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**Levels of Ontology and Natural Language: the Case of the Ontology of Parts and Wholes**

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**Introduction**

In contemporary metaphysics, it is common to recognize two levels of ontology: the ontology of ordinary objects, which is reflected in our ordinary judgments, and the ontology of what there ultimately is, fundamental reality. Metaphysics has been focused on those two levels as well as the relation between the two, pursuing questions such as whether and how the ontology of ordinary objects can be understood in terms of what is fundamental and whether it or part of it even exists.

It seems obvious that natural language reflects the ontology of ordinary objects (as well as entities ontologically dependent on them), an ontology that includes material objects, artifacts, events, shadows, holes, and tropes. In fact, philosophers discussing the ontology of ordinary objects frequently make reference to linguistic data, such as the applicability of predicates to terms putatively referring to the entities in question. While natural language certainly displays the full range of the naïve ontology of ordinary objects with its various referential terms, the ontology of ordinary objects is not dependent on natural language: the ontology of ordinary objects plays a role in cognition and perception quite independently of the acquisition and use of language.

The aim of the paper is to argue for another level of ontology besides that of fundamental reality and of the ontology of ordinary objects. This is what I will call the ‘language-driven ontology’. The language-driven ontology is not a full alternative ontology to that of the ontology of ordinary objects, but rather involves certain ontological categories and notions, which need not align with that of the ontology of ordinary objects. It is a level of ontology that is specifically tied to language and intimately linked to the use of syntactic categories or constructions, and a commitment to that ontology strictly goes along with the use of language.

This paper will argue for the level of language-driven ontology mainly on the basis of the ontology of parts and wholes broadly speaking. This ontology is reflected in plural and mass nouns and includes a domain of pluralities (denotations of plural nouns) and a domain quantities (denotations of mass nouns) which are both closed under sum formation (By contrast, the ontology of ordinary objects is generally not taken display such mereological universalism, and not include as entities any collection of things one may refer to with *the things* or *the stuff*.)

The language-driven ontology of parts and wholes is also reflected in part-structure-sensitive semantic selectional requirements, that is, presuppositions that predicates or readings of predicates may impose on the part structure of their arguments, a phenomenon little discussed in the literature (unlike more familiar cases of category mistakes). For example, *count* applies only to pluralities with a reading targeting individual members of the plurality, as in (1a), whereas *compare* also has readings targeting contextually given subpluralities, as in (1b), on a reading on which John compares the men to the women:

(1) a. John counted the men and the women.

b. John compared the men and the women.

Most important in that ontology of parts and wholes is a language-driven, primitive notion of unity (that is, the property of being a single entity), which is associated with count nouns, but not mass nouns.

The language-driven ontology raises the question about its status: does it situate itself at a purely conceptual, mind-internal level or can it be viewed as an ontology of what is real? I will argue for the latter: the language-driven ontology is an ontology of the real, though based on a selection of actual entities and features of entities (such as unity), and in that sense it is perspectival. This goes along with a ‘maximalist’ view of reality, as a plenitude of beings, simple and derivative, among which cognitive and language-driven ontologies will make their selection. Some of those beings will count as single entities in the language-driven ontology, some of them won’t, depending on what entities-plus-features language selects for its ontology. Some of them will be selected for the ontology of ordinary objects, some of them won’t. The language-driven ontology and the ontology of ordinary objects thus are both based on a (mind- or language-dependent) selection among what is real.

The paper resumes a number of generalizations from my earlier work on the semantics of parts and wholes, the theory of situated part structure (Moltmann 1997, 1998, 2005). The view this paper develops, however, differs in some crucial respects from the theory of situated part structures. On the theory of situated part structures, what makes something have unity (that is, count as a single entity) is to be an integrated whole in the situation of reference, and it is information about integrated wholes in a situation that determined the structure of pluralities or quantities in that situation. Being an integrated whole standardly consists in having a form or a boundary, but it may also just consist in being a maximal entity whose parts share a particular property or connection (as is the case for pluralities referred to as ‘the flowers’ or quantities referred to as ‘the furniture in the room’). The new view sharply distinguishes the notion of having unity from the notion of being an integrated whole. Referring to something as a single entity may go along with characterizing it as an integrated whole (and often does), but it need not. Conversely, referring to something as an integrated whole does not guarantee that it counts as a single entity (and ‘the flowers’ and ‘the furniture’ will in fact not count as single entities). Unity (and thus countability) is now taken to be a primitive notion, not derivable from conditions of having a boundary, a form or another sort of integrity.

This paper recasts the theory of situated part structures in entirely ontological terms, doing away with situations. While the earlier view was based on the notion of an entity in a situation (with the assumption that the content of the situation would determine the part structure of the entity), the new view makes use only of entities, which include entities that fail to have unity (pluralities and quantities), yet may have a structure (‘the men and the women’ on one reading of (1b)). There are concerns as to whether those entities, not being units, can even be regarded as entities, as on standard semantic theories. The paper will support those concerns, though without developing a formal alternative .

The language-driven ontology of parts and wholes shares important features with the light ontology of pleonastic entities of Schiffer (1996), an ontology of abstract entities that includes properties and propositions introduced on the basis of the use of predicates and sentences respectively. They are part of the same, what Schiffer (1996) calls, ‘language-created, language independent’ ontology, an ontology distinct from the ontology of ordinary objects. They both are tied to the functional part of language (syntactic constructions or categories), rather than, like the ontology of ordinary objects (and entities dependent on them), the lexicon.

The paper will start with a few remarks about ontology and natural language. Against the background of the older view of situated part structures, it will then outline the new view of the language-driven ontology of parts and wholes. Finally, it will address the question of the status of the language-driven ontology, drawing the connection to the ontology of pleonastic entities.

**1. How does natural language reflect ontology?**

**1.1. Reflection of ontology in natural language**

The background assumption of this paper is that natural language reflects ontology, though not the ontology of fundamental reality.[[1]](#footnote-1) There are various ways in which natural language reflects ontology. Most importantly, natural language reflects entities with its referential and quantificational NPs and its predicates or so the most common view. Thus in a simple sentence like *John sees a tree*, the referential NPs *John* and the quantificational NP *a tree* range over objects and the property expressed by *saw* is predicated of John and one of the objects *a tree* ranges over. The standard view, in both linguistics and philosophy of language, is that referential NPs (names, definite NPs, and specificational indefinites) stand for objects, quantificational NPs range over objects and predicates express properties of objects.

