is clear that [STATE/staat] calls for the use of the *·s·* linking morpheme when used in complex words; Combrink (1990) refers to such constituents as 'linking morpheme attracting stems', i.e. constituents that usually require a linking morpheme when functioning as left-hand constituent of a compound. The same applies to [LIFE/lewe], which clearly requires the *·ns·* linking morpheme. The three component structures that seem to demand hyphens when they function as the left-hand components in compositions structures will be discussed later in this section.

Instead of making individual constructional schemas for each complex word, the constituents that feature the most in the data set are included as a node, labelled 'Data', in Figure 10. Every constituent is connected to the relevant linking morpheme constructional schema by a dotted line. The blocks marked with the label 'Desc' in Figure 10 (and all subsequent figures) contain specific component structures that co-occur with the specific linking morpheme, as identified in linguistic descriptions (hence 'Desc'; specifically, Kempen 1969: 103–105; Combrink 1990: 247–250; Taalkommissie 2017). Included in the 'Desc' category is (on the left-hand side of Figure 10) complex words ending in affixes that include [NR/·er] and [NR/·skap] that attract the use of the *·s·* linking morpheme when they are used as the left-hand constituent, and the right-hand affixoids like *·gesind* and *·halwe* which behave identically when used as the right-hand constituent. The use of the *·s·* linking morpheme in these cases is governed by rule 19.14 and 19.15 in Taalkommissie (2017).

Neither Kempen (1969) nor Combrink (1990) could be used for the constructional subschema related to the hyphen, since neither of them consider hyphens as linking morphemes. Therefore, the rules postulated by Taalkommissie (2017) form the basis of this subschema. Three of these rules are relevant to compounds and can be summarised as follows:

(12) a. When a number, symbol, initialism, abbreviation or acronym is used as a component of a compound, then it must be separated from the rest of the compound with a hyphen, e.g. *BTW-heffing* 'VAT levy' (rule 7.1, 12.8 and 12.9).

b. In a compound where a cluster of identical or different vowels is present, the word can be interpreted incorrectly, and the use of a hyphen is then compulsory, e.g. *foto-omslag* 'photo cover', and *radio-ingenieur* 'radio engineer' (rule 12.1).

c. If there is a specific semantic relationship between the components in the compound (which includes a coordinative relationship), a hyphen must be placed between the components, e.g. *konkaaf-konveks* 'concavo-convex' (rule 12.7).

These orthographic rules are also represented in Figure 10. The label 'NSIAA' is used to refer collectively to a number, symbol, initialism, abbreviation and acronym (see example in (12a)). The 'V' label stands for a vowel letter that is the last letter of the first component and the first letter of the second component. The vowel letters in the second block under the 'NSIAA' label in Figure 10 are identical (both indicated by V_i), while the vowel letters in the third block are not (represented by V_i and V_j respectively; see examples in (12b)). The rule related to a coordinative relationship between the components is illustrated in the bottom rectangle (see example in (12c)). In Figure 10 the constructional schemas for the hyphen rules are present in combination with the schemas present in the data, even though examples of all the hyphen-related rules are not present in the data. The *·s·* linking morpheme and the hyphen are shown

to be the most productive linking morphemes in Afrikaans. In contrast herewith, it seems that the *·ns·* linking morpheme only appears with (15d), maybe even exclusively.

4.1.2 *Linking morphemes in non-compounds*

It must be reiterated that linking morphemes that appear in affixed forms attach to the affix, as was mentioned in §3.1.2 and discussed in Combrink (1990: 272). The use of linking morphemes in affixation has been studied by making use of the non-compound data set, quantitatively summarised in Table 4.

