

# The Semantic Mass-Count Distinction for Categories Lacking a Syntactic Mass-Count Distinction

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Draft November 14, 2019

The mass-count distinction is a syntactic distinction among nouns and is generally taken to have semantic content, that is, to reflect a semantic mass-count distinction. Such a semantic mass-count distinction is standardly taken to reside in mereological properties of the extension of nouns or of the entities (or entities-in-situations) in those extensions. Consisting of atoms is characteristic of extensions of singular count nouns on the first view, consisting of entities having a boundary or integrity of some form (in situations of reference) has been taken to characterize singular count noun extensions on the second view. Theories of the semantic mass-count distinction of either sort generally face considerable challenges from classifier languages such as Chinese, which lack a syntactic mass-count distinction among nouns and in which all nouns are, it seems, treated as ‘mass’ or ‘number-neutral’, regardless of their extensions or the entities they describe as well from ‘object mass nouns’, nouns such as *furniture* or *police force*, to which standard criteria of mass nouns generally do not apply.

Yet the syntactic mass-count distinction certainly does go along with a semantic mass-count distinction of some sort. This raises a general question, which has not been pursued as yet, namely how the semantic distinction applies to syntactic categories lacking a mass-count distinction in languages like English (i.e. languages that display a syntactic mass-count distinction for nouns). Do such categories exhibit the same semantic mass-count distinction even if it is not reflected syntactically? That question has often been answered with respect to events described by either verbs or sentences. The domain of events, so the general view, displays the same semantic mass-count distinction as nouns, with achievements and accomplishments classifying semantically as count and activities and states as mass.

This paper will challenge that view, more precisely and more generally, the view that categories lacking a syntactic mass-count distinction display a semantic mass-count distinction. Just as nouns in classifier languages such as Chinese classify as number-neutral (or mass), so do verbs in English with respect to their Davidsonian event argument place. Verbs display a range of properties indicative of mass rather than count status, in particular

the form of adverbial quantifiers, which are those of classifier languages, and, in German, the failure to support plural anaphora and the selection of relative pronouns indicative of mass rather than count. That is, syntactic categories lacking a (syntactic) mass-count distinction classify semantically as number-neutral, rather than dividing into mass and count. This behavior generalizes to other categories lacking a syntactic mass-count distinction, such as that-clausal, simple number words, and pure quotations. That is, syntactic categories lacking a (syntactic) mass-count distinction classify semantically as number-neutral, rather than dividing into mass and count. This generalization also holds for non-referential uses of NPs on which semantic properties of noun extensions or referents won't matter, such as NPs used as complements of intensional transitive verbs, as measure-phrases, and as predicative complements. On such uses, NPs classify as number-neutral, rather than count, regardless of the semantic properties one may attribute to their contents or intensions.

These generalizations support the importance of number-neutrality as a semantic notion and shows the presence of classifier systems in language such as English in the non-nominal domain. Number-neutrality, the paper will suggest, is best accounted for in terms of a primitive notion of unity or singularity, which is associated with the syntactic count category and which is absent in number-neutral domains. It rejects the standard approaches to the semantic mass-count distinction, either based on extensional mereological properties of extensions or else properties of entities (such as being an integrated whole).

## 2. The standard view about Davidsonian events and the mass-count distinction

There are two sorts of standard views about the semantic content of the mass-count distinction among nouns:

- [1] the extension-based approach and
- [2] the object-based approach.

The extension-based approach formulates the distinction between singular count, plural and mass nouns in terms of properties of their extensions using extensional mereology (Link 1983, Rothstein 2010, Champollion/Krifka 2017). A common version of the approach is given below, making use of the proper part relation  $<$  and the sum formation operator (on sets)  $\oplus$ :

### (1) Extensional mereological account of the mass count distinction

- a. For a singular noun  $N$ ,  $[N]$  is atomic, i.e.  $\forall x(P(x) \rightarrow \forall y(y < x \rightarrow \neg P(y)))$
- b. For a plural noun  $N_{\text{plur}}$ ,  $[N_{\text{plur}}] = \{x \mid \exists P (P \neq \emptyset \ \& \ P \subseteq [N] \ \& \ x = \oplus P)\}$

c. For a mass noun  $N$ ,  $N$  is cumulative  $P$  ( $P \neq \emptyset \ \& \ P \subseteq [N] \rightarrow \bigoplus P \in [N]$ ) and not atomic.

