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Natural Language and its Ontology

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Abstract

Natural language reflects its own ontology, an ontology that may differ from the ontology a philosopher may be willing to accept or even a non-philosopher when thinking about what there is, and of course it may differ from the ontology of what there really is. This paper gives a characterization of the ontology implicit in natural language and the entities it involves, situates natural language ontology within metaphysics, discusses what sorts of data may be considered reflective of the ontology of natural language, and addresses Chomsky's dismissal of externalist semantics.

Key words

ontology, natural language, reference, descriptive metaphysics, variable objects, tropes, kinds, existence, Chomsky, Fine

Introduction

Natural language, it appears, reflects in part our conception of the world. Natural language displays a great range of types of referential noun phrases that seem to stand for objects of various ontological categories and types, and it also involves constructions, categories and expressions that appear to convey ontological or metaphysical notions, for example ontological categories of various sorts, plurality, quantity, identity, causation, parthood, truth, and existence. But it also appears that natural language reflects ontological categories, structures, and notions that not everyone may be willing to accept, certainly not every philosopher, but often not even an ordinary person when thinking about what there is and the general nature of things.

Most notably, natural language appears to involve a wealth of terms that display a rich ontology of artefactual, derivative, minor, abstract, and even nonexistent entities that philosophers generally tend to reject and even an ordinary person when thinking about what

there really is. They include terms for qualities or properties (*wisdom, the property of being wise*), tropes (*Socrates' wisdom, John's tallness*), nonworldly facts (*the fact that John won the race or Bill did*), variable objects, as I call them (Moltmann 2013b, to appear) (*the increasing number of students, the book John needs to write*), and intentional objects (that is, merely conceived or nonexistent objects) (*the building mentioned in the guide that does not exist*). Whether abstract objects such as qualities or properties really exist is disputed as is the existence of tropes and facts, and even more so, of course, the existence of variable and intentional objects. But while a philosopher may reject the disputed entities she is likely to use natural language terms for them when engaging in ordinary conversation.

Also metaphysical concepts may be reflected quite differently in natural language predicates than philosophers would expect. For example, while it is nowadays a common view that existence is a univocal concept applying to everything there is, the predicate *exist* is actually restricted to material objects and abstract objects of certain sorts and is inapplicable to events (*The building described in the guide exists and the smallest prime number exist* are acceptable, but not so for *the inauguration existed six months ago*). Again, this holds not just for an ordinary speaker (a non-philosopher), but also philosophers, who will not be able to suspend the restrictions when using the predicate *exist* in ordinary discourse.

There are different reactions philosophers take in view of such discrepancies between the ontology implicit in language and the reflective ontology that a philosopher or non-philosopher is willing to accept explicitly. For some philosophers, it means a complete rejection of language as a guide to metaphysics, to what there really is and the real nature of things. Many contemporary philosophers take that position, aiming to focus just on the metaphysics of the real, not caring about what is reflected in natural language or even other common sense judgments. Other philosophers, in the tradition of ordinary language philosophy, focused entirely on natural language (Strawson, Austin). Yet other philosophers took language seriously for some purposes, but not others, for example Frege. Frege was guided by language for his view of numbers as objects, but not for his view of truth values having that status. Not all philosophers that appealed to natural language, of course, did so having in mind a discrepancy between the metaphysics displayed by natural language and the metaphysics of what there really is. Aristotle, medieval philosophers, Frege, Twardowski, and even Strawson, it seems, did not.