Table 4: Quantitative analysis of the linking morpheme in the non-compound data set

LK	Example	Count
·d·	*uitvoer·d·er* (export·LK·NMLZ; 'exporter')	23
·e·	*feit·e·lik* (fact·LK·ADJZ; 'actual(ly); factual(ly)')	16
·n·	*rede·n·eer* (reason·LK·VBLZ; 'argue')	12
·en·	*wes·en·lik* (be·LK·ADJZ; 'essential')	13
·-·	*nie·-·ingesetene* (not·LK·resident; 'non-resident')	4
·er·	*kind·er·s* (child·LK·PL; 'children')	4
		72

The *·d·* linking morpheme features most in affixed forms, while the schwa (and variations thereof like *·en·* and *·er·*) occur second most. The distribution of the *·e·* linking morpheme, *·en·* linking morpheme, and *·n·* linking morpheme are quite equal, whereas the hyphen and *·er·* linking morpheme are the least likely to occur in affixed forms. The *·er·* linking morpheme only appears when *kind* 'child' is pluralised, as shown in (13a). Other examples of non-compounds that make use of the *·er·* linking morpheme include (13b) and (13c), as identified by Combrink (1990: 249).

(13) a. [CHILD·LK·PL/kind·er·s]
‘children’
b. [EAST·LK·NR/Oost·er·ling]
‘Easterner’
c. [CALF·LK·ADJR/kalw·er·agtig]
‘calf-like’

From the available data it is apparent that a word that ends on *·eer*, as well as the *·er·* affix (whether as [CMP/·er] or [NR/·er]) requires the use of the *·d·* linking morpheme. The use of the *·e·* linking morpheme is less dependent on the syllable that precedes it and more on the suffix used, specifically [ADJR/·lik] ‘like’. These phonological regions, similar to the approach taken to compounds in § 4.1.1, are represented in the constructional schemas in Figure 11. The differences concerning sketching conventions of the affixed forms from compounds are limited to the labels: the “suf” label indicates suffixes, the ‘pref’ label indicates prefixes, and the ‘aff’ label indicates any affixed form.

As was the case for compounds, the categorisation network for linking morphemes in non-compounds is supplemented using linguistic descriptions. Combrink (1990: 246–247, 249–250) identifies a single prefix that occur with a linking morpheme, viz. [ADJR/a·] in a case like (17a). Similar examples do not occur in the non-compound data set. According to Combrink (1990: 259) the requirements for the use of this specific *·n·* linking morpheme are that: (i) the component structure that it has to combine with has to start with a vowel or an <h> (e.g. (14a) and (14b)); and (ii) it has to have a Greek/Classical origin. In other words, in order to increase the valency of the prefix, another morpheme (*·n·*) is required to create an allomorph that could combine with another constituent.

(14) a. [NEG·LK·ORGANIC/a·n·organies]
‘inorganic’
b. [NEG·LK·HYDRIDE/a·n·hidried]
‘anhydride’

Combrink (1990: 250) also identifies a number of suffixes that regularly combine with linking morphemes. These are [NR/·ling] as in (15a), [ADJR/·loos] as in (15b), [NR/·nis] as in (15c), [ADJR/·rig] as in (15d), and [NR/·ry] as in (15e).

(15) a. [DROWN·LK·NR/drenk·e·ling]
‘drowning person’
b. [SENSE·LK·ADJR/sinn·e·loos]
‘senseless’
c. [CONFESS·LK·NR/belyd·e·nis]
‘confession’
d. [BLOOD·LK·ADJ/bloed·e·rig]
‘bloody’
e. [WALK·LK·NR/stapp·e·ry]
‘walking/pedestrianism’

From the data it is clear that the hyphen is used as a linking morpheme that combines only with the prefix [NIE/nie] ‘not’. However, despite the fact that similar examples are not present in the non-compound data set, provision is made in the categorisation network for hyphens in cases like *sebra-agtig* ‘zebra-like’, as well as for numerous prefixes (e.g. *bi-elektries* ‘bi-electric’) and combining forms (e.g. *gastro-enteritis* ‘gastro-enteritis’) (Taalkommissie, 2017: 27–28).

These linking morphemes are featured in Figure 11 together with the other more prototypical linking morpheme constructional schema, and are connected with correspondence lines to indicate that they are equal constructional schemas.
Seeing that numerous phonological aspects play a significant role when affixation is concerned, the realisation pole of the linking morpheme is more complex than in the case of compounds. A lot more detail was added to the realised structure of non-compounds in Figure 11, improving on previous linguistic descriptions of linking morphemes in non-compounds.