Sometimes a stronger condition than lack of atomicity is imposed on mass nouns, namely divisiveness (a predicate  $P$  is divisive iff  $\forall x(P(x) \rightarrow \forall y(y < x \rightarrow P(y)))$ ).

The extension-based approach to the mass-count distinction notoriously problematic in two respects. First, atomicity does not generally hold, for example not for count nouns like *twig*, *sequence* or *part*, where an element in the extension of the noun may have proper parts that are in the extension again (Moltmann 1997, 1998, Zucchi/White 2001, Rothstein 2010). Moreover, atomicity holds for object mass nouns such as *police force*, *furniture*, *personnel*, *clothing*, *jewelry* etc., a major problem for the approach (Cohen to appear).

The object-based approach to the mass-count distinction is based on properties of individual elements of count noun and mass noun extensions. Entities in the extension of singular count nouns come with a boundary, integrity or, better, perceived integrity or integrity in a situation of contextual information (Moltmann 1997, 1998). Entities in the extension of mass noun extensions lack a boundary or integrity (as perceived, or in a situation of information). The situation-based version of Moltmann (1997, 1998) is given below:

(2) Integrity-based characterization of the mass-count distinction

- a. If  $N$  is a singular count noun, then for a situation of reference  $s$  if  $[N]^s(x)$ , then is an integrated whole in  $s$ .
- b. For a plural noun  $N_{\text{plur}}$   $[N_{\text{plur}}]^s = \{x \mid \exists P (P \neq \emptyset \wedge P \subseteq [N]^s \wedge x = \bigoplus P)\}$
- c. If  $N$  is a mass noun, then for a situation of reference  $s$  if  $[N]^s(x)$ , then is not an integrated whole in  $s$ .

The object-based to the mass-count distinction faces difficulties of its own, in that there are nouns to which the notion of integrity is hardly, for example *amount*, *sum*, or *loose collection*. Moreover, the second approach faces similar difficulties for object mass nouns, whose extensions consists on entities with inherent integrity.<sup>1</sup>

There is a long tradition of classifying events into different types, or actionsarten, in particular distinguishing achievements and accomplishment from activities and states (Kenny 1963, Mourelatos 1978). A related distinction in semantics is that between telic and atelic VPs

<sup>1</sup> Perhaps situation-based approach of the second approach permits an account of object mass nouns, allowing the situation of reference to present the object of reference without conditions of integrity it may come with, 'leaving out' even essential conditions of integrity of the object of reference., see Cohen, to appear). Yet both types appear to be the only ones available for giving content to the syntactic mass-count distinction.

Verkuyl 1972): *run to the house* is telic, *run* itself atelic; *eat an apple* is telic, *eat apples* is telic. Bach (1986) explicitly argued that events divide into a mass and a count domain strictly parallel to that of the nominal domain, taking the extension-based approach (see also Krifka 1989 and Champollion 2017). Bach associates events not with verbs (as Davidsonian arguments), but rather takes sets of events to be the denotations of sentences (whose composition bears on the actionsart of the verb). The denotations of sentences are then classified parallel to that of nouns, with sentences classifying as being cumulative and divisive if they classify as mass (*John ran*), atomic if they classify as singular count (*John ran for one hour*) and as cumulative if they classify as plural (*John jumped*).

