

Flavors of n^o:
when derivation restricts functional structure

Marijke De Belder

Utrecht University / CRISSP / HUBrussel

Abstract

In this paper I discuss a class of nouns which strongly resist number marking, viz. collective nouns (e.g. *cutlery*). At first sight they falsify the claim that roots can combine with all morphosyntactic structures. I show that they do not: collectives are not roots, but derivations that contain a featureless root and an n^o with a feature specification that is semantically incompatible with number marking.

Keywords: mass-count distinction, Exo-Skeletal Model, roots, morphosyntax, Dutch

1. Introduction: The Exo-Skeletal Model and collective mass nouns

In order to capture the semantic malleability of lexical items Borer (2005a,b) introduced the Exo-Skeletal Model. The central claim in this framework is that lexical roots (such as *cat*, *milk* or *jump*) do not carry any morphosyntactic features, not even categorial or selectional ones. For example, the root *cat* is not classified as a noun in the lexicon, let alone as a count noun. In the same vein, the root *milk* can be inserted both in a nominal and in a verbal structure. Of crucial importance to the Exo-Skeletal Model is thus the fact that all roots can be inserted in all syntactic structures. Indeed, roots which we traditionally call mass nouns can be inserted in count readings and vice versa. This is illustrated by the examples in (1)-(5). Although *sugar* is traditionally considered to be a

mass noun and can be used as such, as in (1), it can also get a count reading, as shown in (2)-(3). Similarly, while *dog* is traditionally treated as a count noun (see (5)), it can get a mass reading. This is illustrated in (4).

(1) a lot of sugar	[mass]
(2) three sugars: glucose, fructose and saccharose	[count]
(3) coffee with two sugars	[count]
(4) There's dog in this soup.	[mass]
(5) three dogs	[count]

Given the right context, it is indeed the case that nouns can be inserted freely in either mass or count structures. Observations like these are central to the Exo-Skeletal claim that roots do not carry any morphosyntactic features that may restrict the structures in which they can be inserted.

In this paper I will examine a set of nouns that at first sight present a problem for the Exo-Skeletal Model. These are the so-called collective mass nouns, such as *ondergoed* 'underwear' or *suikerwerk* 'confectionery'. They can only get mass readings and strongly resist count readings, regardless of the context¹. The question arises if collective mass nouns form a class of roots that are endowed with morphosyntactic features restricting their insertion possibilities, and thus calling into doubt the foundations of the Exo-Skeletal Model. In this article I show that they do not; I argue that they are not roots, but derivations. As they are not bare roots, they obviously cannot challenge any claim about roots. Rather, it is the feature specification of the derivational suffix which restricts insertion. This suffix realizes n° . The more general conclusion is that what appear to be

¹ The term 'collective noun' is sometimes also used to refer to nouns such as *committee* or *team*, which represent a collection of members, I do not intend that interpretation here.

features on/of the root are in fact features added to the structure by derivaton. This line of reasoning suggests that derivational material just above the root restricts the insertion possibilities of that root, as suggested by Borer (2005b).

The paper is organized as follows. In the next section I discuss the data that constitute my central argument. I show that collective mass nouns only get mass readings. In the next two sections I argue that all collective mass nouns in Dutch are products of derivation. I first discuss polymorphemic collective mass nouns (section 3), but I later extend the analysis to monomorphemic ones as well (section 4). Section 5 gives an analysis for the observation that collective nouns are restricted to mass readings. I examine which features the collective suffix realizes and I subsequently argue that they are semantically incompatible with count readings. I further discuss another derivational affix which has the same effects as the collective suffix. The last section sums up and concludes.

2. Collective mass nouns only get a mass reading

In this section I show that collective mass nouns are only compatible with singular mass readings. First observe that they are truly singular from a syntactic point of view². This is shown by the fact that they trigger singular agreement when in subject position. Example (6) shows that the collective noun *ondergoed* ‘underwear’ triggers singular agreement on both the adjective³ and the verb.

(6) Proper- \emptyset ondergoed **is/*zijn** prettig.

² Idiosyncratic plural forms, such as *groceries*, do not fall under the scope of this article. See Acquaviva (2008) for a discussion.

³ The noun *ondergoed* is neuter, hence the adjective gets neuter agreement. Neuter, singular adjectival agreement is marked by a null morpheme in Dutch. If the noun were to trigger plural adjectival agreement, the result would be a schwa. See Schoorlemmer (2009) for recent discussion.

clean-SG.NEUTER underwear is/are nice

‘Clean underwear is comfortable.’

As singulars, collective mass nouns can be combined with the quantifier *veel* ‘much’, which is the standard syntactic test to diagnose mass readings. This is illustrated in (7).

