Size Matters: Towards a Syntactic Decomposition of Countability

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1. Introduction[1]

This paper is a study on the features and heads that determine countability in the Dutch DP. More specifically, I will discuss the morphosyntax of two types of count readings: the kind reading (1) and the unit reading (2).

1) I studied **two chocolates**: a low fat variety and a normal one.
2) Grandma gave me **two chocolates**: one for me and one for my sister.

The first reading can be paraphrased as *a kind of* and is thus referred to as the kind reading. Kinds are typically countable as individual concepts (cf. the use of the cardinal in (1)), but not measurable. Hence, no judgments can be given on the size of a kind, as can be seen in (3). The second reading can be paraphrased as *a piece of / a portion of* and is here referred to as the unit reading. Units are typically countable and measurable objects, as can be seen in (4).

3) *I studied **two small chocolates**: a low fat variety and a normal one.
4) Grandma gave me **two small chocolates**: one for me and one for my sister.

In this paper, I will show that both readings can be derived from the interplay between two morphosyntactic features.

This paper is organized as follows. In section 2 I first present background knowledge on the syntactic analysis of the mass-count distinction. I will then introduce the two different count readings (1)-(2) and I will show that previous analyses do not suffice to account for these data. In section 3 I present my analysis. I will propose that countability is derived from two syntactic features. The first one is the dividing feature [Div] that has been proposed by Borer (2005). It divides stuff into countable items. The second feature is [Size]. It assigns size to stuff and creates measurable portions. In section 4 I discuss the semantics of the unit reading in constrast with partitive readings. Section 5 concludes.

2. Two count readings: kinds and units

In this section I will first briefly discuss Borer's (2005) analysis of the mass-count distinction. Secondly, I will focus on two morphologically distinct count readings in Dutch. These data will lead to the conclusion that the traditional split between mass and count readings does not suffice to cover these more fine-grained distinctions.

2.1. The mass-count distinction

Borer (2005) proposes that the mass-count distinction does not stem from the lexicon, but is derived in syntax. The hypothesis that nouns are not lexically marked as mass or count receives support from the fact that nouns that are traditionally categorized as count nouns can easily occur in mass readings.

5) Grandma has three dogs.
6) There is dog all over the wall.

In (6) the noun *dog* that is prototypically seen as a count noun (cf. (5)) occurs in a mass reading, where it gets the interpretation that the dog has exploded. Conversely, nouns that are traditionally categorized as mass nouns can easily occur in count readings.

7) We produce linen.
8) This is a good linen.

The noun *linen* is traditionally seen as a bona fide mass noun (cf. (7)). Nevertheless, it can be used without any problem in a count reading as in (8). The fact that all nouns can occur in both mass and count readings is not directly explained if they are marked as count or mass in the lexicon. Borer therefore proposes that all nouns are lexically unmarked and that the mass-count distinction is a product of syntax. Specifically, count readings can be derived by merging the syntactic head Div°, i.e. a dividing head, to the NP. Borer proposes that this head can be realized as the indefinite article in singular count readings (9) or as plural marking in plural count readings (10). The absence of Div° yields the default mass reading (11).

9) There is a chicken in the garden.
10) There are chickens in the garden.
11) There is chicken on my plate.

To summarize, Borer proposes a syntactic derivation of the mass-count distinction. She analyzes the mass reading as the default one. The count reading is syntactically derived by merging Div°.

2.2. Kind and unit readings

The addition of an indefinite article (13) or plural marking (14) to English mass nouns (12) yields count readings that are ambiguous between kind and unit readings.

12) I tasted chocolate.

13) I tasted a chocolate.
    kind: 'I tasted a certain kind of chocolate.'
    unit: 'I tasted a piece of chocolate.

14) I tasted the chocolates.
    kind: 'I tasted the different kinds of chocolate.'
    unit: 'I tasted the pieces of chocolate.

By adding an indefinite article (16) or plural marking (17) to a mass reading (15) in Dutch, the same ambiguity does not arise, but only the kind reading occurs.

15) Ik   proefde   chocolade.
    I   tasted   chocolate
    'I tasted chocolate.'

16) Ik   proefde   een chocolade.
    I   tasted   a   chocolate
    'I tasted a certain kind of chocolate.'
    # 'I tasted a piece of chocolate.'

17) Ik   proefde   chocolades
    I   tasted   chocolate-PL
    'I tasted different kinds of chocolate.'
    # 'I tasted pieces of chocolate.'

   In order to derive a unit reading in Dutch, one needs not only to add the indefinite article or plural marking to the mass reading, but also the diminutive (18)-(19) (cf. Wiltschko 2005).

18) Ik   proefde   een chocola-tje.
    I   tasted   a   chocolate-DIM
    'I tasted a piece of chocolate.'
    # 'I tasted a certain kind of chocolate.'

19) Ik   proefde   chocola-tje-s.
    I   tasted   chocolate-DIM-PL
    'I tasted pieces of chocolate.'
    # 'I tasted different kinds of chocolate.'