Why is this view plausible? First of all, it seems to match the intuitive functions of parts of speech: we use referential NPs to refer to entities and predicates to attribute properties to them. Moreover, the view allows for a uniform semantics of NPs and of predicates, and thereby appears to guarantee compositionality. That is, referential NPs always stand for objects, quantificational NP always range over objects, and predicates always express properties of objects. [[2]](#footnote-2) Frege, in particular, was very explicit about the connection between objecthood and referential NPs. It was part of his Context Principle that a referential NP, in the context of a sentence, always contributes an object to the composition of the meaning of the sentence (Wright 1983). Compositionality and ontology thus appear to be intimately linked.[[3]](#footnote-3)

The view that referential NPs always stand for an object requires recognizing a wider range of entities than what many metaphysicians may in fact be willing to accept, such as a great range of derivative and perhaps abstract entities. It also requires recognizing entities that are specifically part of the language-driven ontology, in particular pluralities (denotations of definite plural NPs) and quantities (denotations of mass NPs). Just as definite singular NPs stand for entities that are individuals, definite plural NPs and mass NPs should stand for entities, namely pluralities and quantities. I will use the terms *individual, plurality* and *quantity* as terms for the sorts of entities that make up the extension of singular count, plural, and mass nouns respectively, and that thus also act as respective semantic values of definite singular count, plural, and mass NPs.[[4]](#footnote-4) That the three types of definite NPs stand for entities appears to be supported by the fact that they allow for the same predicates with the very same reading, for example *weigh*:

(2) a. The stone weighs one kilo.

b. The stones (together) weigh 5 kilo.

c. The material weighs 5 kilo.

.

Considerations of compositionality give a strong motivation for pluralities and quantities being entities on a par with individuals as elements in the denotation of nouns and as semantic values of definite NPs. Yet at the same time their ontological status is different from that of individuals, which may put into question their very status as entities as on standard semantic theories (Section 5).

**1.2. Semantic selection and category mistakes**

This paper focuses on part-structure sensitive semantic selection, which has received little attention in the linguistic and philosophical literature. The literature has instead focused on constraints predicates may impose on the category of objects to which they may apply (objects as opposed to events, concrete vs abstract objects, for example). Such constraints are presuppositions that need to be satisfied in order for the sentence to be able to be true or false, rather than resulting in a category mistake.[[5]](#footnote-5)

In order to avoid a category mistake, generally, accommodation may save the interpretability of the sentence, that is, shift from the actual referent of the nominal argument to a closely related one. For example, the predicate *start* is generally restricted to events; but when the object NP stands for an enduring object instead, accommodation, mapping that object to a closely related event, can save the truth-evaluability of the sentence:

(3) a. John started reading the book.

b. John started the book.

There are challenges to the Fregean view that predicates apply just to objects that have been discussed in the literature. A widely shared view, however, which I will adopt myself, is that such challenges can be dealt with pragmatically, rather than requiring giving up the view that predicates apply just to objects. [[6]](#footnote-6) For example, *appreciate* is a predicate that appears to be sensitive to the way an object is presented even in unembedded contexts:

(4) a. (As regards Bill) John appreciates the gardener, but not the teacher.

Predicates like *appreciate* are sensitive to facets of an object. Yet, the predicate itself does not select the linguistically conveyed presentation itself. Thus, (4b) by itself can easily have the reading on which John appreciates Bill, the gardener, as a teacher:

(4) b. John appreciates the gardener.

In this paper, I will focus on another class of predicates that appear to be sensitive to the way an entity is presented, namely predicates that are sensitive to the mereological presentation of entities, in the broadest sense. Those predicates impose semantic selectional requirements that concern the linguistic presentation of entities in terms of unity, plurality and structure. One important difference to standard cases of semantic selection is that part- structure-sensitive semantic selection does not allow for accommodation.

**2. Part structure-sensitive semantic selection**

**2. 1. The mass-count distinction**

The mass-count distinction is closely connected to part-structure-sensitive semantic selection, and both motivate the level of the language-driven ontology. In what follows I will first motivate my view of the mass-count distinction and then turn to semantic selection.

The mass-count distinction is first of all a syntactic distinction between nouns. Nouns that display a singular-plural distinction are count; nouns that do not are mass. There are further, standard criteria for mass nouns that distinguish them from count nouns, such as their selection of quantifiers (mass nouns go with *little* and *much*, count nouns with *few* and *many*), resistance to numerals for mass nouns, but not count nouns, and lack of support of *one*-anaphora for mass NPs, but not singular count NPs.[[7]](#footnote-7) The syntactic mass-count distinction, so the general agreement, has semantic content and in that sense goes along with a *semantic mass-count distinction.* There is little agreement, though, what that semantic distinction consists in, whether it is an ontological, extension-based, situation-based, epistemic, or conceptual-perspectival distinction.[[8]](#footnote-8)

By tendency, the mass-count distinction goes along with the ontological distinction between objects and matter or stuff (substances).[[9]](#footnote-9) This seems also reflected in the meaning shift that generally occurs when a count noun is turned into a mass noun (*many apples* 🡪 *much apple*). There are also mass-count pairs in which the meaning of the mass noun is not obviously derived from the count noun, yet display that same ontological distinction. An example is the pair of the count noun *part* and the mass noun *part*. The count noun generally stands for parts with a boundary, structure, or function; the mass noun also applies to parts that lack such features (Moltmann 1998):

(5) a. He drank part of the wine / ate part of the meal.

b. ??? He drank a part of the wine.

The distinction between the material and an object constituted by it is generally regarded an ontological distinction by philosophers concerned with the ontology of ordinary objects. (rather than the ontology of fundamental reality) (Fine 2003). The semantic distinction between count and mass might then be drawn as an ontological distinction between entities that come with a boundary, form, or integrity of some sort (count) and entities that lack a boundary, form, or integrity (mass). In fact this is how the mass-count distinction was first made, namely by Jesperson (1924).[[10]](#footnote-10) In the theory of situated part structures (Moltmann 1997, 1998, 2005), the notion of integrity was relativized to a situation, permitting entities to be accidental integrated wholes or to have or lack integrity just on the basis of linguistic information.

There are a number of observations to the effect that the distinction between singular count, mass, and plural nouns does not strictly go along with an ontological distinction among different sorts of entities.