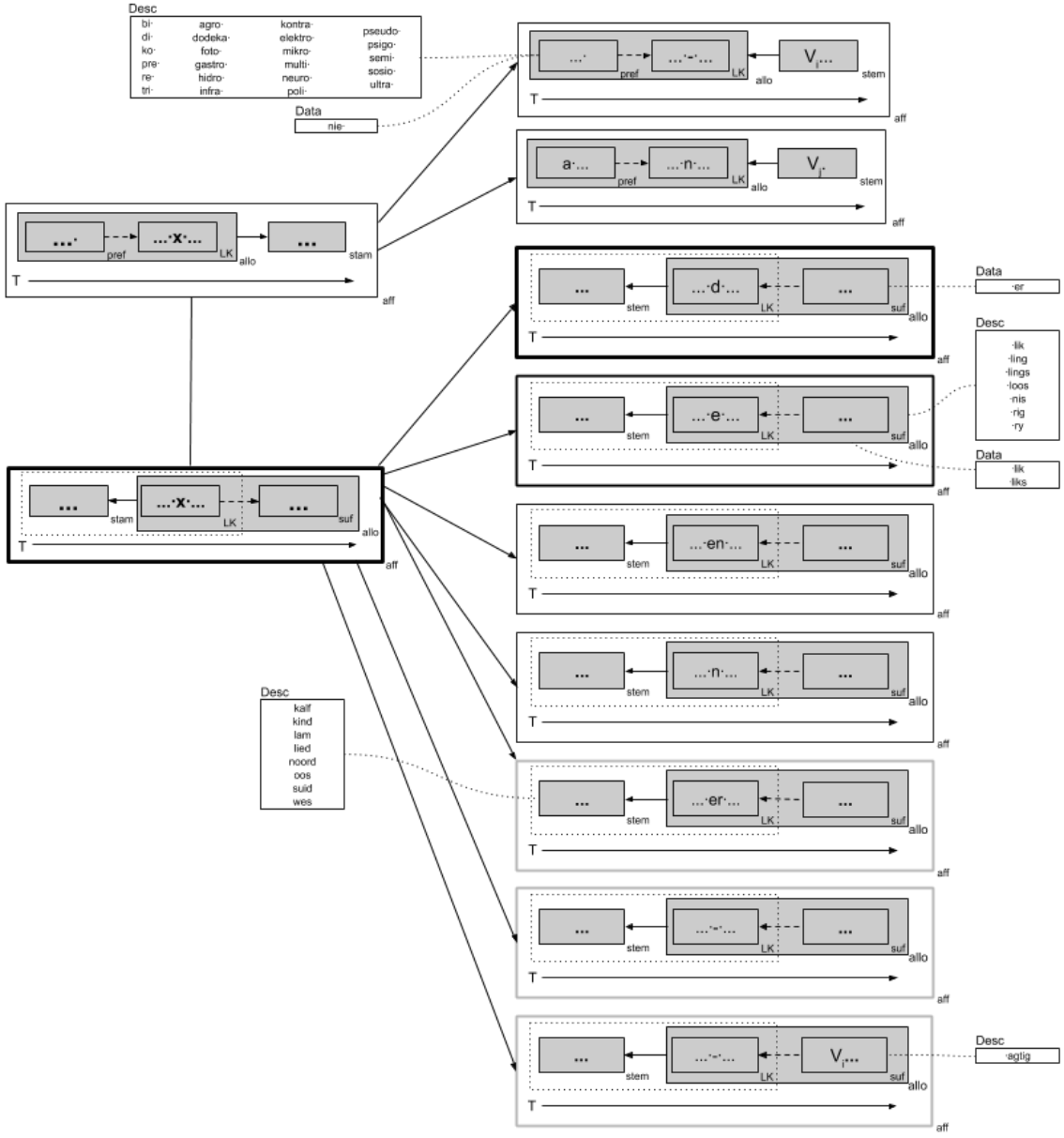

Figure 11: Categorisation network for the realisation pole for the linking morpheme in Afrikaans non-compounds

4.2 *Description: Conceptual pole*

A categorisation network consists of not only a realisation pole, but also a conceptual pole. A discussion of the semantic contexts where linking morphemes tend to appear, and the possibility of the linking morpheme adding any semantic value to the complex morphological construction, is relevant. Since the linking morpheme is prototypically semantically empty, Figure 12 represents the conceptual constructional schema of a prototypical linking morpheme in any Afrikaans complex word – compounds and non-compounds. The shading and ellipse represent the highly schematic semantic content of the linking morpheme. The possibility of elaborating this basic schema with more complex conceptual schemas (especially for compounds), will be discussed in the next sub-section.