   (16)-(19) show that the semantic distinction between kind and unit readings goes hand in hand with a morphological distinction in Dutch. The absence of the diminutive forces kind readings, the presence of the diminutive results in unit readings. This morphological distinction suggests that the kind-unit opposition is also a product of syntax. This means that syntax not only derives the mass-count distinction as Borer (2005) suggests, but also the kind-unit distinction within the count readings. Note that Borer's Div°-head does not suffice to account for these Dutch data. Moreover, Borer's structure does not provide a head that can host the diminutive morpheme. In the next section I will therefore propose an additional head Size° that hosts the feature [Size] and that can be morphologically realized as the diminutive morpheme.

3. The feature [Size]

   In this section I show that we can account for the three-way split between the mass reading, the count kind reading and the count unit reading if we assume that countability results from the interaction between two features, [Div] and [Size]. I will further propose that the diminutive is an overt realization of [Size].
   Recall from the definition of kind and unit readings (cf. §1) that both readings are mainly distinguished by the property of being measurable. Kinds denote unmeasurable countable concepts, whereas units refer to measurable individual objects. Moreover, we have seen for Dutch that a size marker, i.e. the diminutive, is the morphological means to set these readings apart from each other (cf. § 2.2). I therefore propose that this size marker hosts a feature [Size] that contributes measurability to the structure of the NP.
   The interaction between the two features [Div] and [Size] yields the following hypothetical possibilities: (i) both features are absent, (ii) only [Div] is present, (iii) both [Div] and [Size] are present and (iv) only [Size] is present. I will show that (i) the absence of both features yields the default mass reading, (ii) that the presence of [Div] in the absence of [Size] results in count kind readings, (iii) that the presence of both features generates count unit readings and (iv) that the presence of [Size] in the absence of [Div] is illicit. I assume that structures are related to readings (mass, count kind, count unit) and not to nouns. In other words, all nouns can enter all structures (cf. Borer 2005).

To detect the presence of these heads, I use the possible presence of overt number marking and size marking, i.e. the diminutive, as a diagnostics. Recall Borer's (2005) proposal that the indefinite article and plural marking are overt realizations of [Div] and that both are hosted by Div°. I follow Borer in the assumption that plural marking indicates the presence of [Div]. However, I assume, contra Borer that [Div] is realized as a null morpheme for the singular. I further assume that the diminutive is an overt realization of [Size] and that it is hosted by Size°.

3.1. Both features are absent: mass readings

Mass readings (20) do not allow for plural marking (21), nor do they support diminutives (22).

20) Ons bedrijf   produceert   **vilt**.
    our company produces   felt
    'Our company produces felt.'

21) # Ons   bedrijf   produceert   **vilt-en**.
      our   company produces   felt-PL
    (disallowed under a mass reading)

22) * Ons   bedrijf   produceert   **vilt-je**.
      our   company produces   felt-DIM

From the absence of number marking and the diminutive I conclude that the features that are expressed by these morphemes are equally absent from the structure. Mass readings thus have a structure that lacks both Div° and Size°. This is represented in (23).[2]

23) [$_{DP}$ [$_{D'}$ D° [$_{NP}$ [$_{N'}$ N°]]]]

3.2. Only [Div] is present: Kind readings

Kind readings allow for plural marking (24), but they do not support diminutives (25).

24) Ons bedrijf   produceert   **vilt-en**.
    our company produces   felt-PL
    'Our company produces kinds of felt'

25) # Ons   bedrijf   produceert   **een vilt-je**.
      our   company produces   a   felt-DIM
    (disallowed under a kind reading)

From these facts one can conclude that kind readings are syntactically derived by merging Div° but not Size°. This structure can be seen in (26).

26) [$_{DP}$ [$_{D'}$ D° [$_{DivP}$ [$_{Div'}$ Div° [$_{NP}$ [$_{N'}$ N°]]]]]]

This structure is the same for kind readings that seem to be derived from nouns that are traditionally called run-of-the-mill mass nouns (such as (24)), as for nouns that are seen as bona fide count nous as in (27).

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[2] Projections that are irrelevant for the issues under discussion are left out.

27) De   poedel   en   de   jack russel   zijn **honden**
    the poodle   and the jack russel   are dog-PL
    die   ook geschikt zijn voor de   jacht.
    that also suitable   are for the hunting
    'The poodle and the jack russel are the kinds of dogs that are also suitable for hunting.'

28) [$_{DP}$ [$_{D'}$ [$_{DivP}$ [$_{Div'}$ hond-en$_{\{Div\}}$ [$_{NP}$ [$_{N'}$ ~~hond~~]]]]]]

In (28) the noun undergoes head movement to Div°, where it merges with number marking.

3.3. Both features are present: unit readings

Unit readings allow for both plural marking and diminutives (29).[3]

29) Er   kleven   **vilt-je-s**   onder   de   stoelpoten.
    there stick   felt-DIM-PL   under   the chairlegs
    'There are pieces of felt under the chairlegs.'

The possible cooccurrence of both these morphemes strongly suggest that unit readings are derived from a structure that has both Div° and Size°, as in (30).