The fact that sentences rather than just verbs are classified in terms of the (semantic) mass-count distinction is in fact peculiar and makes the domain of events not parallel to the nominal domain. Thus, complex NPs could be classified in the same way with respect to the semantic mass-count distinction. But this is of course never done because it is nouns that are either mass or count syntactically. Applying the extension-based approach to the semantic mass-count distinction means that *the water in the glass* would classify as singular count, since it satisfies atomicity (no proper part of the entity that is the denotation of *the water in the glass* is also the denotation of *the water in the glass* (which refers to the maximal quantity of water in glass)). Moreover, *the water in the glasses* might satisfy the criterion for semantic plurality since the denotation of *the water in the glasses* is a fusion of entities that are referents of *the water in a glass* and as such classify as atoms (with respect to that description). However, the mass-count distinction is generally not applied to complex NPs that way.<sup>2</sup>

### 3. The number neutral status of Davidsonian events

For the reasons just given, I will focus on verbs, rather than sentences or other larger constituents when examining the domain of events with respect to the mass-count distinction.

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<sup>2</sup> In Moltmann (1997) I actually argued for a semantic mass-count distinction for complex NPs that is independent of the syntactic mass-count distinction, within the object-based approach. *The water in the glass* counts as an integrated whole in a situation of reference *s* (being a maximal quantity satisfy the property ‘water in the glass’ in *s*), *the water in the glasses* counts as a plurality of integrated wholes in a reference situation. In Moltmann (2016), I criticized that approach to the semantic mass-count distinction: even if the water in the glass’ is an integrated whole in a sense, it is never treated as ‘one’ for the purpose of counting. Yet, the notion of an integrated wholes in a situations is semantically relevant, for example for semantic selection. See Fn. 4.

Complex NPs have not been classified with respect to a semantic mass-count distinction within the extension-based approach, but only VPs and sentences.

The syntactic mass-count distinction consists in that count nouns come with the plural, but mass nouns don't. However, a number of further criteria generally taken to distinguish mass and count nouns, criteria that may be taken indicative of a syntactic or a semantic distinction. I will focus on the following four criteria:

[1] Choice of determiners and quantifiers

In English, mass nouns go along with the quantifiers *much* and *little*, rather than *many* and *few*. The same holds for verbs in the sense that *much* and *little* act as adverbial modifiers, but not *many* or *few*. *Much* and *little* apply as adverbial modifiers to an extent regardless of the actionsart of the verb:

- (3) a. John slept / worked too little / \* too few.  
       b. John slept / worked too little / \* too much.  
 (4) a. John jumped too much / \* too many.  
       b. John stumbled only a little / \* too few.

[2] Unlike count nouns, mass nouns do not take numerals. The same holds for verbs in the sense that simple number words do not form adverbials, rather they have to modify the count noun *time*, for events to be counted. This holds again regardless of the actions art of the verb: number words as adverbials are excluded even with clearly telic verbs:

- (5) a. John jumped.  
       b. # John jumped three times.

*Times* also allows the count quantifiers *few* and *many* to apply:

- (6) a. John worked a few times.  
       b. John stumbled many times.

With telic verbs, *times* imposes a condition on temporal separation, ensuring countability:

- (7) a. John slept three times.  
       b. Mary worked out three times.

*Time* is on a par with numeral classifiers in a language such as Chinese, serving to make a numeral applicable to a non-count category, though, in addition, imposing *times* a condition of temporal separation, permitting countability even for telic verbs.

*Time* exhibit other properties of characteristic of sortal numeral classifiers, such as not allowing adjectival modifiers (Cheng/Sybesma 1999):

- (8) a. \* John stumbled three unusual times.  
 b. \* We met three beautiful times.

Verbs thus behave like nouns in Chinese requiring a sortal classifier to be countable, and that regardless of their lexical content.<sup>3</sup>

[3] Frequency adverbials

Verbs (of any actions art) allow for frequency adverbials, which one might be tempted to classify as count quantifiers:

- (9) a. John stumbled frequently / rarely.  
 b. John slept frequently.