Figure 12: Primary conceptual constructional schema of the linking morpheme in Afrikaans

4.2.1 *Linking morphemes in compounds*

The compound data set has been semantically annotated in accordance with the protocol in Verhoeven et al. (2014: 28–50). Six main semantic categories in which noun-noun compounds could be categorised are listed in the protocol. In Table 5 the distribution of the 288 noun-noun compounds in the compound data set is summarised and categorised into these six main categories. Due to the sparseness of the data, conclusions could only be made about the hyphen and the *·s·* linking morpheme.

Table 5: Frequency matrix of the compound data set's semantic categories

	BE	**HAVE**	**IN**	**ACTOR**	**INSTR**	**ABOUT**	**Count**
·s·	4	45	13	9	47	46	164
·-·	49	18	5	4	15	13	104
·e·	3	7	0	3	0	1	14
·ns·	0	1	0	0	0	3	4
·er·	0	1	0	0	0	0	1
·n·	0	0	0	0	0	1	1
Count	56	72	18	16	62	64	288

The first observation from the table is the nearly even distribution of the *·s·* linking morpheme in three of the six categories (HAVE, INSTR, and ABOUT), as illustrated by examples (16a) to (16c). The *·s·* linking morpheme is also represented in the three other categories (ABOUT, BE and IN), which suggests that the *·s·* linking morpheme's conceptual import is varied – if not vague – due to semantic bleaching and over-use. Accompanying (16a)–(16c) are schemas (Figures 13, 14, and 15) representing the conceptual meaning of the categories, with 'tr' labelling the head and "lm" labelling the non-head of the compound.

(16) a. HAVE: [EAGLE·LK·EYE/arend·s·oog] ≈ [EAGLE HAVE EYE]

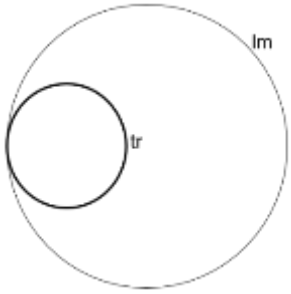

Figure 13: Construal schema of HAVE relationship

In Figure 13 it is shown how the trajectory [EYE/oog] is part of a bigger whole [EAGLE/arend] when a compound is categorised as representing a HAVE relationship.

b. INSTR: [COMBUSTION·LK·PROCESS/ontbranding·s·proses] ≈ [PROCESS IN WHICH COMBUSTION, AS A NON-LIVING ENTITY, IS TAKING PART]

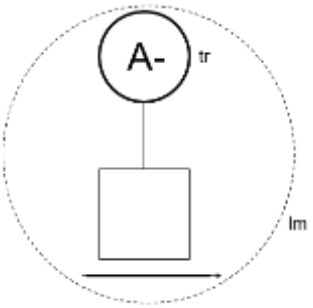

Figure 14: Construal schema of INSTR relationship

The 'A-' label in Figure 14 serves to represent a non-living entity [COMBUSTION/ontbranding] taking part in a process [PROCESS/proses] (the process being represented by the timeline inside the broken-line circle and the square connected to the 'A'- circle).

c. ABOUT: [STABILITY·LK·PROGRAMME/stabiliteit·s·program] ≈ [PROGRAMME ABOUTSTABILITY]

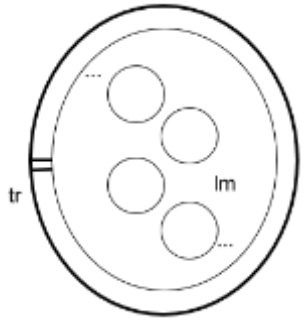

Figure 15: Construal schema of ABOUT relationship

The multiple smaller circles in Figure 15 serve to symbolise the different aspects of the landmark [STABILITY/stabiliteit] that characterises the trajectory [PROGRAMME/program]. In this example 'stability', and that which it entails, forms the base of the relevant 'programme'. However, it is not the trajectory, since the focus is still on the 'programme'.

