

Your *ns* are numbered! On Linking morphemes in Dutch

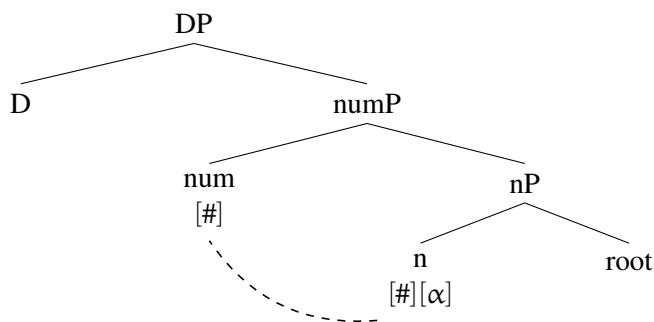
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Abstract. The expression of number (#) within the noun phrase has been argued to vary between a high (*num*) and a low position, which Kramer (2014) associates with *n*, providing the root with a syntactic category. We argue that Linking Morphemes (L) in Dutch provide new evidence for such a split, and moreover, for a low expression of # in a language that is normally considered to have high #. By taking L to instantiate *n*, the presence or absence of L can be taken as a diagnostic of the size of non-head elements. Combined with recent work on Germanic compounds (Harðarson 2016, De Belder 2017) this makes a prediction about the order of modifiers in Dutch compounds, which we show is borne out.

Keywords: compounding, linking morphemes, Dutch, bracketing restrictions, number marking, split number

1. Introduction. This paper looks at the distribution of number in Dutch. Extensive typological work has shown that languages differ in where number (#) is expressed (Acquaviva 2008, Lowenstamm 2007, Kramer 2016, i.a.) where languages show at least two possible positions within the extended NP, (1): A higher position which is typically associated with *num*, and a lower position which has been associated with *n*. Dutch is usually taken to only have high expression of #, i.e. on *num*.

(1)



An example of a regular, high, plural in Dutch is given in (2b), which gives a plural reading of the noun it attaches to. In Dutch compounds, (2c), the head of the compound and the non-head element are sometimes separated by a Linking Morpheme (L) (Haeseryn et al. 1997, De Haas & Trommelen 1993).¹

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¹These are typically referred to as *Linking Phonemes*, however, as will be clear from our discussion, we believe *Linking Morpheme* to be a more accurately reflects the nature of the elements in question.

- | | | | | | | |
|-----|----|----------------------|----|-----------------------------|----|--------------------------------------|
| (2) | a. | hond
dog
'dog' | b. | hond-en
dog-PL
'dogs' | c. | hond-s-dol
dog-L-crazy
'rabid' |
|-----|----|----------------------|----|-----------------------------|----|--------------------------------------|

In section 2, we argue based on comparison of relevant properties of plural markers and L with properties of high and low #, that these L are an instantiation of a low expression of #.

In section 3, we provide an analysis for Dutch L drawing on the works of De Belder (2013, 2017) and Harðarson (2016, 2017). We argue that compounds are formed by merging non-head elements directly with the head of the compound. The # feature on the non-head element receives a default value of [-SG], whereas the # feature of the head receives its value from a higher *num* head via Agree.

Finally, in section 4, we show that by taking L as an case of *n*-, it provides a diagnostic for the size of non-head elements in compounds. Following recent work on Germanic compounds (Harðarson 2016, 2017, De Belder 2017) we provide evidence that bracketing restrictions occur when two non-head elements do not match in size, i.e. when one bears L and the other does not, indicating that elements containing L must be structurally peripheral to elements without L.

Thus, our research provides first of all evidence for features on *n* in Dutch, more specifically number features. Second, we provide a new diagnostic for the size of non-head elements and their subsequent attachment site in compounds.

2. Dutch Ls and *n*-#. There are a number of properties that distinguish between *num*-# and *n*-# (see e.g. Acquaviva 2008:11–49, Kramer 2016:534–539), these properties include selectional restrictions, determinism, appearance in derivational environments, and in case of a split number system, double plural marking. In this section we compare linkers and plural markers in terms of these properties, showing that L patterns with *n*-. Note that the analysis of *n*-# relies on a constellation of properties. No single property is sufficient to analyze *n*-# (see e.g. Kramer 2017).

Before moving on to the comparison of L and *n*-, there are two general notes about Dutch compounds that must be kept in mind. First of all, in the absence of L, the non-head elements in Dutch compounds do not appear to be subject to any categorical restrictions, but can be of any category. This is shown in (3) below, where in (3a) the non-head is a preposition, in (3b) the non-head is verbal, and in (3c) the non-head is a numeral. In the presence of L, however, the non-head elements are unambiguously nominal (see e.g. De Belder 2013, 2017).