First, a singular count NP may, it seems, refer to the very same thing as a definite plural or mass NPs, in examples such as the following:[[11]](#footnote-11)

(6) a. the collection of papers on this desk – the papers on this desk

b. that particular amount of alcohol he swallowed - that alcohol he swallowed

c. the patch of water on the floor – the water on the floor

The count nouns could convey at best the accidental integrity of a plurality or quantity (e.g. temporary configuration of the papers in (6a)) or even just merely conceived integrity, not grounded in any actual properties of the plurality or quantity. The semantic differences in the pairs in (6) thus cannot be attributed to ontological differences grounded in the absence or presence of integrity of entities.

Second, the choice of a mass noun or a count noun in a given language for particular entities is often arbitrary, not grounded in any perceptual differences (Chierchia 1998b). Examples in English are the mass-count pairs *rice – oats*, *corn – peas*, *cattle – horses*.

Third, there is a great range of so-called object mass nouns, mass nouns that appear to stand for pluralities of well-individuated objects, such as *hardware, jewelry, luggage, staff*, *police force*.[[12]](#footnote-12) Object mass nouns often come with apparent co-extensional plural nouns in the same language (Chierchia 1998b), as the following count-mass pairs illustrate:

(7) a. clothes – clothing

b. policemen – police force

c. cows – cattle

d. carpets - carpeting

Finally, there is a lot of crosslinguistic, and, it seems, arbitrary variation regarding whether something is denoted by a plural or a mass NP, illustrated by English *hair* - Italian *cappelli*, English *pasta* – French *pâtes* (Chierchia 1998).

In summary, whether a language chooses a singular count, plural, or a mass noun is to an extent arbitrary and only by tendency aligns with the way entities are individuated in the ontology of ordinary objects. This makes an ontological account of the semantic mass-count distinction rather implausible. In Rothstein’s (2010) words, ‘While the mass-count distinction is clearly influenced by the structure of matter, it is not taken over from it’.

The relevant generalizations are major problem not just for ontological approaches to the content of the mass-count distinction, but also for approaches to the mass-count distinction based on extensional mereological properties of noun extensions in the tradition of Link (1983). On that view, the characteristic property of count nouns is to have an atomic extension, whereas mass nouns don’t or don’t necessarily (in addition to plural and mass nouns, but not singular count nouns, being cumulative (closed under sum formation)). This raises the socalled minimal-parts problems for mass nouns (mass nouns nouns such as *rice* clearly stand for quantities with minimal parts that fall under *rice*). Most strikingly, the problem that object mass nouns clearly have extensions that share the same mereological properties as plural nouns.[[13]](#footnote-13)

Another major challenge for standard (ontological and extension-based) views of the mass-count distinction is the semantics of nouns in classifier languages. In Chinese, all nouns require numeral classifiers for numerals to be applicable, and thus regardless of the ontological properties of their denotations or mereological properties of their extensions, they count as mass or, better, number-neutral. Numeral classifiers select either natural units (sortal numeral classifiers) or units based on measurement (mensural numeral classifiers).[[14]](#footnote-14) English has something close to classifier constructions with mass nouns:

(8) a. two pieces of furniture

b. two liters of milk

In (8a), *pieces* and *liter* act like sortal and mensural classifiers respectively, enabling countability of the denotation of a mass noun. Standard ontological and extension-based characterizations of mass nouns (lack of integrity or natural unity and homogeneity respectively) do not apply to number-neutrals nouns, just as they do not apply to object mass nouns.

**1.3. The theory of situated part structures (Moltmann 1997)**

On the present view, unity is a primitive notion. For an entity being a single entity may go along with that entity being an integrated whole, but being an integrated whole does not guarantee that the entity has unity and thus counts as a single entity. This holds also when integrity is relativized to a situation of reference. This constitutes the crucial departure of the theory of situated part structure of Moltmann (1997, 1998), which I will here quickly review.

The general idea of that theory was that the semantics of natural language involves apart structures in situations, where information content of the situation determines the part structure of quantities and pluralities, based on whether entities count as integrated wholes. .

The semantic mass-count distinction, on that view, moreover consists in that singular count nouns convey integrity of an entity in a situation of reference, whereas mass nouns convey the absence of it in a minimal situation of reference (that is, a situation attributing to an entity no more than the content of the noun itself) (Moltmann 1997, 1998). Part-structure-related semantic selectional requirements furthermore care about whether entities or their parts are integrated wholes in the situation of reference.

The theory of situated part structures has difficulties dealing with some aspects of the mass-count distinction. It needs to appeal to a problematic notion of merely conceived integrity for data as in (6), where integrity is not grounded in any actual properties of the entity referred to. Like any standard ontological and extension-based account, it has difficulties dealing with object mass nouns. That is because the reference situation for, for example, the NP *the furniture* will always include the attribution of the lexical content of the noun furniture to the referent, but that means that parts of the referent (the pieces of furniture) are characterized as integrated. Yet they do not count as single entities. Moltmann 1998).

One of the most important problems of the theory of situated part structures is that it considers the referents of definite plural and mass NPs as integrated wholes. But this means that the pluralities and quantities count as one, rather than as many, which is inadequate, as we will see.

A further problem for the situation-based approach of Moltmann (1997) is that the situation associated with the utterance of definite plural or mass NP cannot generally determine the contextually relevant structure of the plurality or quantity referred to. The idea was that the information content of the reference situations tells what parts of the plurality or quantity are integrated wholes and therefore count as the only parts in the context. However, as a matter of fact, it still depends on speaker’s intentions what parts are the relevant ones. The fact that (9a) has two readings show that:

(9) a. John compared the German and American students.

In (9a), the descriptive content of the definite NP provides information that would determine the maximal plurality of German students as an integrated whole and so for the maximal group of American students. But (9a) has also the individual-student comparison reading as well as readings on which, say, John compared the German and American physics students to the German and American math students.

Another difficulty for the situation-based approach is that it predicts that (9a, b) have exactly the same readings, since they involve situations with the same information content (individuals being German students and individuals being American students):

(9) b. John compared the German students and the American students

But as a matter of fact, they don’t: only (9a) allows for a reading on which part of the German and part of the American students form relevant subpluralities. This means that descriptive information constitutive of integrated wholes does not strictly determine a configuration (but rather properties such as being a semantic value of the same definite NP, see Moltmann 2017). On the present view, structured pluralities or quantities are no longer determined by the information content of a situation. Rather as configurations, they are determined by the speaker’s intentions when uttering the plural or mass NP, subject, of course, to maxims of cooperative communication.

**3. Semantic Selection**

I will now turn to part-structure-sensitive semantic selectional requirements. These selectional requirements involve the semantic mass-count distinction and specifically the language-driven ontology. They are expected to be semantic universals that hold across languages. As such, they cannot be subject to revision upon reflection, such as ontological reflection regarding the nature of unity and that of quantities and pluralities.