- (7) veel ondergoed
much underwear
‘much underwear’

The examples above show that collective mass nouns get singular mass readings from a syntactic point of view. Consequently, they also get a mass interpretation. This is shown by the fact that they obey cumulativity, which is a standard semantic test for mass readings (Krifka 1989). The cumulative predicate CUM is defined in ((8), where X is a variable over sets, U is the universe of discourse, p is a mereological part structure on U and \oplus_p is the mereological sum operation.

$$(8) (\forall X \subseteq U_p) (\text{CUM}(X) \Leftrightarrow \exists x, y (X(x) \wedge X(y) \wedge x \neq y) \wedge \forall x, y (X(x) \wedge X(y) \Rightarrow X(x \oplus_p y)))$$

Cumulativity holds for collective mass nouns. This is illustrated in the example below, where *ondergoed* ‘underwear’ gives range to the variable over sets and *onderbemdje* ‘undershirt’ and *beha* ‘bra’ refer to x and y in (8).

- (9) a. Een onderhemdje is ondergoed.
 an undershirt is underwear
- b. Een beha is ondergoed.
 a bra is underwear
- c. Een onderhemdje en een beha zijn samen nog steeds ondergoed.
 an undershirt and a bra are together yet still underwear.
 ‘An undershirt counts as underwear. A bra counts as underwear. An undershirt
 and a bra together still count as underwear.’

Collective mass nouns thus get the semantic interpretation of mass readings.

Finally, note that the mass reading is the only grammatical reading for these nouns. They strongly resist count readings. Example (10) shows a collective noun in a mass reading; (11) illustrates the illicitness of the count reading. (Note that the numeral and the plural suffix force a count reading in this example.)

- (10) veel suiker-werk [mass]
 much sugar-WORK
 much confectionery

- (11)* drie suiker-werk-en [count]
 three sugar-WORK-PL

The examples discussed so far show that Dutch collective mass nouns get bona fide mass readings, both from a syntactic and from a semantic point of view. The next section addresses their morphological makeup.

3. Polymorphemic collective mass nouns are derivations

The overwhelming majority of Dutch collective mass nouns is morphologically complex.

They typically end in the following morphemes: *-schap*, *-goed*, *-waar*, *-werk*, *-(er)ij*, *-gerei*, *raad*,... Examples are given in (12)-(18).

(12) koop-waar
buy-WARE
'merchandise'

(13) huis-werk
house-WORK
'homework'

(14) speel-goed
play-GOODS
'toys'

(15) schrijf-gerei
write-WARE
'stationery'

(16) gereed-schap
ready-SHIP
'tools'

(17) kled-ij
cloth-ERY
'clothing'

(18) huis-raad
house-GOODS
'household goods'

The question immediately arises what the status of these morphemes is⁴. Three options readily come to mind: (i) they realize inflection, i.e. functional heads, (ii) they are the right hand part of a compound, i.e. they are roots, or (iii) they are derivational affixes, i.e. they realize categorial heads. In the remainder of this section I discuss each option in turn.

The conclusion will be that these morphemes are derivational suffixes.

3.1 Polymorphemic collective morphemes do not realize inflection

There are two arguments against the hypothesis that collective morphemes are inflectional suffixes. First of all, collectives can get non-compositional meanings.

Examples (19)-(21) serve as an illustration of this fact.

(19) gereed-schap
ready-SHIP
'tools'

⁴ Some of these morphemes, such as *-schap* and *-ij* have homonyms that are not restricted to collective mass nouns. I disregard those here.

(20) linnen-goed
linen-GOODS
'linen' (can be made of cotton)

(21) leeg-goed
empty-GOODS
'return bottles'

As compositionality is the hallmark of inflection, the non-compositional meanings of the above examples would be highly problematic under such an analysis.

The second argument concerns the fact that many lexical gaps can be found in polymorphemic collectives. Example (22) shows a well-formed and frequently attested noun. The new formation in (23), however, is not acceptable, although it is not far-fetched from a semantic or pragmatic point of view.

(22) speel-goed
play-GOOD
'toys'

(23)* studeer-goed
study-GOOD
INTENDED: 'study material'

Such lexical gaps are suspect under an inflectional analysis, as inflection is characterized by a high degree of productivity. In conclusion, the non-compositionality and the fact that this word formation process is not fully productive are incompatible with an analysis

according to which collective mass nouns are the product of inflection. I therefore reject this hypothesis.

3.2 Polymorphemic collective mass nouns are not compounds.

It is well-known that the formation of endocentric compounds with a noun as the right hand part is fully productive in Dutch (Booij & Van Santen 1998:150; Booij 2002: 142; De Haas & Trommelen 1993:370). An example is given in (24).