- | | | | | | | |
|-----|----|--|----|---|----|--------------------------------------|
| (3) | a. | mee-moeder
with-mother
'co-mother' | b. | lees-moeder
read-mother
'mother who reads a
lot' | c. | drie-luik
three-lock
'trptych' |
|-----|----|--|----|---|----|--------------------------------------|

Second of all, the set of L in Dutch is (roughly) the same as the set of plural affixes (e.g. *-en*, *-s*), (Neijt & Schreuder 2009), exemplified in (4), (5).² However, L for any given noun need not be the same as its plural affix, (6).

²L has also been argued to stem from a case marker (Booij 2001) or noun class marking (De Belder 2013).

- (4) a. varken pig ‘pig’ b. varken-s pig-PL ‘pigs’ c. varken-s-hok pig-L-pen ‘pig’s pen’ d. varken-s-voer pig-L-food ‘pig food’
- (5) a. kat cat ‘cat’ b. katt-en cat-PL ‘cats’ c. katt-en-luik cat-L-shutter ‘cat flap’ d. katt-en-droll-en cat-L-turd-PL ‘cat turds’
- (6) a. dorp village ‘village’ b. dorp-en village-PL ‘villages’ c. dorp-s-café village-L-pub ‘village pub’ d. dorp-s-plein village-L-square ‘village square’

The distribution is not random, however. There is an implicational hierarchy: a noun that takes the plural marker *-s* exclusively takes the linker *-s*, whereas a noun that takes the plural marker *-en*, differ with respect to which L is selected (5)–(7) (De Belder 2013). Finally, there is a specific subcase of *-en* plurals that take an additional morpheme *-er*. This morpheme appears in compounds, whereas *-en* is not included, (7) (Hoekstra 1996).

- (7) a. ei egg ‘egg’ b. ei-er-en egg-PL-PL ‘eggs’ c. ei-er-koek egg-L-cookie ‘egg cake’ d. ei-er-lepel egg-L-spon ‘spoon for eggs’

The first property that distinguishes between *n-#* and *num-#* are **selectional restrictions**. *n-#* is subject to a greater degree of selectional restrictions than *num-#*, i.e. *n-#* is sensitive to both root and derivational environment it appears in (Kramer 2016:534-535). If we look at L, we observe that the choice usually depends on the non-head element. That is, if the head of the compound differs and the non-head stays the same, the linker usually remains the same as well, compare all c. and d. examples in (4)–(7). Looking at (5)–(7), we see that stems taking the regular plural marker *-en* are further divided into subsets selecting *-s*, *-en*, or *-er*. This is summarized in the table below.

PL	L
-en	-en, -s, -er
-s	-s

Table 1: Plural and linking morphemes

The second property is **determinism**. It has been argued that *n-#* is non-deterministic, whereas, *num-#* is deterministic (Acquaviva 2008, 33ff), i.e. any particular item can bear a number of different *n-#* markers, whereas the choice of *num* markers is fixed. For example, the plural of *hond* ‘dog’ is always expressed *-en*, (8a) but never as *-s*, (8b). In contrast, non-head elements can vary in terms of the selection of L (Krott et al. 2002, 2007), as in the case of *hond*, it can select for either *-s* (8c) or *-em*, (8d). This is expected if the plural marker corresponds to a high number, *num-#*, and L corresponds to a low number, *n-#*.

- (8) a. hond-**en** b. *hond-**s**³ c. hond-**s-dol** d. hond-**en-voer**
 dog-PL dog-pl dog-L-crazy dog-L-food
 ‘dogs’ intended ‘dogs’ ‘rabid’ ‘dog food’

However, contrary to what was discussed for the first property, it seems that it is not just the non-head that determines the linker, as in (8c) and (8d). In certain cases, the head appears to play a role. Note, that even though *-s* in (8b) cannot be used with a plural reading, this L can occur without a head in adverbial construction. This brings us to the third property, i.e. L can occur in **derivational contexts**, (9), (10). This is expected if L are indeed *n-#* given that derivations involve attachment of multiple category nodes—*n* carrying the plural can be embedded under different derivational affixes, whether these affixes are null or overt (Kramer 2016:538–539). The difference in behaviour between L and the plural affix corresponds to the distinction between *n-#* and *num-#*.

- (9) a. Hij gedraagt zich hond-**s** b. Zij is erg stad-**s**
 He behaves REFL dog-L she is very city-L
 ‘He behaves like a dog / rude’ ‘She is very metropolitan’
- (10) a. Zij zong zacht-**je-s** b. Hij loopt naar voor-**en**
 She sang soft-DIM-L he walks to front-L
 ‘She was singing quietly’ ‘He walks to the front’

[De Belder 2013:18]

The final property that differentiates between *n-#* and *num-#* is **double marking** of plurals. Split number systems can have cases of double plural marking, as shown for Yiddish (11), and Amharic (12) with no difference in meaning. These can appear side by side, as is shown for Amharic, or discontinuously, as is shown for Yiddish, where a diminutive suffix intervenes between the two plural suffixes. Likewise, the appearance of double plurals can be optional, as in Amharic, or conditioned by particular morphosyntactic environment, as in Yiddish.