For the time being, I adopt the view that definite plurals and mass NPs stand for entities, pluralities and quantities. Pluralities have parts in two senses: individuals making up the plurality as well as subpluralities of the plurality. Similarly, quantities have subquantities as parts. The domains of pluralities and of quantities are both closed under sum formation.

In the theory of situated part structures (Moltmann 1997, 1998, 2005), part-structure-sensitive selectional requirements are taken to require relativizing an argument to a situation, with the situation determining the part structure of the argument. I now adopt an entirely ontological approach to part-structure-sensitive semantic selection, making use of structured quantities and pluralities and a primitive notion of unity. Situations are thus no longer used for part-structure-sensitive selection, and in fact they are generally not needed for other sorts of semantics selection either (Section 1.2.).

**3.1. The Accessibility Requirement**

The first semantic selectional requirement concerns predicates or readings of predicates that appear to be sensitive to the distinction between singular count NPs on the one hand and plural or mass NPs on the other hand. The generalization roughly is that predicates making reference to the parts, but not the whole, of the argument can apply only to a mass or plural NP, not a singular count NP. Given that only singular count nouns describe an entity as having unity and being a single entity, this requirement can be formulated as the ‘Accessibility Requirement’ below:

(10) The Accessibility Requirement

Predicates or readings of predicates whose content makes reference to the parts, but not

the whole, of an argument are true or false only of an entity that does not have

(linguistically conveyed) unity.

Two types of predicates making reference to the parts, but not the whole of an argument can be distinguished. First, there are numerals and related predicates, such as *enumerate* and *rank*, which I will call ‘*count*-type predicates’:

(11) a. The students are ten.

b. ??? The class is ten.

(12) a. John enumerated the orchestra members.

b. ??? John enumerated the orchestra.

(13) a. John ranked the students

b. ??? John ranked the class. (in the sense of ranking the individual parts of the class)

Second, there are predicates like *compare, distinguish*, *be similar, be different*, *be distinguishable*, which I will call ‘*compare*-type predicates’:

(14) a. John compared the students.

b. ??? John compared the class.

(15) a. The male and the female students are similar

b. ??? The class is similar. (internal comparison reading)

(16) a. John compared jewelry in the different boxes.

b. ??? John compared the treasure.

Unlike *count*-type predicates, which strictly take into account individuals only, *compare*-type predicates can apply to a contextually or descriptively given division of a plurality or quantity into sub-pluralities. Thus, (14a) has an individual comparison reading as well as a reading on which students in different classes are compared. I will come back to that in the next section.

Also distributive readings fall under the Accessibility Requirement: they are hard to get with singular count NPs, at least with a range of predicates. A distributive reading is unproblematic in (17a), but hard to get in (17b):

(17) a. John evaluated the students.

b. John evaluated the class.

The Accessibility Requirement excludes predicates making reference not just to the parts, but also to the whole of an argument, such as *organize* and *restructure* (Moltmann 1997): [[15]](#footnote-15)

(18) a. John organized the collection of paper on the desk.

b. John restructured the committee.

In Moltmann (1997), the Accessibility Requirement is formulated in terms of the notion of an integrated whole: predicates subject to the Accessibility Requirement can apply only to entities that are not integrated wholes in the reference situation. The problem is that integrity can also be imposed without using count nouns, just by using a definite plural or mass NP, but then it will not block the application of predicates or readings of predicates involving of parts, but not the whole of the argument. A definite plural or mass NPs *the* N (*the children* or *the* water) refers to an integrated whole, namely the maximal quantity or plurality falling under N (*children* or *water*). If F is the property expressed by N, this is an FF-integrated whole in the sense that all the parts are connected by sharing F (the relation FF) and are not FF-connected to anything that is not part of d (Simons 1985, Moltmann 1997). In the theory of situated part structures, the notion of FF-integrated whole is of course restricted to the situation of reference of the definite NP.[[16]](#footnote-16) The important observation in the present context then is that integrity in the sense of an FF-integrated whole never blocks the application of part-structure-sensitive predicates. By contrast, even ‘ungrounded’ unity that may go along with the use of a count noun such as *amount*, *quantity* or *collection* does block the application of part-structure-sensitive predicates or readings of predicates:

(19) a. John compared the papers.

b. ??? John compared the collection of papers

c. ??? John compared the amount of papers on my desk.

The Accessibility Requirement thus involves unity tied to the use of a singular count noun, rather than actual, linguistically conveyed integrity. As such, it is part of a perspectival, language-driven ontology, rather than of the more substantive nature of ordinary objects with their language-independent cognitive individuation.

That such a level of ontology is involved is made particularly clear with the use of *whole* as a noun modifier. *Whole* changes the perspective of an entity from being regarded as a unit to one of a mere plurality of its parts, thus permitting the application of part-structure-sensitive predicates, as in (20a), as opposed to (20b), as well as distributive readings, as in (21a), as opposed to (21b) (Moltmann 1997, 2005):[[17]](#footnote-17)

(20) a. John enumerated the whole class.

b. ??? John enumerated the class.

(21) a. The whole art collection is expensive.

b. The art collection is expensive. (only collective reading)

*Whole* has the function of mapping a unit to an entity that has no unity, but is a mere collection of parts (or, on a second, collective reading, the parts together with a form Moltmann 2005).

**3.2. The Plurality Requirement**

*Count*-type predicates, we have seen, differ from *compare*-type predicates in that they cannot target contextually or descriptively individuated subpluralities or subquantities. Thus, *count* in (22a) can only target individual students, not contextually individuated subgroups, unlike *compare* in (22b), which has a reading on which John compared the students in one class to those in another:

(22) a. John counted the students.

b. John compared the students.

Similarly, (23a) has a reading on which the women induce a partition of the jewelry, but not (23b):

(23) a. John compared the jewelry of the women.

b. ??? John counted the jewelry of the women.

*Count*-type predicates differ somewhat in their applicability to mass nouns, especially object mass nouns. Numerals are strictly inapplicable:

(24) a. \* ten wood / ten pieces of wood

b. \* ten furniture / ten pieces of furniture

Let’s call them strict *count*-predicates. Predicates like *count*, ‘loose *count* –predicates’, are not good with mass NPs in general, but they are not entirely excluded with object mass nouns such as *luggage* and *art work*. They are much less acceptable, though, with mass nouns like *art*, which put value rather than material individuation in the foreground:[[18]](#footnote-18)

(25) a. ? John counted the luggage.

b. John counted the pieces of luggage.