- (24) tafel-laken
table-cloth
'table cloth

(24) is an nominal endocentric formation whereby the right hand part is the head: a tablecloth is a type of cloth. If collective mass nouns were such compounds, they should be fully productive. This expectation, however, is not borne out. I have pointed out above that they do show lexical gaps. The unproductivity of collective mass nouns can further be illustrated by the following test. Highly productive processes often allow for a full phrase as its left hand part in Dutch (see Booij 2002: 123 and 142). Unsurprisingly, the fully productive process of endocentric nominal compounding freely allows for such formations (Booij 2002:143).

- (25) bruin-e-suiker-fabriek
brown-MASC.SG-sugar-factory
'factory which produces brown sugar'

If collective mass nouns were nothing but endocentric nominal compounds, they should behave on a par, contrary to fact. Consider, for example, the collective noun *suikerwerk* ‘confectionery’, illustrated in (26). If this collective noun were a compound, it should allow for an [[AN]N] structure, contrary to fact. This is shown in (27).

(26) suiker-werk
sugar-WORK
‘confectionery’

(27)* bruin-e-suiker-werk
brown-MASC.SG-sugar-WORK

It may be clear from the lexical gaps and the above example that collective mass nouns are not productive in Dutch. This unproductivity cannot be captured under a compounding analysis.

Summing up, in this section I have shown that the unproductivity of collective mass nouns cannot be reconciled with a compounding analysis. In the previous section I have shown that the collective morpheme does not realize inflection either. This leaves us with only one possibility left; they are derivations. In the next section I discuss this option and show that this analysis fits the data.

3.3 Polymorphemic collective mass nouns are derivations⁵

In the two previous sections we have seen that collective mass nouns show lexical gaps.

The crucial data are repeated in (28)-(29).

(28) speel-goed

play-GOOD

‘toys’

(29)* studeer-goed

study- GOOD

Lexical gaps are not at all surprising under a derivational approach; many derivational processes are unproductive. As a consequence, these data are immediately captured under the assumption that collective mass nouns are derivations.

Another property of collective mass nouns which can be understood under a derivational approach is the fact that the selection of the precise suffix is determined by convention. This is a well known property of derivation. In English, for example, several nominalising suffixes are in competition to form a noun that expresses a quality from an adjective. *Sincere* takes *-ity* to form *sincerity*, *jealous* selects for *-y* to form *jealousy* and others, such as *sad*, just take the default *-ness*. The specific choice is determined by lexicalisation processes and thus merely depends on convention. In the same vein, we have the

⁵ A textbook distinction between compounding and derivation is that compounds are prototypically built up of free morphemes and derivations of bound morphemes. Collective mass nouns, however, show both types of morphemes as their right hand part (e.g. *-werk* can be used as free morpheme, whereas *-ij* cannot). Moreover, it has been pointed out that compounding occasionally allows for bound morphemes (such as the *berry*-morphs) and derivation sporadically seems to employ a free morpheme (such as *weg* ‘way’ in Dutch, which is used to create adverbs). As such, the status of the right hand morphemes in collectives is inconclusive.

conventionalized Dutch collective mass nouns *ondergoed* ‘underwear’, *kleedij* ‘clothing’ and *schrijfgerei* ‘stationery’, but not the new formations **onderwaar*, **kleedgoed* or **schrijfraad*.

Finally, note that collectivity is a well known semantic feature of derivation. In English this feature can be expressed, for example, by *-ity* as in *humanity*, by *-age* as in *plumage* or by *-ship* as in *membership*. In Dutch it can be realized by *-dom* as in *mensdom* ‘humanity’, by *-age* as in *pluimage* ‘plumage’ or *-schap* as in *nalatenschap* ‘inheritance, heritage’, amongst others. I propose to consider the collective mass nouns as a specific subset of such derived collective nouns, i.e. as derived collective nouns which have the extra property of being mass.

I will treat the collective suffix as an instance of n° , simply because it always and only derives nouns. The precise structure of a Dutch collective mass noun is given in (30).



In the above structure, the left-hand part of the bimorphemic collective noun is treated as the root, the collective suffix is a realization of n° .

4. Monomorphemic collective mass nouns are rootless derivations

As pointed out in the previous section the overwhelming majority of Dutch collective mass nouns is polymorphemic. In this section I address the small minority of collective

⁶ I assume that the surface order of the morphemes results from morphological reordering in the post-syntactic morphophonological component of the grammar (see Halle & Marantz 1993).

mass nouns that are undeniably monomorphemic. I will analyze them on a par with the polymorphemic ones, i.e. as derivations. I propose that the collective noun as a whole is the derivational suffix. Consequently, these words are rootless.