- (11) a. der xazər b. di xazeyr-əm c. di xazeyr-əm-l-əx
 the pig the pig-PL the pig-PL-DIM-PL
 ‘the pig’ ‘the pigs’ ‘the little pigs’

[Yiddish (Lowenstamm 2007, 117)]

- (12) a. mämhir b. mämhir-an c. mämhir-otʃtʃ d. mämhir-an-otʃtʃ
 ‘teacher’ teacher-PL teacher-PL teacher-PL-PL
 ‘teachers’ ‘teachers’ ‘teachers’

[Amharic (Kramer 2017, 529–530)]

We argue that Dutch *-eren* plurals are instances of double plural marking.⁴ The examples from (11) and (12) can be replicated in Dutch. The double plural with no intervening material is shown in (13). Note that it is not possible to have *-en* inside compounds, (13c). Dutch has a diminutive, as in Yiddish, and *-er* shows up before the diminutive, whereas the regular plural shows up following the diminutive suffix, (14).

³Note that this particular form is possible but not as a plural form, see (9a).

⁴There is dialectal variation where the double plural takes *-ers* (Schutter et al. 2005).

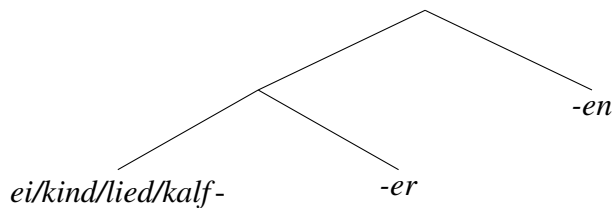
- (13) a. kalf
calf
'calf'
- b. kalv-**er-en**
calf-PL-PL
'calves'
- c. kalv-**er-(*en)**-liefde
calf-L-love
'puppy love'
- (14) a. kind
child
'child'
- b. kind-**er-en**
child-PL-PL
'children'
- c. kind-**er-tje-s**
child-PL-DIM-PL
'little children'

A second property of double plural marking is that in general the two number suffixes are strictly ordered, as is shown in (15) for Amharic. The same pattern is found in Dutch, (16).

- (15) a. mämhir-an-otʃf
teacher-PL-PL
'teachers'
- b. *mämhir-otʃf-an
teacher-PL-PL
'teachers'
- [Amharic (Kramer 2017, 534)]
- (16) a. lied-**er-en**
song-PL-PL
'songs'
- b. *lied-**en-er**
lied-PL-PL

The data discussed above indicate first of all that *-eren* plurals in Dutch are made up of two morphemes. Second, given i) the strict ordering of the two elements, ii) the fact that only the one closer to the root appears in compounds, and iii) the fact that the diminutive suffix can intervene, these two elements appear to be hierarchically ordered as in (17).

(17)



To summarize, as we've seen, when comparing the properties of the plural markers and L in Dutch with properties distinguishing *n-#* and *num-#*, Ls consistently pattern with *n-#*s. This is summarized in the table below.

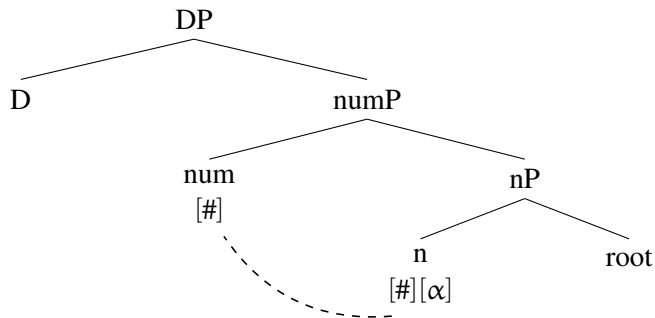
Property	num-#	<i>n-#</i>	Dutch L
(i) Selectional restrictions	✗	✓	✓
(ii) Non-deterministic	✗	✓	✓
(iii) Occurs in derivational contexts	✗	✓	✓
(iv) Multiple # marking	✗	✓	✓

Table 2: properties of number

3. Dutch n-#. Given the properties discussed in the previous section, we argue that Ls express # features on *n* and additional features on *n*, α and β (drawing on De Belder 2013).⁵ We furthermore assume that the two number features on *n* and *num* are in an Agree relation: # on *n* uninterpretable and unvalued, # on *num* interpretable and valued (drawing on e.g. Kramer 2014). In the absence of agreement, # on *n* receives a default value of [-SG]. This will be discussed in more detail in section 3.1.