In any case, throughout history philosophers made appeal to language for the purpose of an ontological view. But they did so without an explicit methodology and in a nonsystematic way, citing one or two sentences without ensuring that a real linguistic generalization was at

hand. Arguments for numbers and propositions from putative referential terms are examples. Thus, Frege (1884) took it to be evident that a sentence like *the number of planets is eight* is an identity statement in which the subject and the postcopula term could stand only for numbers as abstract objects. However, then the sentence *the number of planets is the number eight* should be equally good, which it is not. Similarly, following Frege (1918), many philosophers consider *that*-clauses to be proposition-referring terms and attitude verbs predicates that take propositions as arguments. But then a sentence like *John claimed that he won* should permit the inference to *John claimed the proposition that he won*, which it does not, at least for most attitude verbs.¹

The development of theoretical linguistics in the twentieth century, both natural language semantics and syntax, forces a revision of this way of appealing to natural language for the purpose of a philosophical argument. It is no longer convincing or appropriate to make arbitrary appeal to some linguistic examples or others at a time when establishing linguistic generalizations, including philosophically relevant ones, has become the domain of a highly developed theoretical discipline. Moreover, it is no longer only a matter of a philosopher's choice of being more or less interested in the ontology reflected in language. Rather the ontology implicit in natural language emerges as a domain of study in itself, as the subject matter of *natural language ontology*, as a branch both of linguistics and of metaphysics.²

This brings with it a range of issues and challenges. One issue is how natural language ontology situates itself within metaphysics and how it relates to pursuits in metaphysics that are not focused on natural language. One important challenge is to make explicit the methodology that natural language ontology should pursue, which in part is the methodology that philosophers throughout history have relied on when making appeal to natural language. This involves the question what sorts of linguistic data can be considered reflective of the ontology of natural language and what sorts of data cannot, and what part of natural language or its use should matter. Another challenge is the characterization of the ontology of natural

¹ There are a few verbs with which such substitution is possible, such as *assert*, *believe*, and *prove*, but they are the exception rather than the general case. See, for example, Moltmann (2013b, chap. 4).

² I choose the term 'natural language ontology' rather than 'natural language metaphysics'. The latter would be more accurate since metaphysics is generally understood as the more general term whose subject matter is not just what there is, but also the nature of things. However, 'ontology' is a term more suited to talk also about the subject matter of the discipline, the ontology of natural language. Moreover, there are irrelevant connotations associated with 'metaphysics' (or the surreal, the meta-physical). In addition, 'ontology' is a term more customary in linguistics or other 'applied' domains ('applied ontology'). 'Ontology' is then to be understood to be as general as 'metaphysics', having as its subject matter not just what there is but also the nature of things.

language, given that it may significantly differ from the reflective ontology of an ordinary speaker (or philosopher).

This paper aims to contribute to the issues and challenges of natural language ontology by clarifying its subject matter in relation to other branches of metaphysics, by making the criteria explicit that distinguish linguistic data that may reflect the ontology of natural language from those that may not, by laying out some core cases that show a discrepancy between the reflective or philosophical ontology and the ontology implicit in language, and by giving a general characterization of the ontology of language and the domain of real or conceived objects it includes.

1. The ontology of language as the subject matter of natural language ontology

Throughout the history of philosophy, there has been a practice of making appeal to linguistic examples or generalizations in support of a particular ontological notion or view. In this sense, natural language ontology has been practiced to a greater or lesser extent throughout the history of philosophy. Aristotle and medieval metaphysicians such as Aquinas and Ockham made appeal to natural language in support of a metaphysical notion or view. In early analytic philosophy, we find explicit appeal to natural language in Frege as well as Twardowski (1912). Appeal to natural language then plays an important role in the philosophy of Austin, Strawson and Vendler and of course of various contemporary philosophers.

Along with the development of theoretical linguistics, it is becoming clear that the ontology of natural language is also a subject matter of study in itself, the subject matter of natural language ontology, and that natural language ontology needs to be recognized as a discipline in itself, as part of both natural language semantics and metaphysics. But then how does natural language ontology situate itself within metaphysics in general?

Natural language ontology would be part of descriptive metaphysics in Strawson's (1959) sense. Descriptive metaphysics has as its aim to uncover our shared conceptual scheme, as Strawson characterizes it, or better, since metaphysics is not about concepts but objects, the ontological categories, structures, and notions represented by our shared conceptual scheme. Like descriptive metaphysics in general, natural language ontology would be characterized in terms of the data with which it concerns itself. Those data, however, are not so much common-sense judgments, but linguistic intuitions, judgments about the acceptability or grammaticality of natural language sentences and constructions.