Dutch has a small set of monomorphemic collective mass nouns, with probably less than ten members. The most well-known examples are *vee* ‘cattle, livestock’ and *aas* ‘bait/carrion’. There are no etymological indications that these nouns were once polymorphemic (De Vries et al. 2001, De Vries 1971, Van Veen & Van der Sijs 1997). As such, they challenge the view that all collective mass nouns are derivations⁷. As I will show in this section, however, there is good reason to treat them as such. The argument goes as follows. I will discuss polymorphemic collective mass nouns that take *vee* and *aas* as their right hand member. I will argue that they are not compounds, but instances of derivations, with *vee* and *aas* as the collective suffix. I then propose to also treat *vee* and *aas* in isolation as realizations of collective suffixes, the only difference being that in that case they happen to lack a root.

The most complete dictionary of the Dutch language, *Woordenboek der Nederlandsche Taal* (De Vries et al. 2001), mentions approximately 40 polymorphemic nouns with *vee* as the right hand member and less than 10 with *aas* as the right hand member. The most common⁸ examples are given in (31) and (32). I only provide glosses, because an English translation is not always readily available.

⁷ One could, of course, assume a null suffix for these nouns. I have not found a reason to exclude this possibility, but I did not find any reason to argue for its presence either. As such, a null suffix would be an unfalsifiable assumption in this context. I therefore think it should not be assumed if we can account for the data otherwise. Note that Myers’s generalization (which states that zero-derived words do not permit the affixation of further derivational morphemes (Myers 1984)) does not provide any evidence in this context. I have not found a productive suffix in Dutch which attaches to nearly all nouns, but not to zero-derived ones. I did find suffixes which do not adhere to Myers’s generalization (see also Pesetsky 1995), these are *-achtig* ‘like’ and *-loos* ‘without’. They attach to all nouns, without any exception, thus also to monomorphemic collective mass nouns.

⁸ These nouns all yield more than 1000 Google hits, most even score more than 30.000 Google hits. (I restricted my Google search to pages with the extension .nl, in order to avoid Afrikaans data. The Google search was performed in December 2009.)

- (31) *rund-vee* ‘cow-stock’, *fok-vee* ‘breed-stock’, *slacht-vee* ‘slaughter-stock’, *melk-vee* ‘milk-stock’, *pluim-vee* ‘feather-stock’, *stamboek-vee* ‘pedigree-stock’, *vlees-vee* ‘meat-stock’
- (32) *lok-aas* ‘attract-bait’, *kunst-aas* ‘artificial-bait’, *vis-aas* ‘fish-bait’

Despite the fact that these polymorphemic collective mass nouns intuitively seem to be the product of compounding, I will argue that they are derivations. Recall that endocentric, nominal compounding is fully productive in Dutch, regardless the nature of the left hand part (Booij & Van Santen 1998:150; Booij 2002: 142; De Haas & Trommelen 1993:370). Hence, if we adopt the compounding analysis, one expects that we should be able to find an infinite number of licit polymorphemic nouns with *vee* or *aas* as the right hand part. This is not the case; these polymorphemic formations constitute a closed class. Consider the following test. Nominal endocentric compounds allow for a replacement of the left hand part by a synonym. This is expected given the highly productive nature of this word formation in Dutch; there is no reason why the new formation should be illicit. An example is given below.

- (33) *werkelijkheids-besef*
 reality-sense
 ‘sense of reality’

- (34) *realiteits-besef*
 reality-sense
 ‘sense of reality’

In example (34) a synonym of the left hand part of (33) is used. Both examples are equally good. Now consider a parallel example with *vee* as its right hand part. The entry

fokvee is commonly used, it can be found both in dictionaries and in actual speech⁹. If one replaces *fok* by its synonym *teel*, however, the result is both illicit and unattested¹⁰.

- (35) fok-vee
breed-stock
'breeding stock'

- (36) * teel-vee
breed-stock

This is completely unexpected under a compounding approach; a productive word formation process should yield the form *teelvee*. It is illustrative to compare these examples with the words in (37) and (38) which contain the same roots and which are the products of highly productive Dutch word formation processes^{11,12}. They are both perfectly fine and well-attested¹³.

- (37) vee-kweker
stock-breeder
'stock breeder'

⁹ Illustrative of this fact is that it scores more than 30.000 Google hits.

¹⁰ One could argue that *fokvee* blocks *teelvee*. However, Marantz & Embick (2006) show that lexical blocking does not seem to exist. They show that the ungrammaticality of the prototypical examples of lexical blocking can be assigned to independent reasons. Note also that example ((33) did not block ((34).