(26) a. ?? John counted the art.

b. ? John counted the artwork.

c. John counted the works of art.

*Count*-type predicates differ from predicates of size and shape in not being able to apply to object mass nouns: *Count*-type predicates can target only linguistically selected units.

*Count*-type predicates, thus, select entities at the level of the language-driven ontology, namely pluralities of entities with linguistically conveyed unity:

(27) The Plurality Requirement

*Count*-type predicates can be true or false only of pluralities of entities that have

(linguistically conveyed) unity.

An important observation about the Plurality Requirement is that accommodation cannot rescue a violation of it, unlike selectional constraints on types of ordinary objects. No effort of accommodation makes a mass NP acceptable with a *count*-type predicate, not even one headed by an object mass noun.

Instead of (27), the theory of situated part structures made use of an ‘Integrated Parts Requirement’, which, basically, said that count-type predicates can apply only to entities that consists in parts that are integrated wholes in the situation of reference. This formulation faces the same difficult as the Accessibility Requirement when formulated in terms of integrated wholes: parts distinguished not by the use of a count noun, but in terms of the description used or in the context of reference cannot make *count-*type predicates. There are predicates that can take such parts into account, but they are *compare*-type predicates. Unlike *count*-type predicates, *compare*-type predicates can relate to a contextual division of the plurality or quantity denoted by their complement. The division may be based on the description used as in (28a, b) or come from the nonlinguistic context, as in (29a, b):

(28) a. John compared the furniture in the different rooms.

b. John compared the students in the different classes.

(29) a. John compared the furniture.

b. John compared the students.

In (28a) the modifier *in the different rooms* imposes a division of the furniture into maximal subquantities found in the particular rooms, and similarly the modifier *in the different classes* imposes a division of the plurality of students in (28b). (29a, b) can be used so as to be about the very same divisions, without such modifiers.

What distinguishes *compare*-type predicates from *count*-type predicates thus is their ability to take into account contextual divisions of pluralities or quantities into subpluralities or subquantities. *Count*-type predicates cannot relate to such divisions since pluralities and quantities do not have unity and thus count as single entities, though they may be integrated wholes in the relevant context.

Quantities and pluralities that come with a particular contextual division into subquantities and subpluralities, that is ‘configurations’, are entities; but neither they themselves nor their contextual parts have unity and thus count as single entities. Only *compare*-type predicates can apply to configurations and take into account their particular structure.

In the theory of situated part structures, what I now call configurations were pluralities and quantities that come with a division into parts based on the information content of the situation of reference. Now configurations are considered entities by themselves that are as unstable as a situation of reference. Given that configurations are not grounded in the ‘content’ of situations, this raises the question of how they come into play in the meaning of sentences? On the present configurations with their contextual divisions are simply determined by speakers’ intentions, just as any other object of reference may be.

Configurations do play a significant semantic role in that there are expressions whose specific semantic function is to set them up. In particular, the adjectival modifier *individual* sets up a configuration in which a plurality is divided just into its individual members.[[19]](#footnote-19) Thus (30) has only the individual-comparison reading:

(30) John compared the individual students.

*Individual* is a *count*-type predicate in that it targets parts of an entity specified as countable. Its semantic effect is to ensure that a plurality has only its individual members as its parts.

**3.3. The strict distributivity of predicates of size and shape and of existence**

The Accessibility Requirement and the Plurality Requirement are conditions that need to be satisfied at the level of the language driven-ontology, requiring the absence or presence of linguistically conveyed unity. It is predicates that do not care about the whole of an entity and predicates that involve counting that are subject to the Accessibility Requirement and the Plurality Requirement respectively. The Accessibility and Plurality Requirements operate at the level of the language-driven ontology in that they concern the applicability of predicates to pluralities and quantities and the linguistically conveyed notion of unity. They concern predicates whose content does not specifically relate to the ontology of ordinary objects, but rather just care about linguistically conveyed unity.

Now I want to discuss a selectional requirement of predicates that can be satisfied both at the level of the language-driven ontology and the level of the ontology of ordinary objects, namely predicates of shape and size. Such predicates are strictly distributive, resisting an application to a plurality or quantity as a whole (Moltmann 2004, Rothstein 2010, Schwarzschild 2011). They can apply to both NPs with plural nouns and with object mass nouns as heads, but targeting only the individuals of which their denotations are made up:

(31) a. The children are big.

b. ??? The people are long.

c. The furniture is large.

d. The luggage is small.

(31a) cannot possibly mean that the group of children is large, (31b) cannot possibly mean that the line of people is long, and (31c) cannot possibly mean that the collection of furniture is large.[[20]](#footnote-20)

There is no general prohibition against collective readings of predicates with definite plurals and object mass NPs as such. Plural and mass NPs do allow for certain predicates to convey a property of the whole plurality or quantity, for example predicates of weight:[[21]](#footnote-21)

(32) a. The books (together) are heavy.

b. The furniture is heavy.

Unlike *count*-type predicates, predicates of size and shape do not require linguistically conveyed unity, but can relate to just the natural units of the ontology of ordinary objects. But linguistically conveyed unity will also do, even if it is not grounded, as in the case of loose collections, amounts, and quantities:

(33) a. The collection of unopened letters on my desk is large.

b. The amount of alcohol he swallowed is small.

c. The quantity of water on the floor is enormous.

Predicates of size and shape thus apply to just those entities that have unity either in the language-driven ontology or in the ontology of ordinary objects. That is, the presupposition of unity of predicates of size and shape is satisfiable at either level of ontology.[[22]](#footnote-22)

**4. The status of the language-driven ontology**

**4. 1. How to understand the language-driven ontology?**

Count nouns, unlike mass nouns, convey unity, enabling countability, and that regardless of the individuation of entities in the ontology of ordinary objects. The ontology of ordinary objects thus is not reflected in the mass-count distinction as such and even less so in the category of number-neutral nouns. This does not mean, though, that the mass-count distinction distorts the ontology of ordinary objects. Rather, count nouns operate at another level, selecting unity as a feature of entities, possibly but not necessarily based on unity at the level of the ontology of ordinary objects. The same holds for classifiers, which impose or select unity based on natural units (as in 9a) or measured units (as in 9b). The absence of grammatically conveyed unity similarly would mean abstinence from selecting unity that way. Unity and thus countability, on the present view, are language-driven and made available only by the use of count nouns or classifiers. Yet the ontology of ordinary objects remains accessible even for part-structure-sensitive semantic selection and the choice of classifiers.