30) [$_{DP}$ [$_{D'}$ D° [$_{DivP}$ [$_{Div'}$ Div° [$_{SizeP}$ [$_{Size'}$ Size° [$_{NP}$ [$_{N'}$ N°]]]]]]]]]

Again, this structure is the same for all nouns, as in (31)-(34)[4].

31) Ik   heb **de   hond-je-s**   geaaid.
    I   have the dog-DIM-PL   petted
    'I have petted the little dogs.'

32) [$_{DP}$ [$_{D'}$ de [$_{DivP}$ [$_{Div'}$ hond-je$_{\{Size\}}$-s$_{\{Div\}}$ [$_{SizeP}$ [$_{Size'}$ ~~hond-je~~$_{\{Size\}}$ [$_{NP}$ [$_{N'}$ ~~hond~~]]]]]]]]

Singular count readings of non-small units have the same structure.

33) Ik   heb **de   hond**   geaaid.
    I   have the dog   petted
    'I have petted the dog.'

34) [$_{DP}$ [$_{D'}$ de [$_{DivP}$ [$_{Div'}$ hond-$\varnothing_{\{Size\}}$-$\varnothing_{\{Div\}}$ [$_{SizeP}$ [$_{Size'}$ ~~hond-$\varnothing$~~$_{\{Size\}}$ [$_{NP}$ [$_{N'}$ ~~hond~~]]]]]]]]

The structure in (34) is identical to the one in (32). The difference between the two examples lies in the fact that (32) has overt plural marking, whereas (34) has a null morpheme for the singular. Moreover, (32) has an overt diminutive, whereas (34) has a null morpheme for unmarked non-small size.

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[3] Note that the diminutive does not contribute any affectiveness to examples such as (29). In affective readings, the diminutive is licit in many more contexts, as pointed out to me by Jenny Doetjes. In exclamations, for example, even kind readings allow for a diminutive, e.g. *Wat een lekker wijntje!* Lit. 'what a tasteful wine-DIM' 'Such as great wine!' In motherese, it is even possible to attach a diminutive to mass nouns , e.g. *Drink je melkje op!*, Lit. 'drink you milk-DIM up' 'Finish your mik'. I will not discuss this affect diminutive. (Cf. Steriopolo (2008) for a comparison between size diminutives and affect diminutives in Russian.)

[4] As was shown in this article, Dutch nouns, such as *chocolate*, always require the diminutive in order to get the count unit reading, whereas others, such as *dog* do not. I do not believe this shows that *dog* and *chocolate* are equipped with features in the lexicon. I rather think that this difference is due to our mental encyclopedia. This discussion, however, reaches far beyond the scope of this article.

3.4. Only [Size] is present: does not exist

Things that have size and that are measurable are, as a matter of conceptual necessity, individual items by definition. Hence, if something acquires size, it automatically gets individuality. In other words, the presence of [Size] implies the presence of [Div]. From this follows the correct prediction that every Dutch diminutive is also pluralizable.[5]

4. The unit reading versus the partitive construction

In this short section, I discuss the fact that unit readings typically refer to objects that have been produced as individual items and that do not imply a part-whole relation to a larger entity. This contrasts with the semantics of partitive constructions. The NPs in (35) refer to items that have been produced as small, individual portions.

35) Ik at **chocola-tjes** / **een taart-je**.
     I ate chocolate-DIM-PL a pie-DIM
     'I ate chocolates / a small pie.'

These interpretations contrast with those of partitive constructions, that typically imply a part-whole relation (36).

36) Ik at **een stuk taart**.
     I ate a piece pie
     'I ate a piece of pie.'

The partitive construction in (36) refers to a piece that has been cut off from a larger pie. In other words, whereas unit readings refer to individual items that imply no part-whole relation to a larger entity, partitive constructions typically refer to such a larger entity.

5. Conclusion

In this article I have proposed a fine-grained morphosyntactic analysis of countability phenomena in Dutch. I have shown that countability not only relies on a distinction between mass and count readings. Instead, I have shown that within the count readings a further distinction should be made between kind and unit readings. We have seen that these semantic differences go hand in hand with morphological properties: mass readings allow for neither number marking or size marking, kind readings allow for number marking, but not for size marking and for unit readings both number and size marking are licit. I proposed that the diminutive is an overt realization of [Size].

I observed an interplay between two morphosyntactic features, viz. Borer's (2005) [Div] feature and a [Size] feature to derive the two types of count readings. The feature [Div] assigns countability, the feature [Size] assigns measurability. I further assumed that both features are hosted by designated heads. In this way, I accounted for the semantic and morphological properties of the three different readings on the basis of different syntactic structures. The mass reading that lacks both [Div] and [Size] is neither countable nor measurable. The kind reading that has [Div], but not [Size] is countable, but not measurable. The unit reading that has both features is both countable and measurable. The analysis thus shows that we can account for the semantic, syntactic and morphological properties of countability by means of a fine-grained compositional approach.

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[5] Several people pointed out to me that for this reason it would be more logical to assume that Size° is realized above Div°. I agree that this would indeed satisfy our intuitions, but I am reluctant to go against the surface order of the morphemes as long as we do not precisely understand the semantics of the system.

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