We assume that the extended nominal phrase in Dutch contains at least the projections shown in (18). We set aside, for the purposes of this paper, whether *num* combines with the nominal stem through raising or lowering.

(18)



We argue that by applying a split-# analysis to Dutch and taking Ls as an instantiation of *n-#*, the various properties of L will follow, i.e. their correspondence with plural markers and their absence in the presence of *num* (with the exception of *-eren* plurals).

3.1 DERIVING DUTCH COMPOUNDS WITH LINKERS. Primary compounds are formed by adjoining the non-head element directly to the head of the compound in syntax after being formed in separate workspaces (cf. Chomsky 1970, Baker 1988, Lieber 1992, Roeper et al. 2002, Borer 2003, Piggott & Travis 2013).⁶ Hence, when we consider the derivation of *kattendrollen* ‘cat turds’, the two roots are merged with their respective *n* separately, (19). At this point the number features of both *ns* are unvalued.

(19)



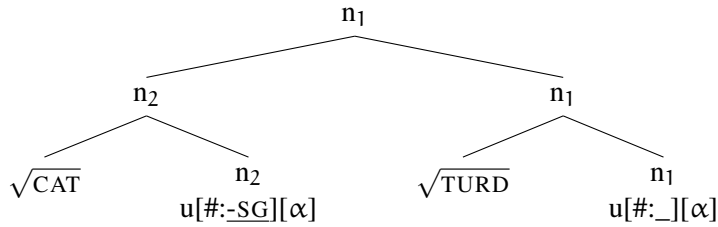
The two stems are then merged together directly, as illustrated in (20). This point marks the end of the extended projection of the root $\sqrt{\text{CAT}}$, i.e. there are no further functional morphemes associated with that root in the structure (cf. Harðarson 2016,2017). We argue that at this point

⁵We set aside the identity of this feature for further research.

⁶For the sake of space, we are setting aside synthetic compounds and limiting the discussion to primary compounds. There are a number of properties distinguishing the two types of compound and these have often been argued to result from differences in their formation (see e.g. Roeper & Siegel 1978). For some recent discussion along these lines, see Harðarson (To appear).

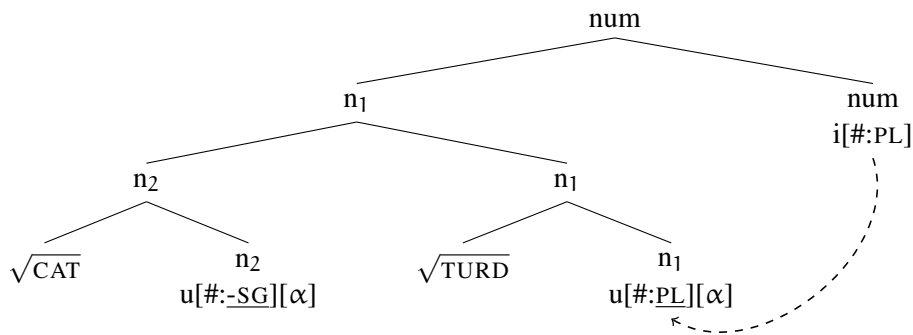
the # on the non-head element receives a default value of [-SG], which is triggered by it being dominated by a projection of another *n*. This point, however, does not determine the edge of the extended projection of the head of the compound, $\sqrt{\text{TURD}}$, and hence its # remains unvalued.

(20)



Following that, *num* with the value [+PL] is merged with the resulting structure in (21). *Num* and *n* of the head of the compound undergo agreement and # on *n* is valued as plural.⁷

(21)



At this point, the complete structure of the compound is built, but one more step is needed before it can be spelled out. This has to do with the implicational hierarchy of different *L* discussed in section 2. We follow De Belder (2013) in arguing that the different linkers are realized in the context of additional features on *n* and that these features are in a hierarchical relationship, table 3. In the absence of these features, *n* is realized as *-s*. In the context of the feature α , *n* is realized as *-en*. In the context of the feature β , which in turn requires the presence of α , *n* is realized as *-er*.

Feature	-s (-SG)	-en (-SG)	-er
α		+	+
β			+

Table 3: Feature Hierarchy

⁷Note that [-SG] is not equivalent to [+PL], nor is [+SG] equivalent [-PL]. The underlying assumption here is that number is the result of single feature or a combination of the two features (or more) features (e.g., Harley & Ritter 2002). We set aside for the purposes of this paper whether [\pm SG] and [\pm PL] are ultimately the appropriate features/labels as well as the precise semantics of these features. For alternatives and further discussion on these matters see e.g. Harley & Ritter (2002), Harbour (2011), Cowper & Hall (2014), Punske & Jackson (2018) and references cited therein.