An obvious question now is: what is the status of the language-driven ontology, an ontology that includes entities such as pluralities, quantities, and the notion of unity? Should the language-driven ontology be situated at a merely conceptual level, and thus another level of syntactic representation, as opposed to the ontology of ordinary objects? Such a view is hard to maintain. Entities that are pluralities or quantities contribute just as much to truth conditions as ordinary objects when they are arguments predicates. Similarly, language-driven unity influences the truth conditions of sentences with *count*-type predicates. I take the language-driven ontology to be an ontology of the actual, but based on selection and in that sense perspectival. Entities in the language-driven driven ontology as well as ordinary objects, on this view, are actual, if derivative entities. The language-driven ontology then is no less real than the ontology of ordinary objects.[[23]](#footnote-23)

Unity as conveyed by count nouns and classifiers, on this view, is not a cognitive notion, a mind-dependent condition imposed on certain parts of the world. Rather it is feature that entities have mind-independently, but subject to selection by the use of language. Grammatically conveyed unity is mind-dependent only in so far as it is perspectival, in the sense of being selected. Anything in reality, on that view, has unity, any plurality of entities, whether it exhibits integrity or not. This is in fact rather intuitive: Any plurality of entities can be viewed as a single entity or a mere collection of parts and features. Even if an entity has a form and persists with that form, it could still be viewed as a mere plurality of features and parts, rather than as a single entity. Unity as such is thus not grounded intrinsic properties of entities. In the context of cognition and the use of language, only certain beings will be selected as single entities, a selection that is generally driven by conditions of having integrity of some sort. Unity, thus, may go along with conditions of integrity, but such conditions do not guarantee that an entity is viewed a single entity.

This view applies not just to the language-driven ontology, but also the ontology of ordinary objects. The ontology of ordinary objects is similarly a selective ontology of derivative entities, entities whose composition and nature is itself based on selection (of features and matter). This goes along with a view of reality that Eklund (2008) calls ‘maximalism’, the view that ‘for any type of object such that there can be objects of that type given that the empirical facts are exactly what they are, there are such objects’ (Eklund 2008). Reality, thus, is no longer viewed as a realm of matter or of particles or of ordinary objects. Rather it consists of a plenitude of beings, whether intuitive or not, simple or derivative. It will include unrestricted sums, composites of matter and form of some sort, and composites of matter, form and primitive unity. Some of those beings will count as ordinary objects, others won’t, depending on what the cognitive ontology of ordinary objects selects. Some of them will count as single entities in the language-driven ontology, some of them won’t, depending on what language selects for its ontology. The language-driven ontology and the ontology of ordinary objects thus will be on par, based on a mind- or language-dependent selection among what is real.

**4.2. The language-driven ontology of pleonastic entities**

The language-driven ontology represents countability, but also weakly individuated entities such as quantities and pluralities, including contextually individuated configurations. A commitment to such entities strictly goes along with the use of language, in particular the use of definite mass and plural NPs. This raises the question whether there are independent motivations for that level of ontology. As a matter of fact, a language-driven ontology has been discussed in other contexts, in particular by Schiffer (1996) in connection with his theory of pleonastic entities. Pleonastic entities are entities that are referents of referential NPs introduced by what Schiffer calls ‘something-from-nothing’ transformations. For example, properties as pleonastic entities are introduced by a transformation of the sort *John is happy* 🡪 *John has the property of happiness*. There is nothing more to properties than what can be derived from such term-introducing inferences. In that sense properties are language-driven or pleonastic entities. As pleonastic entities, properties do not have a substantial nature that could be subject to any further investigation. Pleonastic entities, for Schiffer, are what he calls ‘language-created, language-independent’ entities. This means they are made available for thought and linguistic reference by the use of certain object-introducing linguistic devices (*the property of being happy*), yet on the basis of language-independent conditions actually obtaining (John’s being happy).

Non-worldly facts are another example for which the notion of a pleonastic object is particularly suited. Non-worldly facts are the referents of canonical fact descriptions of the sort *the fact that someone entered the room* or *the fact that John won the race or Mary did*. They exist in virtue of particular sentences or propositions being true and exist thus language-independently, but we can hardly speak or think about them without using fact-introducing devices, canonical fact descriptions of the sort *the fact that* S.

Language-driven countability sides with pleonastic, ‘language-created, language independent’ objects: countability is made available by the use of particular linguistic devices that select entities as units. As with pleonastic entities, this need not mean that linguistically conveyed unity is in fact created and thus imposed by the mind; rather it is selected among the various conditions of unity that in fact obtain. Language makes unity and countability available by selecting entities as units, just as pleonastic entities are not literally created but made available by the relevant object-introducing linguistic devices, in virtue of language-independent conditions obtaining. The ontology of countability and the ontology of pleonastic entities thus belong to the same level of language-driven ontology

**5. Challenged for formal semantics: ontological commitment to sums**

Pluralities and quantities do not have unity and thus do not count as single entities; pluralities are not one, but many, and quantities are neither one nor many. This means that the plurality denoted by *the children* could not possibly be the same entity as that denoted by *the sum of the children* or any other count NPs. The denotation of *the wood* could not possibly be the same entity as that of *the quantity* / *amount* /*heap of wood*. The difference is reflected not only in the applicability of *count*-type predicates as well as the strict distributivity of predicates of size and shape. It is also reflected in the understanding of the existence predicate *exist*.

The predicate *exist* behaves like predicates of shape and size in that it displays a strictly distributive reading. Thus, with plurals, *exist* can target only individual members of the plurality, not the plurality as such (Moltmann 2004, 2017):

(34) The buildings do not exist.

(34) cannot possibly be used as a statement about the existence of the sum as opposed to just the individual members (as a statement, say, by someone doubting the existence of sums).

The same holds for object mass nouns:

(35) The furniture still exists.

(35) can be understood only as a statement about the existence of the individual pieces, not as a statement about the existence of the quantity as such (as a statement, say, by someone doubting the existence of a quantity as an entity separate from the pieces making it up).

On might object that sentences with *exist* should not be taken seriously for semantic purposes since *exist* is a technical verb, mainly used by philosophers. However, it appears that *exist* is subject to robust constraints, that are in fact incompatible with a philosophers’ reflective notion of existence (Moltmann 2020). (34, 35) is illustrate this: there are philosophers that adopt mereological universalism, the view that that everything has a sum, yet even such philosophers cannot use those sentences to convey the existence of a particular sum.