However, *frequently* and *rarely* do not just count events; rather they count events at particular, temporally separated occasions. Frequency adverbials come with a particular lexical condition ensuing countability and do not presuppose a countable domain as such.

In fact, *frequent* is not a count expression in the first place. *Frequent* can modify event mass nouns (Moltmann 1997) as in (10a, b), as well as of course plural nouns as in (10c):

- (10) a. the frequent rain  
 b. the frequent fog in this region  
 c. the frequent rainfalls

Here *frequent* again imposes a condition of temporal separation. *Frequently* thus is a number-neutral quantifier or modifier, imposing condition on temporal separation of parts.

*Frequently* is not the only apparent count quantifier applying to mass nouns. In German *vieles* ‘many’ s a quantifier that is syntactically mass (being singular), yet has the meaning of

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<sup>3</sup> Cinque (2006) argues that temporal measure words such *years* and *days* also act as numeral classifiers in English.

‘many’ and contrasts with *viel* ‘much’ (Moltmann 1997). Thus *vieles* in (11a) presupposes the wood being divided into discrete units (of one sort or another), but not *viel* in (11b):

(11) a. *vieles Holz*

many wood

‘many sorts of wood / pieces of wood’

b. *viel Holz*

‘much / a lot of wood’

*Vieles* thus is a quantifier whose lexical meaning imposes conditions of discreteness on the domain it applies to, ensuring countability. With such a lexical meaning *vieles* does not require count status of the noun with which it occurs. Though *vieles* does not apply as an adverbial to events, it illustrates the possibility for a quantifier that is syntactically mass to impose countability on a domain by way of its lexical meaning.

There is one other quantifier in German that imposes countability lexically, a quantifier that does apply to events as well. This is the floated quantifier *beides* ‘both’. *Beides* can act as a floated quantifier with respect to a mass NP, ranging over two contextually well-individuated subquantities:

(12) *Hans kaufte Wasser und Bier. Das war beides sehr billig.*

‘John bought water and beer. It was both very cheap.’

*Das beides* can also relate to events:

(13) *Hans schrieb einen Brief und unterzeichnete ihn. Er hat das beides gestern gemacht.*

‘John wrote a letter and signed it. He did it both yesterday.’

In (13), *das* ‘that’ is a mass pronoun. *Beides* is singular and thus syntactically mass as well, but semantically it is count, quantifying over two contextually individuated subquantities of a quantity in question.

[5] Support of plural anaphora in German

Another criterion for the number-neutral status of verbs (with respect to their event argument) comes from support of plural anaphora from some languages. Geiss (1975) observed that

conjoined VPs do not support plural anaphora in a subsequent sentence (see also Moltmann 1997):

(14) John opened the door and closed the window. He did them / that an hour ago.

(14) in itself, though, cannot be taken indicative of the number-neutral status of event arguments since in English conjunctions of definite mass NPs do not support plural anaphora:

(15) a. John drank the water and the wine. He drank that / ok them quickly.'

b. John ate the turkey and the meat. He ate that / ok them alone.'

However, in other language such as German, conjunctions of definite mass NPs do not support plural anaphora, and thus failure to support of plural anaphora in such languages does qualify as a criterion of mass status:

(16) a. Hans trank das Wasser und das Bier. Er trank es (beides) / ?? sie schnell.

b. Hans ass den Truthahn und das Fleisch. Er ass das / ??? sie allein

In German, plural anaphora require an antecedent that is syntactically plural, whereas in English plural anaphora don't (though they may require an antecedent that is semantically plural).<sup>4</sup> Note that German permits *es beides* in (16a), a pronoun-quantifier combination that is syntactically mass, but semantically count.

In German, the translations of (14) are equally bad. Thus, lack of plural anaphor, given languages such as German, is indicative that telic verbs do not classify as count, but rather as number-neutral.