Although linking elements are always homophonous to plural markers, it is important to note that they are not necessarily interpreted as plural (Booij 2001, Krott et al. 2002, De Belder 2013, i.a.). Consider the following examples. In (22a), it is unlikely that multiple cats collaborated in laying this single turd. It is more likely that it was simply the work of a single cat. Likewise, in (22b), the pen may be intended for a single pig or multiple pigs.

- (22) a. katt-**en**-drol
cat-L-turd
'cat turd'
- b. varken-**s**-hok
pig-L-pen
'pig pen'

To account for this, we assume L spells out [-SG]. We argue that under this assumption it is possible to capture the fact that although the non-head elements appear to be marked as plurals, they are not necessarily interpreted as such (drawing on e.g. Sauerland et al. 2005, i.a.).

Turning to spelling out the structures built above, at the point of Vocabulary Insertion the following rules apply to the roots.

- (23) $\sqrt{\text{CAT}} \rightarrow /kat/$ (24) $\sqrt{\text{TURD}} \rightarrow /drɔl/$

For the spellout of *n*, marked for [-SG], we assume the following VI-rules in (25), where *-s* is the realization of the unmarked *n* and *-en* is the realization of *n* marked for α . In case of the 'double plural', we assume that the VI rule is only specified for the presence of β . This thus means that *-er* is not spelling out plural features directly, but spells out features on *n* which determine the distribution of the plural.

- (25) a. $n, \rightarrow /əɪ/ / [\beta]$
b. $n, u[\#: -SG] \rightarrow /ə(n)/ / [\alpha]$
c. $n, u[\#: -SG] \rightarrow /s/$

For the purposes of this paper, the VI rules in (26) for *num*, [PL] are needed.⁸ As above, the *-s* form is the unmarked form and *-en* is realized in the presence of α .

- (26) a. $num, i[\#: PL] \rightarrow /ə(n)/ / [\alpha]_n$
b. $num, i[\#: PL] \rightarrow /s/$

Under these rules, the non-head element will be realized as $/kat/-/ə(n)/$ and the head and *num* are realized as $/drɔl/-/ə(n)/$. Note that under the rules in (25), the double plural marker on *turd* is ruled out: a) *n* does not carry the feature β , and b) the number feature on *n* is valued as PL. Hence the rules in (25) do not apply and the double plural marker is ruled out, thus we correctly derive (27a) and rule out (27b) and (27c).

- (27) a. drol- \emptyset -en b. *drol-s-en c. *drol-en-en
turd- \emptyset -PL turd-L-PL turd-L-PL

⁸Note that the choice of form for the *num*-pl has been argued to be largely prosodically defined (van der Hulst 1984, Booij 1998, a.o.). However, there are notable exceptions. Nothing here hinges on the representation via contextual allomorphy rules or other forms.

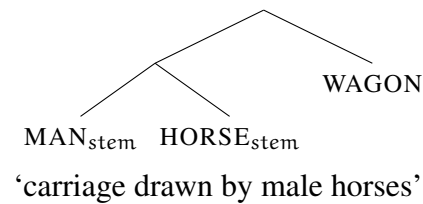
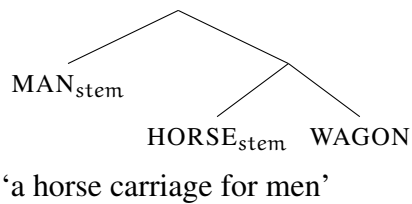
To account for the absence of *-er* in singulars, we assume that in the context of *num*, [+SG], the feature [α] is deleted, either under Impoverishment (Bonet 1991) or obliteration (Calabrese 2011). This bleeds the VI rules in (25), hence *n* is not realized in the singular.

4. Presence/Absence of L At this point we have seen that L in Dutch can be analyzed as # on *n*. If this analysis is on the right track, we make predictions about possible and impossible compound structures. It has been argued that compounding takes place at different layers and the size of the element determines the layer at which it can be attached (Harðarson 2016, 2017, De Belder 2017), i.e. only elements of the same size can be compounded. In this section we first explain this type of approach to compounding and after that we will focus on the predictions for Dutch with regard to L.

To understand the compounding predictions, we first look at Icelandic three part compounds. These are ambiguous with regard to left or right branching structures when both non-head elements match in terms of their size. That is, the range of meanings for a compound where both non-head elements are uninflected as in (28), and the range of meanings for a compound where both non-head elements are inflected, as in (29), are compatible with two different structures.⁹

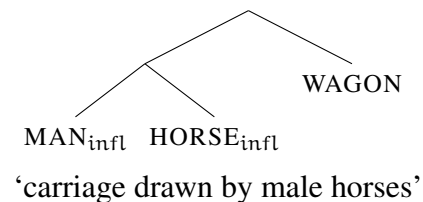
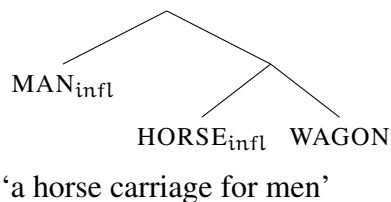
(28) a. karl#hest#vagn
man#horse#wagon

b.