¹¹ Note that these data illustrate that lexical blocking does not seem to be a relevant factor (see note 10).

¹² These are the derivation of an agentive noun (*kweker*, *teler* 'breeder) from a verb (*kweken*/*telen* 'to breed) followed by compounding (*veekweker*, *veeteler* 'stock breeder). Note that it is irrelevant for the compounding process if *vee* is a derivation or a bare root, as both can be the left hand member of a Dutch compound. (They may also be analyzed as synthetic compounds, which are also productive in Dutch.)

¹³ *Veekweker* scores more than 2000 Google hits in pages from the Netherlands, *veeteler* even more than 4000 Google hits.

- (38) vee-teler
stock-breeder
'stock breeder'

The contrast between (36) and (38) is telling. If the polymorphemic nouns in (31) and (32) were truly the product of compounding, gaps such as (36) are left unexplained. Examples (39) and (40) provide more examples of new formations that are pragmatically quite plausible, but that are nevertheless judged illicit by my informants and which are unattested^{14,15}.

- (39) **geitenvee* 'goat stock', **vachtvee* 'coat stock', **kamelenvee* 'camel stock', **struisvogelvee*
'ostrich stock'
(40) **madenaas* 'maggot bait', **gjeraas* 'vulture carrion', **zoetwatervisaas* 'freshwater fish
bait'

It should be clear from these data that polymorphemic nouns with *vee* or *aas* as the right hand member constitute a closed class. This cannot be captured if these nouns are treated as compounds; Dutch endocentric nominal compounding is fully productive.

I will therefore not pursue this option any further and instead propose derivation as an alternative. I have pointed out in section 3.3 that lexical gaps are expected under a derivational approach. I will therefore treat polymorphemic nouns with *vee* and *aas* as the right hand member on a par with the other polymorphemic Dutch collective mass nouns

¹⁴ All these examples score less than five hits on Google, most of them even none.

¹⁵ The lexical item *vee* can be used productively to form so-called scalar nouns which express contempt (Corver 2008). Examples are *leervee* 'students' (Lit. study stock) and *werkvee* 'workers' (Lit. work stock). In this article I argue that collective mass nouns are the result of a structural, syntactic effect and not of a lexical property. In the same vein, I think that the scalar use of *vee* may suggest that also scalarity is a structural effect.

(see section 3.3), the difference being that *vee* and *aas* realize the categorial head. This is illustrated below.



Analogously to the structure of the bimorphemic noun in (41), I argue that monomorphemic collective mass nouns only consist of a derivational morpheme and thus lack a root¹⁶. In other words, *vee* and *aas* are realizations of a nominal head, not of a root. This is shown in (42).



Unconventional though it may be, the rootless structure in (42) is not problematic from a theoretical point of view. Within the Exo-Skeletal Model roots are not assigned any morphosyntactic features, i.e. they are syntactically inert. As a result, their absence does not affect the syntactic structure. Semantically, roots can be characterized as modifiers (Borer 2005b, Den Dikken 2008). As such, they are optional.

Summing up, all Dutch collective mass nouns are derivations. The rightmost part is a suffix that realizes the categorial head n°. Monomorphemic collective mass nouns only consist of a derivational morpheme. As such, they are rootless derivations.

¹⁶ I assume that null roots do not exist per definition. They would be combinations of no semantics and no form. I think it is reasonable to assume that a lexical item should at least have a form or a meaning in order to be stored.

5. The analysis: The semantics of the collective suffix

In the previous sections I argued that it is the derivational nature of collective mass nouns that gives rise to their restricted insertion possibilities. More specifically, the collective suffix prohibits a count structure and forces a mass reading. In this section I discuss how this comes about.

5.1 *The collective suffix realizes the feature [mass]*

The central observation in this article is the fact that Dutch collective mass nouns do not allow for a count reading, but only for a mass reading. The examples are repeated in (43)-(44). Example (43) shows the noun *suikerwerk* ‘confectionery’ in a mass reading, (44) is an illicit count reading.