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<sup>4</sup> What matters for plural anaphora in English is that the antecedent stands for a plurality of entities presented as having a boundary or more generally being integrated wholes, in the sense of Moltmann (1997). One way of being presented as an integrated whole is by being described by a singular count noun; another way is by being specified as a maximal entity in the context that consists in entities that share a property, such as being water or being beer in (15a, b). Thus, (15a) contrasts with (i):

(i) ??? John drank some water and some wine. He drank them quickly.

Pluralities of integrated wholes in such a sense is also what certain predicates like *compare* and *distinguish* select (Moltmann 1997):

(ii) a. John compared the wine and the beer / the two drinks / ??? the liquid.



[6] There is another indication in German for the number-neutral status of verbs, and that is the choice of relative pronouns. German makes a distinction between two sorts of relative pronouns, w-pronouns and d-pronouns. The generalization basically is, count NPs select d-pronouns, whereas non-definite mass NPs select w-pronouns:<sup>5</sup>

- (17) a. das Kind, das / \* was  
       ‘the child that’  
       b. alles / etwas Wasser, was / \* das im Behaelter war  
       ‘all / some water that was in the container’  
       c. das Wasser, das / \* was im Behaelter war  
       ‘the water that was in the container’

More precisely, neutral non-definite mass NPs select *was*, but not masculine or feminine mass NPs, which select *das*:

- (18) a. aller Sand / Wein / Unfug, der / \* was  
       ‘all (the) sand (masc) / Wine (masc) / nonsense (masc), that’  
       b. alle Farbe / Fluessigkeit / Schoenheit , die / \* was  
       ‘all (the) color / liquid / beauty that’

Provided the category is neutral, that is, has unmarked gender, the selection of w-pronouns is indicative of syntactic number-neutral status (though semantically definiteness may impose integrity making w-pronouns inapplicable).

The observation then is that verbs always go with w-pronouns rather than d-pronouns:

- (19) a. Hans lachte, was / \* das er selten tut.  
       ‘John laughed, which he does rarely’.  
       b. Hans klopfte an der Tuer, was / \* das er selten tut.  
       ‘John knocked at the door, which he rarely does.’

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<sup>5</sup> The selection of d-pronouns by definite mass NPs may be attributed to the fact that definite mass NPs stand for quantities that are integrated wholes and thus are semantically count on the object-based approach to the semantic mass-count distinction.

The choice of w-pronouns thus is a sufficient though not necessary condition for the status of a category as mass or rather number-neutral.

The conclusion thus is that verbs regardless of their lexical content and semantic environment classify as number-neutral. This means that the two standard view of the semantic mass-count distinction, which divides verbs into mass and count, do not get the distinction right. What makes something countable or ‘one’ in the context of the use of natural language, it appears, is not actual or perceived properties of entities or the applicability of an expression to parts or sums, but rather a primitive notion of unity associated with the category of count nouns. This, of course, is not so for the ontology associated with perception and cognition where conditions of form or ‘gestalt’ are constitutive of unity and thus countability.

#### **4. Other categories or uses of categories lacking a mass-count distinction**

Verbs are not the only category lacking a syntactic mass-count distinction to which other criteria for mass and count may apply. There are various expressions that can act as complements of verbs, but do not act as referential NPs, and to them some of the criteria for number-neutrality can be applied as well. These are embedded clauses, NPs used intensionally, predicative NPs, measure phrases, simple number words, and pure quotations.

##### **4.1. Clauses**

It is a common view that *that*-clauses and other clausal complements act as referential term standing for single entities that are propositions. However, there are also alternative views according to which clauses do not have that status, but have a non-referential function (e.g. acting predicatively Moltmann 2017). While this is not the place to discuss those views, it is clear that clauses as such are not referential NPs and even more obviously do not display a syntactic mass-count distinction.<sup>6</sup> It is then not surprising that they show the two diagnostics for number-neutrality from German. First, conjoined clauses fail to support plural anaphora, in German as in fact in English (Moltmann 1997):

- (20) a. John believes that S and that S' he has believed that / \* them for a long time.  
 b. John wants to swim and to dance. He wants that / \* them badly.