(29) a. karl-a#hest-a#vagn
men-GEN#horse-GEN#wagon

b.



However, this ambiguity is lost when the two elements do not match, namely when only one of the non-head elements carries the inflection. The first option is when an uninflected element linearly follows an inflected element, (30). At this point, as depicted in (30b), only a right branching structure is possible, and the left branching structure is ungrammatical.

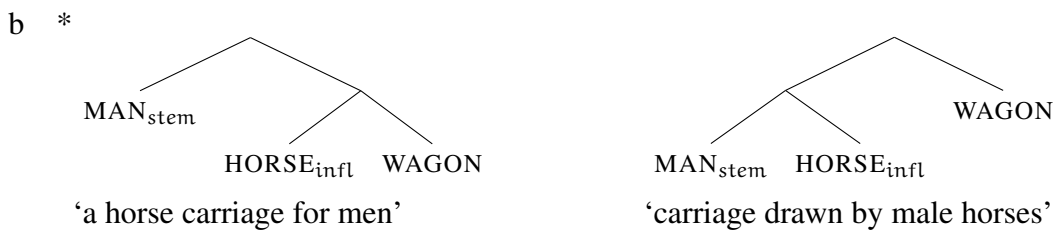
(30) a. karl-a#hest#vagn
men-GEN#horse#wagon

⁹Note that the inflected non-head elements are bearing case and number. These should not be conflated with linking morphemes as Icelandic has a system of linking morphemes and elements bearing linking morphemes pattern with uninflected non-head elements.

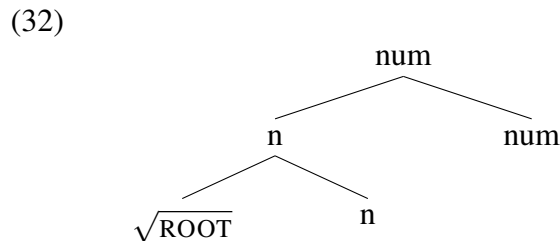


The reverse is observed when the uninflected element linearly precedes the inflected element, (31). Then, as illustrated in (31b), only a left branching structure is possible, and the right branching structure is ungrammatical.

(31) a. karl-#hest-a#vagn
man#horse-GEN#wagon



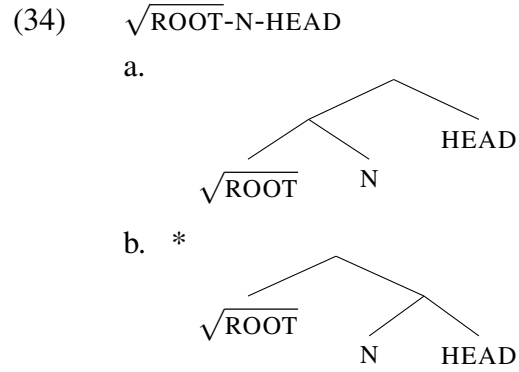
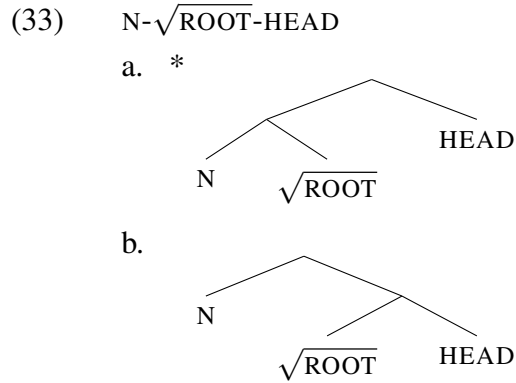
In Harðarson (2016, 2017), these bracketing restrictions were argued to stem from compound elements being required to match the level at which they are merged. The following nominal structure is assumed, (32), where each noun consists of a root level, a stem level and an inflectional layer.