The hyphen is most often used when there is an IS relationship between the components. For example, [OFFICER·LK·VETERINARIAN/offisier·-·veearts] 'veterinary officer' could be paraphrased as 'a veterinary officer is a veterinarian that IS also an officer'. In this case a conceptual association is apparent – the hyphen serves as an indication of a coordinative relationship between the components (see (12c)), where the two components are both equally central to the meaning of the compound. One could say two trajectors are present, represented by the 'tr' labels in Figure 16. The double line between the circles indicates an equal semantic relationship between the component structures.

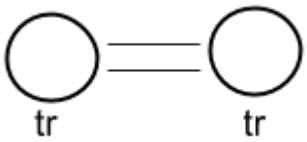

Figure 16: Constructional schema of the coordinative semantic relationship

Of the remaining 55 compounds with hyphens, 52 of the cases use a hyphen to avoid vowel clusters (see (12b)). In as such, these hyphens have a pure orthographical function to prevent misinterpretation of the construction by the reader, without any conceptual import.

4.2.2 *Linking morphemes in affixed forms*

No evidence could be found (in the literature or data) that would indicate that the linking morpheme adds any semantic dimension (regardless the schematicity thereof) to the meaning of complex words like [LAW·LK·ADJR·NR/wett·e·loos·heid] 'lawlessness', or [MANAGE·LK·NR/bestuur·d·er] 'manager'. This aspect coincides strongly with the presence of the *·s·* linking morpheme in compounds after specific derivational affixes and before certain stems (Taalkommissie 2017: 168–169). The implication of this lack of semantic input entails that linking morphemes that combine with affixes, is schematic to the extent that it is semantically totally void. However and importantly, it fulfils an important function in creating allomorphs, in order for such allomorphs to combine with other stems/words (in compounds), or affixes (in non-compounds). The highly schematic constructional schema in Figure 15, which represents the core of the linking morpheme in Afrikaans, is therefore also applicable to affixation.

5. Summary

The primary aim of this article was to construct a comprehensive, theoretically unified description of the linking morpheme in Afrikaans – something that has not been done before. The first step was to collect data for the construal of constructional schemas in the categorisation network. Two annotated data sets, namely a compound set (n=288), and a non-compound set (n=72), were used to postulate these constructional schemas. The data sets were supplemented by existing linguistic descriptions, notably those of Kempen (1969), Combrink (1990), and the Taalkommissie (2017).

In conclusion we can now combine the constructional schemas on the realisation and conceptual poles to form complete categorisation networks; see Figure 17 and Figure 18. Note the added correspondence lines between the schemas on the conceptual and realisation pole. The linking morphemes that appear in compounds are connected to their corresponding conceptual input in Figure 17, as has also been done in Figure 18 for non-compounds. From both categorisation networks one could conclude that the linking morpheme in Afrikaans has extremely schematic conceptual input. Nonetheless, in some cases (like that of the hyphen) we can still postulate conceptual import, as is exemplified by the diagrams in the top left-hand part of Figure 17.

With regard to our secondary aim, i.e. to demonstrate how CG (in combination with CM) can be used as a descriptive framework for morphological constructions, we hope to have shown that various tools from CG could aid enormously in our understanding of morphological constructions. Constructs like composition and entrenchment afford us the opportunity to focus on some of the finer-grained details of the realisation, conceptualisation and distribution of morphological constructions. Categorisation networks not only provide (visually) informative overviews of constructions, but also provides us with the opportunity to adequately account for inheritance relations, deviations from prototypical schemas, etc.

Regarding our last aim, namely to provide a CG perspective on the morpheme status of the linking morpheme, we have argued that it is unproblematic to consider it as a morpheme, albeit one with a highly schematic conceptual import. We therefore concur with Kardela (2014: 25) when he concludes that

> [...] linguistic structure is expected to be cross-cut so that each, even the smallest meaningful linguistic element, becomes a well-structured linguistic unit which is held to involve all "levels" of conceptual organization, including the unit's phonological structure, its morphology, syntax, semantics and pragmatics.