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<sup>6</sup> It has been argued that clauses sometimes are headed by a DP head (Kastner 2015), though this still does not mean that they engage in a mass-count distinction.

Second, clauses in German only take w-pronouns, not d-pronouns:

(21) Hans glaubt, dass es regnen wird, was Mary auch glaubt.

‘John believes that it will rain, which Mary believes too.’

Finally, quantifiers in place of clauses are mass (*much, little*) rather than count, unless they modify the noun *thing*, which again acts as a kind of sortal classifier:<sup>7</sup>

(22) a. John assumes little / too much.

b. John assumes too few / too many.

c. John assumes a few things / several things / many things.

Whether or not clauses have the status of referential terms, they are classified as number-neutral for the content they come with, whether they are well distinguished propositions or contents ordered by a relation of ‘part of’, which may satisfy mereological conditions standardly assumed to be characteristic of mass noun extensions.

#### **4.2. Intensional, predicative, and measure NPs, simple number words, and pure quotations**

There are other nonreferential complements for which the same generalization holds. One of them is intensional NPs. Intensional NPs, that is, NP complements of intensional transitive verbs have been considered quasi-referential, standing for intensional quantifiers that will be arguments of the embedding predicate. But there are also alternative views on which intensional NPs contribute differently to the meaning of the sentence, forming a complex predicate with the embedding verb. In any case, intensional NPs classify as number-neutral by taking w-pronouns and not supporting plural anaphora:

(23) a. Hans braucht eine Assistentin, was / \* die Bill auch braucht.

‘John needs an assistant, which Bill needs to.’

The same holds for predicative NPs:

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<sup>7</sup> In fact, the count quantifiers *few* and *many* require a silent noun restricting a contextually given domain. Thus (22b) can only be understood with *few* and *many* ranging over entities of a particular sort given in the discourse context.

(24) a. Hans ist ein Lehrer, was / \* das Bill auch ist.

‘John is a teacher, which Bill is too’.

b. Hans ist ein Vater und ein Lehrer. Bill ist das / \* sie auch.

‘John is father and a teacher . Bill is that / \* them too?’

Measure phrases such *two kilos* have been considered nonreferential, or at least in taking a semantic values not from the domain of entities (Rizzi 1990). Again, measure phrases show a classification as number-neutral, by taking w-pronouns:

(25) John wiegt 90 kilo, was / \* zuviel ist.

‘John weighs 90 kilo, which is too much.’

Moreover, simple number words in argument position, i.e., when used as (apparent) number-referring terms, take w-pronouns and do not support plural anaphora in German (Moltmann 2013a, 2017):<sup>8</sup>

(26) a. Zwei was / das eine Primzahl ist, ...

b. Drei und sieben sind nicht durch zwei teilbar. Sie / Das sind Primzahlen.

Again this is expected since number words used in argument position should not count as plural and as singular NPs that may still have adjectival status would not come with a mass-count distinction.

Finally, pure quotations show a classification as number-neutral, both in regard, to the choice w-pronouns in German and plural anaphora:

(27) a. ‘Rouge’ bedeutet ‘rot’, was ‘red’ auch bedeutet.

b. ‘Cher’ bedeutet ‘lieb’ und ‘teuer’, was ‘dear’ auch beides bedeuten kann.

Pure quotations are generally considered referential terms standing for expression types (however that may be achieved). But, again there are views according to which they are not

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<sup>8</sup> Number words in argument position have been considered nonreferential in Hofweber (2005) and Moltmann (2013a, b). But see Moltmann (2017) for a recent critique of that view.

referential, but rather form a complex a predicate with the embedding verb (Moltmann 2013a). In any case, pure quotations display the diagnostics of number-neutrality, which is expected since quotations should not classify as count syntactically.

## 5. The generalization

Taking the diagnostics from German serious, we can now state the following generalization: categories that lack a syntactic mass-count distinction classify as number neutral, regardless of their conceptual content and mereological properties of their extension or domain.