The view that pluralities and quantities are not single entities is not captured by standard semantic theories of plurals and mass nouns, neither those based on extensional mereology in the tradition of Link (1983) nor those that include conditions of integrity besides a part-of relation (Moltmann 1997, 1998). On standard semantic theories, pluralities and quantities are treated as single entities in the very same way as the elements in the denotation of singular count nouns: they all are elements in the domain of entities in any model interpreting the language. As such, they act as semantic values of referential NPs and first-order variables. Quantities form a subdomain of the domain of entities that is closed under sum formation. Pluralities are standardly taken to be sums of individuals and also form a subdomain that is closed under sum formation. The standard model-theoretic semantics of plurals and mass nouns fails to capture the presence or absence of unity in entities, a notion that plays a central role not just for the mass-count distinction, but also part-structure-related semantic selectional requirements. The metalanguage of standard model-theoretic semantics does not distinguish between individuals on the one hand and pluralities and quantities on the other hand, as beings that have unity and beings that fail to have unity.

There are well-known motivations and advantages of the standard semantics of plural, mass, and singular count nouns, of course. The standard semantics gives a unified semantics of the three sorts of NPs. First of all, it complies with Fregean view, treating definite singular count, plural, and mass NPs as singular terms standing for entities. Second, it allows for a uniform semantics of predicates in general as well as particular expressions that apply, it seems, with the same meaning to singular count, plural, and mass NPs. An example is the partitive construction *some/all/* *part of*, which applies to individuals, pluralities as well as quantities, picking out material parts, subpluralities, and subquantities respectively (Moltmann 1998):[[24]](#footnote-24)

(36) a. some/all/part of the house

b. some/all/part of the students

c. some/all/part of the furniture

Finally, the standard semantics is able to capture the way the mereology of events may reflect the mereology of their participants, with thematic relations that involve the gradual involvement of a participant in the event. An example is the object argument of *eat* (*eat the apple, eat the apples, eat rice*), which appears to impose its part structure on the event and determine the aktionsart of the VP (and thus the applicability of modifiers such as *for an hour* and *in an hour*) (Krifka 1998, Champollion 2017).

There is one alternative semantic approach in the literature, which gives justice to the difference between individuals and pluralities. This approach, which has been pursued especially by philosophical logicians, is that of plural reference (Yi 2005, 2006, Oliver /Smiley 2013, Moltmann 2017). It is based on the view that a definite plural NP such as *the children* does not stand for a single entity, a plurality, but rather refers to each student at once. Pluralities, on that view, are no longer entities; instead there is only plural reference, reference to several entities at once.

Plural reference would not be suited for the semantics of mass NPs, though, since plural reference is based on reference to individuals and the parts of quantities (entities in the denotation of mass nouns) do not have language-driven unity.[[25]](#footnote-25) How to deal with the semantics of mass nouns by giving justice to the distinction between entities that have unity and those that don’t is a serious challenge that remains to be undertaken. That challenge needs to be pursued while maintaining, in some way, the insights and advantages of the standard approach.[[26]](#footnote-26)

**6. The importance of language-driven ontology and unity for grammar and semantics**

The ontology of ordinary objects relates to the semantics of natural language differently than the language-driven ontology. Ordinary objects as putative semantic values of referential NPs may be subject to ontological reflection and rejection, and the lexical words used to refer to them may be subject to modification by the user (and thus allow ‘conceptual engineering’) (Moltmann 2020). Furthermore, predicates imposing selectional requirements on types of objects permit accommodation, shift from the ordinary semantic value of an argument to a closely related one, to avoid category mistakes. This is different for the language-driven ontology. Acceptance of the language-driven ontology is mandatory with the use of the language, and predicates imposing requirements regarding the language-driven ontology (e.g. language-driven unity) do not permit accommodation. It is then plausible that the language-driven ontology is part of universal grammar since it goes along with the functional part of syntax and needs to be acquired together with it. The language-driven ontology would thus be part of the core of language, just as the functional part of grammar is.[[27]](#footnote-27)

The central role of the notion of unity for the mass-count distinction and semantic selection shows the importance of the notion of an object for the semantics as well as the syntax of natural language. The notion of unity, being a single entity, can hardly be understood without the notion of an object itself. This bears on Chomsky’s (1986, 1998, 2013) skepticism regarding the involvement of objects in the semantics of natural language, more precisely, the view that referential NPs stand for objects.[[28]](#footnote-28) The question of whether natural language involves objects in its semantics cannot just be addressed by reflecting upon what referential NPs may stand for and what sorts of predicates they permit. The notion of being a single entity is already intimately connected to the functional part of language and is a central part of the langue-driven ontology. It should thus be part of universal grammar as much as the core of syntax is, and it should be grounds for a review of Chomsky’s skepticism as regards the involvement of objects in the semantics of natural language.

**7. Conclusions**

The point of departure of this paper was that ontology is intimately tied to the syntax of natural language, forming a close tie with compositionality. This then requires distinguishing different levels of ontology: the ontology of fundamental reality, the ontology of ordinary objects, and a language-driven ontology. While the ontology of the fundamental hardly plays a role for the semantics of natural language, the ontology of ordinary objects clearly does, especially for the semantics of lexical items and referential NPs that refer in virtue of lexical material. The language-driven ontology, by contrast, is tied to the functional part of language as well as particular constructions. It comprises certain components of ontology, such a single entity, the ontology of quantities and pluralities, as well as the ontology of light (pleonastic) objects. The language-driven ontology of part-whole structure may diverge from that of the ontology of ordinary objects. It is also based on different notions. The ontology of ordinary objects involves notions such as form, function, and persistence; the language-driven ontology involves primitive unity and the introduction of objects by abstraction.

The language-driven ontology and the ontology of ordinary objects differ also in cognitive status. The acquisition of the ontology of ordinary objects starts before the acquisition of language and proceeds rather independently of it, being based on perception (involving conditions of form and size) and functionality.[[29]](#footnote-29) The language-driven ontology is acquired strictly with the acquisition of language.