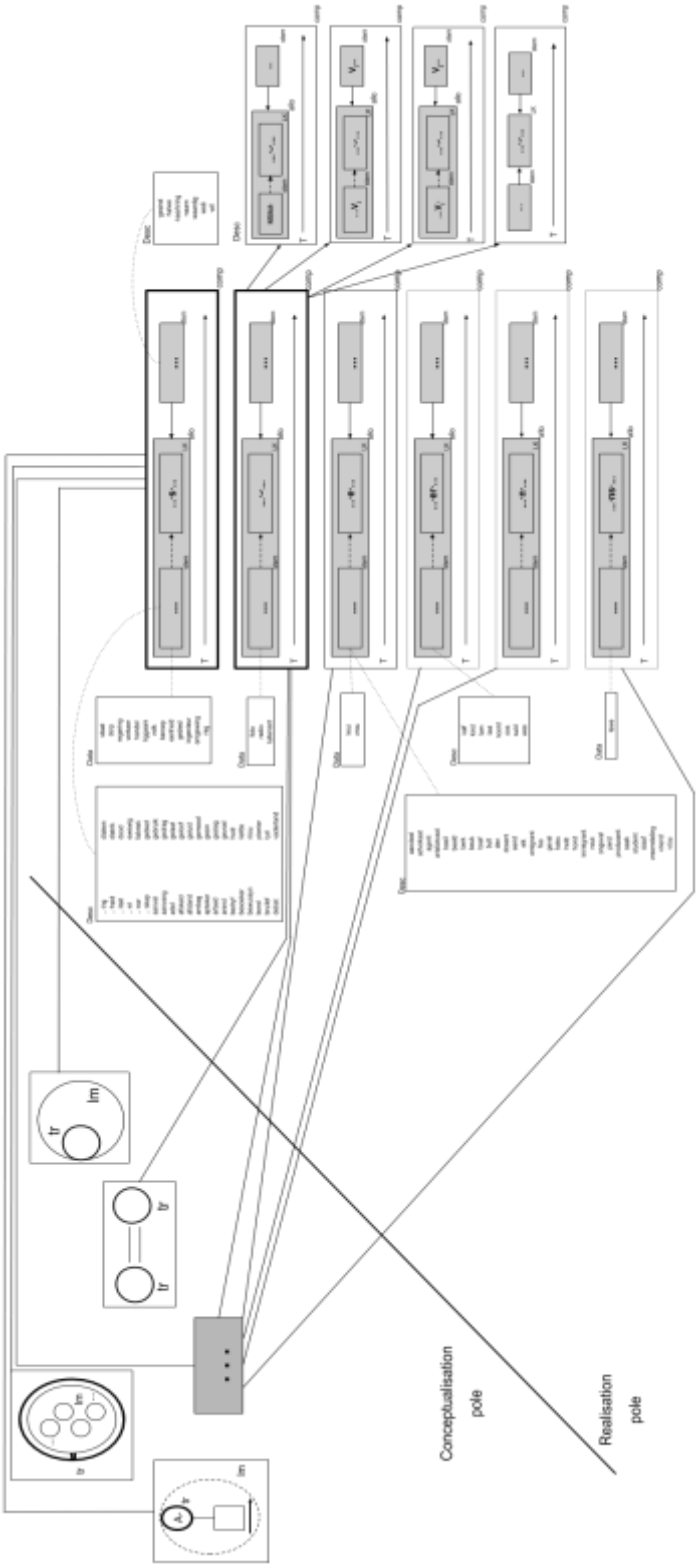

Figure 17: Categorisation network of the linking morpheme in Afrikaans compounds (Full-scale version available at http://gerhard.pro/publications.)