One question this raises is: what is the status of the number-neutrality, is it a syntactic or a semantic property? Intensional and predicative NPs classify as number-neutral in the very same way as clauses, even if their head noun is count. This indicates that the number-neutral status is a semantic, not a syntactic property. Yet as a semantic property it does not preclude entities in the domain to be structured in the relevant context and for quantifiers like *frequent*, *vieles* and *beides* to relate to that structure.

The next question then is how to make sense of number neutrality in a semantic sense. Obviously the two standard approaches to the mass-count distinction are inapplicable, since extensional mereological properties of extensions and actual or perceived integrity are not at play. What is characteristic of a number neutral domain rather is the absence of primitive notion of unity. That is, whether something is a countable entity will be a primitive notion not further reducible to any actual or perceived properties the entity may have or to mereological properties of the extension of the expression used to refer to it.<sup>9</sup> Such a notion of unity will be associated with the syntactic count category and the absence of it with the syntactic mass category. The absence of primitive unity will also be the defining featured of a number-neutral domain and in particular the extension of a category lacking a syntactic mass-count distinction.

With it use of number-neutral domains, natural language displays a striking discrepancy between our naïve or cognitive metaphysics and the ontology reflected in natural language.<sup>10</sup> Certainly our naïve metaphysics categorizes events either as having a boundary or not having one. But that categorization does not play a role in the context of natural language, in the way events are treated when they belong to the verbal domain. Here events categorised as being

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<sup>9</sup> Approaches that regard the defining feature of mass as the absence of unity have been pursued by Laycock (1986) and McKay (2016).

<sup>10</sup> For the notion of the ontology of natural language see Moltmann (2019).

neither one nor many and require the use of a numeral classifier or lexical count quantifier to be regarded as countable.

Of course, events are classified as count when they are referents of particular nominalizations, nominalizations thus achieves more than just picking up an event argument of a verb, imposing a primitive condition of unity. Nominalization in a semantic sense arguably is also involved in the use of the morpheme *thing*, which appears to act as a numeral classifier in a number of contexts. In fact, quantifiers of the sort *something*, *everything* and even *what* arguably involve some form of reification (nominalization in a semantic sense), leading to a domain of entities that are potential referents of nouns. Such quantifiers when they take the position of a non-referential complement are analysed in Moltmann (2013a, b) as nominalizing quantifiers leading to a domain of entities that could also be referents of the relevant nominalizations. Thus, nominalizing quantifiers in place of predicative complements lead to a domain of tropes (or kinds of them) (referents of nouns like *happiness*), in place of clausal complements to a domain of attitudinal objects (or kinds of them) (denotations of nouns like *claim*), and in place of intensional NPs to a domain of variable objects (or variable satisfiers). While not all occurrences of quantifiers like *something* need to lead to a domain of entities that would be semantic values of nominalizations, such quantifiers appear generally come with some form of reification, due to the presence of *thing*.

## 6. Conclusions

This paper has shown that verbs with respect to their Davidsonian event argument position classify as number-neutral, rather than dividing into mass and count, and more generally that categories that lack a syntactic mass-count distinction classify generally as number-neutral as do uses of categories not involving their usual denotations. The standard approaches to the mass-count distinction are not suited for characterizing such number-neutral domains. Instead they are better defined in terms of a primitive notion of unity, whose presence characterizes count categories and whose absence number-neutral domains.

The paper has also shown that countability may be lexically imposed by particular quantifiers, which can then apply to number-neutral domains. Frequency expressions, which apply to mass nouns as well as verbs as adverbial modifiers were one example. German *vieles* and *beides* are other examples. The possibility in general for quantifiers to specify countability lexically may explain why in some languages, numeral modifiers can apply to

mass nouns (e.g. Yudja). In those languages, numerals would have a lexical meaning imposing a condition of countability on the domain lexically.

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