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1. See Moltmann (2017, 2019, to appear) for more on the ontology reflected in natural language. [↑](#footnote-ref-1)
2. Frege went even further and took the notion of an object itself to be tied to the syntactic function of an referential NP, introducing a syntactic notion of objecthood: an object is what a referential NP may stand for, and that is because referential NPs have the semantic role of standing for an object in the context of a sentence: they always contribute an object to the composition of the meaning of the sentence. [↑](#footnote-ref-2)
3. There is also the view, though, that natural language does not involve reference to objects (Chomsky 1986, 1998, 2013) and that compositionality can be achieved without ontology, on the basis of concepts only (Pietroski 2018). However, see my remarks in Section 7. [↑](#footnote-ref-3)
4. For the use of the term ‘quantity’ for the elements in the denotation of mass nouns see ter Meulen (1981), Schubert/Pelletier (2012). By contrast, the term ‘substance’ is used by some semanticists for the denotation of bare mass nouns (*Gold is shiny*) (in particular ter Meulen 1981). Quantities then are instances of substances. Other semanticists take bare mass nouns to stand for intensions (Pelletier / Schubert 2012) or modalized pluralities of quantities (Moltmann 2013). The present use of term ‘quantity’ is meant to be ontologically neutral. [↑](#footnote-ref-4)
5. See Magidor (2013) for an overview of the discussion of category mistakes. [↑](#footnote-ref-5)
6. An example that figures prominenty in in the literature and for which a pragmatic account has been proposed is the one below (Saul 1997, Forbes 1999):

   (i) Clark entered the phone-booth and Superman emerged.

   There is one case, where a predicate does seem to select a particular linguistic presentation, namely the predicate describe, generally not recognized as such in the literature:

   (ii) a. John described the object: he said it was a house.

   b. ??? John described the house: he said it was a house.

   (iii) He described the gift. It was red wine from France.

   Predicates like *describe* are sensitive to the degree of generality of a description. The more general description may include accidental function. *Describe* is strictly sensitive to the content of the NP. A pragmatic account does not seem plausible in this case.

   Another class of predicates not just caring about objects is predicates like *high*, which are sensitive about the orientation of the object in space (Moltmann 1998):

   (iv) This pole is higher / longer than that one. [↑](#footnote-ref-6)
7. See Doetjes (2012) and Pelletier/ Schubert (1989, 2003) for criteria for mass and count. [↑](#footnote-ref-7)
8. See Pelletier/ Schubert (1989, 2003) for an overview of different approaches to the semantic mass-count distinction. [↑](#footnote-ref-8)
9. See also Soja/Carey/Spelke (1991). [↑](#footnote-ref-9)
10. Thus, for Jespersen (1924, p. 198): ‘There are a great many words which do not call up the idea of some definite thing with a certain shape or precise limits. I call these ‘mass-words’; they may be either material, in which case they denote some substance in itself independent of form, such as silver, quicksilver, water, butter, gas, air, etc., or else immaterial, such as leisure, music, traffic, success, tact, commonsense’ . [↑](#footnote-ref-10)
11. See, for example, Moltmann (1997) and Chierchia (1998b), for discussion. [↑](#footnote-ref-11)
12. See, for example, Chierchia (1998b), Cohen (to appear) for linguistic discussions of object mass nouns. [↑](#footnote-ref-12)
13. This has given rise to variants of extensional mereological theories, such as epistemic theories (Chierchia 2015), or context-based theories (Rothstein 2010, 2017). [↑](#footnote-ref-13)
14. For classifiers and the distinction between mensural and sortal classifiers in particular see Cheng / Sybesma (1999), Doetjes (2012), and Rothstein (2017) [↑](#footnote-ref-14)
15. The verb *count* itself is not that bad with collective singular count NPs in English:

    (i) a. ? John counted the class.

    b. ?John counted the committee.

    (ii) a. ?? John counted the orchestra.

    b. John counted the orchestra members.

    This may be because *count* is in fact a predicate making reference not just to the parts, but also the whole of the argument, involving a condition of exhaustion of the parts. In German the prefix *durch* ‘through’ makes that condition explicit, which leads to the contrast between (iiia) and (iiib) (Moltmann 1997):

    (iii) a. ?? Hans zaehlte die Klasse.

    ‘John counted the class’

    b. Hans zaehlte die Klasse durch.

    John counted class through.

    [↑](#footnote-ref-15)
16. In that theory, the notion of FF-integrated whole is important because it restricts sum formation (which is restricted to integrated wholes in general). [↑](#footnote-ref-16)
17. Note that the data with *whole* make clear that the Accessibility Requirement could not be viewed as a syntactic selectional requirement. [↑](#footnote-ref-17)
18. The data are presented in a less differentiated way in Moltmann (1997). [↑](#footnote-ref-18)
19. See Moltmann (2005) for the semantics of *individual* within the theory of situated part structures. [↑](#footnote-ref-19)
20. There are some limits as to the sorts of object mass nouns that allow for a distributive reading of predicates of size and shape. Mass nouns that put function or value into focus disfavor such readings:

    (i) a. ?? The decor is large.

    b. The furniture is large.

    (ii) a. The artwork is small.

    b. ?? The art is small. [↑](#footnote-ref-20)
21. Predicates like *enormous* can target the entire denotation of a mass NP if the denotation is a quality or trope, in which case they convey intensity rather than size in the spatial sense, as illustrated in the contrast below:

    (i) a. John’s excitement was enormous.

    b. The equipment was enormous. [↑](#footnote-ref-21)
22. The reason why predicates of size and shape cannot apply to quantities and pluralities is, it appears, that properties of size and shape individuate ordinary material objects, whereas quantities and pluralities are individuated strictly by what mass nouns and singular count nouns apply to (in a given context) and cannot be subject to further conditions on their persistence. [↑](#footnote-ref-22)
23. There is a third option, which I will not further discuss, and that is, that neither the ontology of ordinary objects, nor the language-driven ontology are real, but only the ontology of the fundamental. The language-driven ontology and the ontology of ordinary objects would then be mind-dependent, perhaps on a par with fiction. Unity, on that view, would be considered a cognitive notion, added on to chunks of reality and thus leading to mind-dependent entities. [↑](#footnote-ref-23)
24. Further parallels among the part structures of individuals, pluralities and quantities are discussed in Moltmann (1997, 1998). Parallels between the domain of pluralities and the domain of quantities only are the focus of extensional mereological theories in the tradition of Link (1983). See also Champollion/Krifka (2016). [↑](#footnote-ref-24)
25. But see Nicolas (2008) for a proposal of that sort. [↑](#footnote-ref-25)
26. For proposals in that direction see McKay (2017) and Laycock (2006). [↑](#footnote-ref-26)
27. See Yang for a recent discussion of functional part of grammar as constituting core grammar. [↑](#footnote-ref-27)
28. For Chomsky (p.c.) that skepticism pertains to both actual and merely conceived objects as semantic values of referential NPs. [↑](#footnote-ref-28)
29. See Hespos/Spelke (2004). [↑](#footnote-ref-29)