(43) veel suiker-werk [mass]
much sugar-WORK
much confectionery

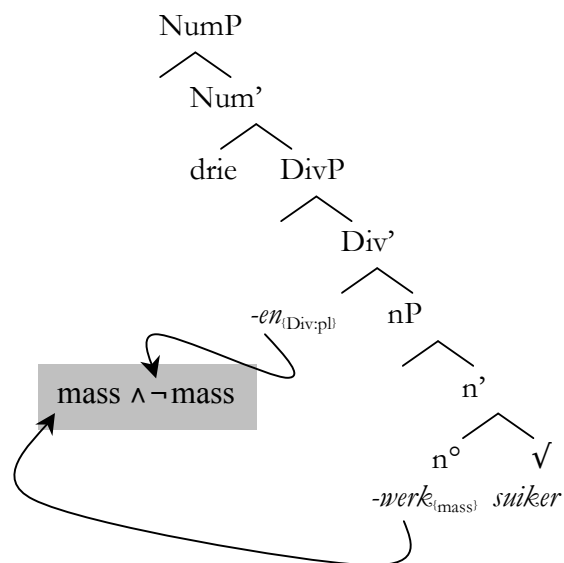
(44)* drie suiker-werk-en [count]
three sugar-WORK-PL

It is clear that it is not the root causing this restriction. Nothing prohibits *suiker* ‘sugar’ to occur in a count reading, as is illustrated in (45).

- (45) drie suikers: fructose, glucose en saccharose [count]
 three sugars: fructose, glucose and saccharose
 ‘three sugars: fructose, glucose and saccharose’

As the restriction does not come from the root, I propose that it stems from the derivational suffix. More specifically, I propose that the collective suffix is specified for the feature [mass]. It now follows that collective suffixes are incompatible with number marking. The combination of the [mass] feature on the suffix and the count properties of number marking would result in a semantic contradiction; a structure cannot be both mass and non-mass at the same time. In other words, a count structure above a mass suffix is uninterpretable¹⁷. This is depicted in (46).

- (46)* drie suiker-werk-en
 three sugar-WORK-PL



Summing up, I have proposed that the collective suffix is marked for the feature [mass]. This property prohibits collective mass nouns from entering a count structure; the result would yield a semantic contradiction. As such, collective suffixes are flavors of n° , i.e.

¹⁷ Note that the structure is syntactically derivable. The result, however, is uninterpretable (see Gajewski 2009 on the illicitness of structural contradictions and tautologies).

they are categorial heads that affect the amount of structure than can be merged in the nominal domain (cf. Folli&Harley 2005; Kallulli 2007 for a comparable approach in the verbal domain).

5.2 Another [mass] affix

Support for the claim that derivational affixes can restrict count structures comes from the existence of a bona fide affix which has the same effect. In this section I show that collective suffixes are not an isolated case in having the feature [mass]. There is an affix in Dutch which shows similar behavior. This prefix is *ge-*. It serves to create abstract eventive nouns¹⁸. These nouns can either be paraphrased as ‘the continuous or repetitive action of the root’ (as in (47), (49) and (50)) or as ‘the continuous expression of the root (in a conversation)’, as in (48)¹⁹. The process is highly productive (see Trommelen en de Haas 1993:85 for more details)²⁰.

(47) het getik van de klok
the GE-tick of the clock
‘the ticking of the clock’

(48) het gemaar van mijn collega
the GE-but of my colleague
‘the endless comments of my colleague’

¹⁸ The prefix *ge-* has homonyms that serve different functions in Dutch (see Trommelen en De Haas 1993). I disregard those here.

¹⁹ In traditional morphological descriptions it is mentioned that *ge-* attaches to verbal stems (whereby example (48)) would be an exception. In the Exo-Skeletal Model it would be said that *ge-* assigns a verbal status to the root with which it combines (see Borer 2009). The Exo-Skeletal Model thus does not need to assume that example (48) is an exception to the rule.

²⁰ These derivations often have a pejorative connotation, as in (48) and (49), but this is not necessarily the case (see (47) and (50)).

(49) het gebabbel van de studenten
the GE-babble of the students
'the babbling of the students'

(50) het gefluit van de vogeltjes
the GE-whistle of the bird-DIM²¹-s
'the whistling of the birds'

Crucially, such derivations are highly ungrammatical in count structures. Examples are given below. (Note that the cardinal and the plural marking force a count reading.)

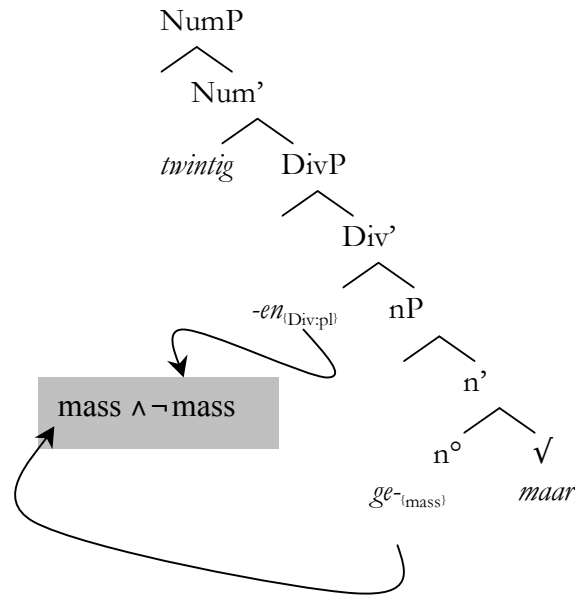
(51) *de duizend getikken van de klok
the thousand GE-tick of the clock