In compounds, non-head elements must match the level they attach to: categorized stems, which are elements of category *n*, must merge at the stem level (to a head of the category *n*), and inflected elements, i.e. elements of category *num*, must merge at the inflectional level (to a head of the category *num*).¹⁰

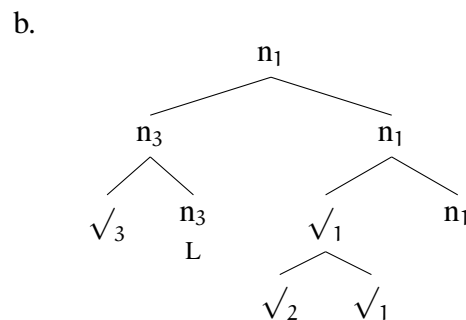
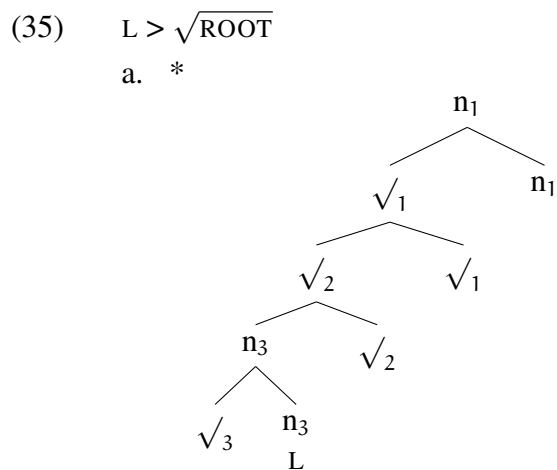
Both Harðarson (2016, 2017) and De Belder (2017) predict the same type of distinction between compounding at the stem level and compounding at the root level. Thus, when a categorized root, given as *N* below, linearly precedes an uncategorized root, $\sqrt{\text{ROOT}}$, only a right branching structure will be possible, (33), corresponding to (30). Vice versa, when a $\sqrt{\text{ROOT}}$ linearly precedes an *N*, only a left branching structure will be possible, (34), corresponding to (31).

¹⁰This node was labelled as φ in Harðarson (2016, 2017).



Going through these examples in more detail, the left branching structure in (33) is ruled out since it would require a root to merge at the stem level, thus to an element of the category n . However, the left branching structure in (34) is expected since a categorized stem contains sufficient structure to host an uncategorized root as a modifier. For the right branching structures we observe the opposite. The structure in (33) is possible since the root can attach to the head of the compound at the root level, whereas the stem is attached following the initial compounding, merging with n and vice versa, the right branching structure in (34) is ruled out since it would require the root to attach to an element of the category n .

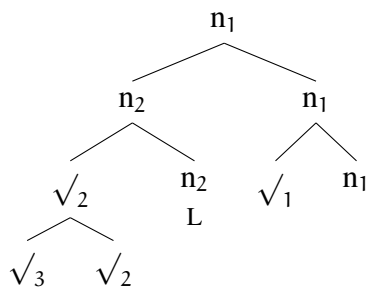
With this in mind, we can return to L in Dutch compounds. Recall that we argue that L is the realization of n , and as such its presence or absence should indicate the size of non-head elements. More specifically, the presence of L indicates that the element is of category n and the absence of L can be taken as the absence of n .¹¹ If our analysis is on the right track, the following predictions are made with respect to three (or more) part compounds. When an element with L linearly precedes an element without L, only a right branching structure is possible, (35), because an element bearing L is of category n , a stem, which means it must attach to a categorized stem. A left branching structure would hence require a stem to attach to a bare root. When an element without L linearly precedes an element with L, only a left branching structure is possible, (36). An element bearing L contains the sufficient structure to host a bare root, whereas a right branching structure would require a bare root to attach at the stem level.



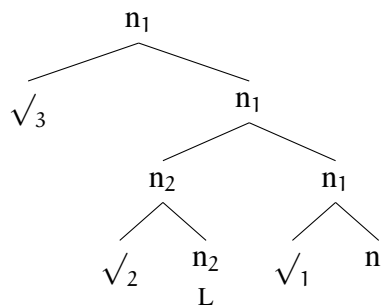
¹¹The question arises whether there are null L in Dutch. However, elements that would be candidates for this are mass nouns. As far as we have tested, these follow the same distribution as the compounds discussed in (38)-(41).

(36) $\sqrt{\text{ROOT}} > L$

a.



b. *



The predictions for Dutch L and the bracketing restrictions are borne out. First, we look at nouns that can only appear with plural morphology outside of compounds and then at nouns that do not carry any plural morphology (i.e. mass nouns).

There is a class of nouns in Dutch, exemplified here by the noun *kleer-* ‘cloth/clothes’, that cannot appear without regular plural marking outside of compounds. That is, these elements cannot occur as a singular form, (37). In compounds, however, *kleer-*, cannot take a linker, (38), as is typically the case with mass nouns. We take this to indicate that *kleer-* is an instantiation of a root element and does not have any stem-level information. We assume, drawing on De Belder (2017) that this compound is hence a root compound, and that no stem-level material is present on the non-head element.