Should natural language metaphysics be based exclusively on linguistically reflected intuitions? The answer must be no. Natural language may underspecify the ontology that is involved in its semantics. Theories within natural language ontology cannot and should not be developed solely taking linguistic data into account, but must be developed in conjunction with purely philosophical considerations and arguments. To give examples from my own work, the theory of parts and wholes in Moltmann (1997) is motivated also by independently motivated conditions on form or integrity and the theory of attitudinal objects in Moltmann (2014a) by language-independent intuitions about artifacts.

Unlike other branches of metaphysics, however, natural language ontology should give priority to linguistically reflected intuitions, rather than common-sense intuitions. Common-sense intuitions may represent a speaker's reflective ontology, not the ontology implicit in language. Other branches within descriptive metaphysics may be based on common sense intuitions that are not reflected in language and may even contradict intuitions reflected in language, say applied ontology and what one may call 'folk metaphysics'.

For Strawson (1959), descriptive metaphysics contrasts with what he calls 'revisionary metaphysics'. The aim of revisionary metaphysics, for Strawson, is to conceive of a better ontology than the one we ordinarily accept. Strawson does not specify further how 'better' is supposed to be understood, whether for the purpose of getting a better understanding of the nature of reality or perhaps for the purpose of better developing particular scientific theories.

A notion similar to that of descriptive metaphysics has recently been proposed by Fine (2017), namely *naïve metaphysics* or the metaphysics of appearances.³ Naïve metaphysics for Fine concerns itself with how things appear, without trying to address the question of whether they are real. Naïve metaphysics deals with our ordinary judgments and has as its subject matter the things that we ordinarily take there to be and their nature. Fine contrasts naïve metaphysics with what he calls 'foundational metaphysics'. Foundational metaphysics has as its subject matter what there really is and its nature. Foundational metaphysics, as Fine emphasizes, presupposes naïve metaphysics. Foundational metaphysics has to make use of the concepts and statements that naïve metaphysics aims to clarify and has as one of its tasks to explain them, if possible, in more fundamental terms, be they materialist or mentalist, or whatever. Naïve metaphysics as the metaphysics of appearances should not be guided by considerations of foundational metaphysics, but rather, as Fine argues, foundational metaphysics must take naïve metaphysics as its starting point in order to do its foundational

³ See also Fine (2001).

work. Again, natural language metaphysics would be part of naïve metaphysics and as such, given Fine's point, would have an important role to play even in the interest of foundational metaphysics.

For Fine, the subject matter of naïve metaphysics is the things that appear to be and how they appear to be in most general terms. No considerations of what is real or fundamental should come into play when pursuing naïve metaphysics. However, such a separation of naïve and foundational metaphysics appears not entirely unproblematic. Considerations of truth and thus reality play an important role for naïve metaphysics as well. Common-sense judgments are directed toward reality and only those held to be true should be taken into account by naïve metaphysics. Also the objects among the 'appearances' that are the subject matter of naïve metaphysics, even if highly derivative, may be grounded in reality and must be understood in the way they are so grounded (Section 3.2.). To figure out what sorts of objects a referential noun phrase stands for requires considerations as to what grounds the truth or falsehood of sentences in which that noun phrase occurs, and thus conceiving of the object in relation to what there really is. Certain considerations of foundationalist metaphysics therefore may have to play a role even for pursuing naïve metaphysics. Thus, two metaphysical projects cannot be strictly separated, with one building upon the other.

If natural language metaphysics is part of naïve metaphysics in Fine's sense, the choice of the predicate 'naïve' is misleading. Natural language ontology does not concern itself with what the ordinary person naively takes there to be (if one can even speak of a generic ordinary person, the generic non-philosopher).⁴ Rather, it deals with the ontological categories, notions, and structures that only a deep and systematic analysis of natural languages may uncover.⁵ It is the ontology implicit in language, not the ontology displayed by 'naïve' ontological reflections of non-philosophers. For that reason, the term 'descriptive metaphysics' is less misleading and is also to be preferred since it is a more established term.