(52) *de twintig gemaren van mijn collega
the twenty GE-but of my colleague

These examples can be analyzed on a par with the collective nouns in section 5.1. If we assume that the prefix *ge-* carries the features [mass], it will give rise to a semantic contradiction in the presence of a count structure.

²¹ DIM = diminutive

(53)* *twintig gemaren*



This analysis shows that Dutch derivational processes may restrict the nature of the functional structure and that affixes may be marked for the feature [mass]. As such, it supports the view according to which it is the derivational status and the [mass] feature of the collective suffix which gives rise to its ungrammaticality in a count structure.

5.3 The collective suffix realizes the feature [atomic]

Section 5.1 argues that collective suffixes can force a mass reading. Note that this is not the only way to arrive at a mass reading in natural language. As is well-known, the absence of number marking or classifiers in a given structure equally result in mass readings (Doetjes 1997, Borer 2005a). An example of such a mass reading is given in (54).

(54) veel suiker
 much sugar
 ‘much sugar’

In the absence of number marking or classifiers as in (54), the default reading is a mass reading (Doetjes 1997, Borer 2005a).

One may wonder why UG should allow for two ways to derive a mass reading; viz. by means of a collective suffix or via the absence of number marking/classifiers. At first sight, this seems redundant and uneconomical. In what follows I point out that these two mass readings are semantically distinct, and hence not in competition.

Let us take a closer look at the mass reading that results from the absence of number marking. It allows for all nouns to be interpreted as mass. The famous example from Gleason (1965:136-137), which is given in (55), is illustrative in this respect.

(55) Mother termite is concerned over her child: “Johnny is very choosy about his food. He will eat book, but he won’t touch shelf.”

Note that in such structures, the noun always gets a ground reading. This effect was recognized by Pelletier (1979:5-6) and called the universal grinder. Such ground structures are characterized by divisivity, which states that there is always a proper subset with the same properties (Krifka 1989). For example, a subset of a certain amount of sugar is still sugar. This property, however, does not carry over to mass readings that result from the presence of a collective suffix. Collective mass nouns have salient subparts that cannot be divided any further. The collective noun *cutlery* can serve as an example in this respect. Although one item of cutlery, say a fork, is still cutlery, it is doubtful whether one tooth of a fork can still be called cutlery. I will therefore say that the collective suffix carries the feature [atomic], whereby the salient subparts should be understood as the atoms. In this respect, the two mass readings are semantically distinct;

one is always ground and divisive, the other one is atomic and has salient subparts²². In conclusion, the syntactic difference between the two mass readings is reflected semantically.

6. Conclusion

In this article I have shown that all Dutch collective mass nouns, both polymorphemic and monomorphemic, are products of derivation. I have argued that the derivational suffix realizes the features [mass] and [atomic]. Because of the former, it is semantically incompatible with a count structure. As a result of the feature [atomic] it is distinguished from mass readings that result from a sheer absence of features. The observation that the feature specification of the categorial head can impose restrictions on the functional structure is reminiscent of earlier proposals about the verbal domain (Folli & Harley 2005, Kallulli 2007).

I have argued that all Dutch collective mass nouns are derivations, i.e. they are not roots. Consequently, they are orthogonal to any discussion about roots. More specifically, they do not falsify the Exo-Skeletal claim which states that roots do not carry any morphosyntactic features. What appeared to be features on the root are in fact features added to the structure by derivation. More generally, this line of reasoning may be pursued to capture more (apparent) counterexamples. The article further opens up the possibility of rootless structures.

Acknowledgement

²² In the same vein it could be argued that the mass readings derived by the prefix *ge-* differ from the default mass readings by having an additional [eventive] feature.

I would like to thank Jeroen van Craenenbroeck, Guido Vanden Wyngaerd, Norbert Corver, Marjo van Koppen, Mieke Trommelen, Heidi Harley, Dalina Kallulli, Hagit Borer and Sarah Owayda for comments and discussion. I am further indebted to the audiences at the Syntax I Workshop in Brussels (January 28, 2010), at Linguistics in the Netherlands (February 6, 2010) and at the 28th West Coast Conference at the USC in LA (January 19-21, 2010). I would also like to thank Jeroen van Craenenbroeck for comments on earlier versions of this article. Needless to say, all errors are mine.