(37) a. *kleer
cloth
Intended: singular of clothes

b. kle(e)r-en
cloth-L/PL
‘clothes’

(38) a. klee- maker
clothes- maker
‘tailor’

b. *klee-en- maker
clothes-L- maker
Intended: ‘tailor’

c. *klee-s- maker
clothes-L- maker
Intended: ‘tailor’

With this information we can turn to three part compounds in Dutch, taking *klee-* as a root level element. First let us look at an example where an element bearing L precedes the root *klee-*, shown in (39). In this case, meanings consistent with a right branching structure are available, (39a), such as ‘a tailor who is also a farmer’ whereas meanings consistent with a left branching structure are not, (39b), such as ‘maker of farmer’s clothes’.

(39) a. [boer- en [klee- maker]
farmer- L cloth - maker
‘Tailor for farmers / tailor that is
like a farmer’

b. *[[boer- en- klee] maker]
farmer- L- cloth maker
Intended: ‘maker of farmer’s
clothes’

The prediction in (35) is borne out as well. That is, when the root element *klee-* linearly precedes an element with L, a right branching structure is unavailable, (40b), whereas left branching structure is possible, (40a). These bracketing restrictions are expected if L is a realization of *n*.

- (40) a. [[kleer-kasten-**en**] maker]
 cloth-closet-L maker
 ‘maker of wardrobes’
- b. *[kleer [kasten-**en**-maker]]
 cloth closet-L-maker
 int.: ‘closet maker of /for clothing’

At this point, we have shown that an element like *kleer* behaves like a root, because it seems to not have any functional material, and as such, causes bracketing restrictions if it occurs in a three part compound where the other non-head carries a L. It is possible however, that there could be a null version of L. If that were the case, the expectation is that an element without an overt L could co-occur with an element with an overt L without inducing the bracketing restrictions observed above. Mass nouns in Dutch do not carry plural morphology, as is shown for *kaas* ‘cheese’ in (41).¹²

- (41) a. kaas
 cheese
 ‘kaas’
- b. *kaz-en
 cheese-PL
 int.: ‘more cheese’

Mass nouns, furthermore, occur without L inside compounds, as shown in (42), and such examples have been argued to be carry a null L (De Belder 2017).¹³

- (42) a. kaas-boer
 cheese-farmer
 ‘cheese farmer’
- b. *kaz-en-boer
 cheese-L-farmer
 Intended: ‘cheese farmer’
- c. *kaas-s-boer
 cheese-L-farmer
 Intended: ‘cheese farmer’

However, when *kaas* is placed in a three part compound, the same bracketing restrictions are observed as for *kleer* above. This strongly indicates that *kaas* does not carry a null L.¹⁴

- (43) a. ?[kaas-dorp-s [cafe]]
 cheese-village-L cafe
 ‘Pub of a cheese village’
- b. *[kaas [dorp-s-cafe]]
 cheese village-L-cafe
 Intended: ‘village pub made out of cheese’

In conclusion, the most likely candidate for null L would be mass nouns, which are then not expected to pattern as seen above. This means that an overt L indicates the presence of a categorizing head, and, vice versa, the absence of L indicates the absence of categorizing material.

5. Conclusions. In this paper we have shown, first of all, that L in Dutch compounds are not just plural marking inside compounds. We have shown that the properties of L in Dutch are consistent with the properties of *n-#*: they are associated with nominal stems, appear in derivational

¹²Plural morphology is not possible under a mass reading. The form *kazen* is grammatical, but only under a kind reading, i.e. ‘different types of cheese’.

¹³(42b) is only grammatical under the reading ‘farmer of different types of cheeses’.

¹⁴Several observations are in order about the examples in (43). First of all, example (43a) gets better if the linker is absent. Those cases involve compounding of two roots and is hence expected to be possible. Second, (43a) becomes grammatical with stress and an intonational break between *kaas* and *dorpscafe*, but with regular stress the compound remains ungrammatical. We assume that stress can only be assigned at the level of a categorizing head. Under the stress pattern found in (43b) there is no room for stress assignement, since *kaas* is of the root level.

contexts, have greater selectional restrictions and are non-deterministic. Moreover, *-eren* plurals provide evidence that Dutch has a split-number system: The plurals are separable into *-er* and *-en* are separable and diminutive marking can intervene between the two and only *-er* occurs on non-head elements in compounds.

We took this link between the properties of L and *n-#* to indicate that Dutch has number marking in derivational contexts. We provided an analysis that captures the fact that L are similar to regular plural marking but do not have to be interpreted as plural.

Finally, we have shown that taking L to be a realization of *n* makes predictions with regard to bracketing restrictions based on the presence or absence of L on non-head elements and these predictions are borne out. Thus, in a three part compound, only a left branching structure is possible when an element with L follows an element without it; and only a right branching structure is possible when an element with L precedes an element without.

This means that our paper contributes to the understanding of number inside DPs which in turns furthers the understanding of possible compound structures.

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