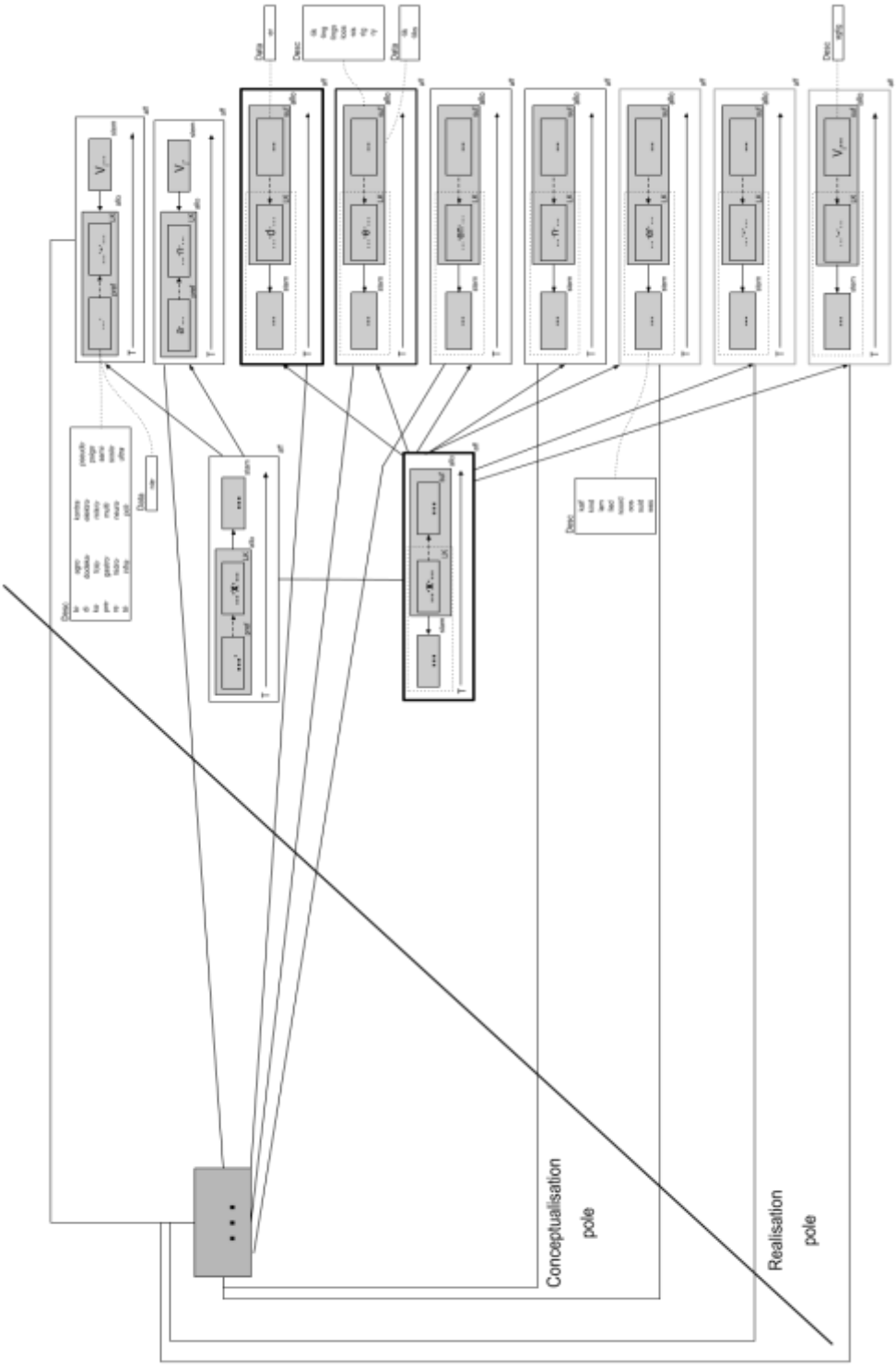

Figure 18: Categorisation network of the linking morpheme in Afrikaans non-compounds (Full-scale version available at http://gerhard.pro/publications.)

Abbreviations

aff	affix(es); affixation
allo	allomorph
AuCoPro	Automatic Compound Processing
BBH	binary branching hypothesis
CG	cognitive grammar
comp	compound(ing)
Desc	Linguistic descriptions, specifically Kempen (1960), Combrink (1990) & Taalkommissie (2017)
LK	linking morpheme
lm	landmark
MLG	morpheme linking Germanic
NCHLT	National Centre for Human Language Technologies
NSIAA	number, symbol, initialism, abbreviation and acronym
POS	part of speech
pref	prefix
SSH	simpler syntax hypothesis
suf	suffix
tr	trajectory

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