References

- Acquaviva, Paolo. 2008. *Lexical Plurals. A Morphosemantic Approach*. OUP, Oxford.
- Bobaljik, J. D. & H. Thráinsson. 1998. *Two heads aren't always better than one*. *Syntax* 1(1), 37-71.
- Borer, Hagit. 2005a. *In Name Only: Structuring Sense vol I*. OUP, Oxford.
- Borer, Hagit. 2005b. *The Normal Course of Events: Structuring Sense vol 2*. OUP, Oxford.
- Borer, Hagit. 2009. *Roots and categories*. Talk presented at the 19th Colloquium on Generative Grammar, University of the Basque Country, April 1-3, 2009.
- Chomsky, Noam. 1995. *The Minimalist Program*. MIT Press, Cambridge, MA.
- Corver, Norbert. 2008. *Uniformity and diversity in the syntax of evaluative vocatives*. *Journal of Comparative Germanic Linguistics* 11(1), 43-93.
- Den Dikken, Marcel. 2008. *Directions from the GET-GO: On the syntax of manner-of-motion verbs in directional constructions*. Talk presented at 'Expressions of posture and motion in the Germanic languages', Facultés Universitaires Saint-Louis, Brussels, October 2008

- de Vries, M. et al. 2001. *Woordenboek der Nederlandsche Taal*. Sdu Uitgevers, 's-Gravenhage.
- Doetjes, Jenny. 1997. *Quantifiers and selection: On the distribution of quantifying expressions in French, Dutch and English*. Leiden: Leiden University PhD. Dissertation.
- Embick, David & Alec Marantz. 2006. *Architecture and Blocking*. Ms., Upenn & MIT.
- Folli, Raffaella & Heidi Harley. 2005. *Flavors of v*. In: Kempchinsky, Paula & Roumyana Slabakova (eds.) *Aspectual Inquiries*. Kluwer, Dordrecht. pp. 95-120.
- Gajewski, Jon. 2009. *F-redundancy and Unacceptability*. Ms., University of Connecticut.
- Gleason, H.A. 1965. *Linguistics and English Grammar*. Holt Reinhard Winston of Canada, Toronto, Canada.
- Halle, Morris & Alec Marantz. 1993. *Distributed Morphology and the pieces of inflection*. In: *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, ed. by Kenneth Hale & Samuel Jay Keyser, MIT Press, Cambridge, MA, pp. 111-176.
- Kallulli, Dalina. 2007. *Rethinking the Passive/Anticausative Distinction*. *LI* 38(4), 770-780.
- Kayne, Richard. 2005. *Some notes on comparative syntax, with special reference to English and French*. In: Cinque, Guglielmo & Richard Kayne (eds.) *The Oxford handbook of comparative syntax*. OUP, Oxford.
- Krifka, Manfred. 1989. *Nominal reference, temporal constitution and quantification in event semantics*. In: R. Bartsch, J. van Benthem, P. von Stechow (eds.), *Semantics and Contextual Expression*, Foris Publication, Dordrecht.
- Myers, Scott. 1984. *Zero-derivation and inflection*. In: Speas, Margaret & Richard Sproat (eds.), *Papers from the January 1984 MIT workshop in morphology* (= MIT Working

- papers in linguistics 7), Department of Linguistics and Philosophy, MIT, Cambridge, MA. p. 53-69.
- Noyer, Rolf. 1992. Features, positions and affixes in autonomous morphological structure. MIT PhD dissertation, Cambridge, MA.
- Pelletier, Francis Jeffrey. 1979. Non-singular reference: some preliminaries. In: Francis Jeffrey Pelletier (ed.) Mass terms: some philosophical problems. D. Reidel Publishing Company, Dordrecht.
- Pesetsky, David. 1995. Zero syntax. MIT Press, Cambridge, MA.
- Schoorlemmer, Erik. 2009. Agreement, dominance and doubling. The morphosyntax of DP. Leiden University PhD. Dissertation, Leiden.
- Thráinsson, H. 1996. On the (non-)universality of functional categories. In: Werner, A., e.a. (eds.) Minimal ideas. John Benjamins, Amsterdam. pp. 253-281.
- Veen, van P.A.F. & N. van der Sijs. 1997. Etymologisch woordenboek: De herkomst van onze woorden. Van Dale Lexicografie, Utrecht/Antwerpen.
- Vries, de J. 1958. Etymologisch woordenboek: waar komen onze woorden en plaatsnamen vandaan? Uitgeverij Het Spectrum, Utrecht.