Natural language ontology is the branch of descriptive metaphysics that gives priority to linguistic data. There are also areas where natural language may play no role and descriptive metaphysics would cover metaphysical analyses that are based on common sense intuitions that are not as such reflected in language. Fine's (to appear) recent paper on form, for

⁴ Note, though, that this is not the notion of 'naïve' that Fine has in mind, Fine means with 'naïve' simply 'uncritical'.

⁵ Fine (p.c.) also uses the term 'shallow metaphysics' instead of 'naïve metaphysics', perhaps a better choice when it comes to natural language ontology. 'Shallow metaphysics' is the term I use, following Fine (p.c.), in Moltmann (2014b) for the branch of metaphysics that natural language ontology belongs to.

example, falls explicitly within descriptive metaphysics, but does not take into consideration any linguistic data.

Linguistically reflected intuitions need not coincide with common-sense judgments about ontological issues. There may be discrepancies between a metaphysical notion reflected in language and the one a philosopher, or a non-philosopher upon reflection, may be willing to accept. An example mentioned already is existence. Existence is commonly held to be a notion that trivially applies to everything there is, or at least every actual thing, a view held at by a great number of contemporary philosophers and defended particularly by Inwagen (2014). However, in natural language the predicate *exist* is subject to strict conditions on the type of entity to which it can apply: it applies to material and abstract objects, but not to events (Hacker 1982, Cresswell 1986, Fine 2006, Moltmann 2013d):

- (1) a. The house still exists.
- b. The largest prime number does not exist.
- (2) a. ??? The rain still exists.
- b. ??? The protest existed yesterday.

Events do not exist, but take place, happen, occur, or last. Existence in the ontology of natural language thus divides into different modes of being for different sorts of entities. Not only philosophers, but also an ordinary person may have a reflective notion of existence that is not the one conveyed by the verb *exist*, which conveys the particular mode of being of enduring objects.

Later I will present a range of particularly striking cases of objects that act as semantic values of referential terms and that philosophers but also non-philosophers upon reflection are not likely to accept. These are entities, though, that speakers implicitly accept -- at least when using the language.

Characterizing the ontology of natural language thus requires a distinction between *implicit acceptance* of an object or ontological notion and *explicit acceptance* and perhaps even degrees of explicit acceptance. Implicit acceptance defines the ontology implicit in language, explicit acceptance defines the reflective ontology of speakers.⁶ The ontology of

⁶ The implicit-explicit distinction also plays a role in ethics. In ethics, though, what is explicit is given priority over what is implicit, which includes prejudice and bias (Braunstein 2017). By contrast, in the case of ontology it is rather the converse. When pursuing natural language ontology the reflective, explicitly accepted ontology may present prejudice, rather than the ontology implicit in language.

natural language thus needs to be distinguished from both the reflective ontology of speakers and the ontology of what there really is.

It is not quite correct to speak of *the* reflective ontology, actually, since there may be various reflective ontologies of speakers, at least in certain areas. The data for descriptive metaphysics to take into account when directed toward a reflective ontology are much less clear and stable than the data relevant for the ontology of natural language, as is the case, for example, for the ontological categories of events and tropes (Section 2). Natural language ontology raises its own issues, though. One issue is to what extent the ontology may be specific to a particular language. The latter touches upon the Safir-Whorf hypothesis and it raises the question whether ontological differences associated with different languages may be compatible with a universal ontological core that may generate different ontologies for different languages. These questions will be important themes when pursuing natural language ontology.

Another issue is to what extent the ontology of a natural language may be driven by language itself. For example, certain objects in the ontology may be generated by the semantics of complex terms in the language (see Section 5). This means that implicit acceptance of that part of the ontology will be tied to the use of language itself, whereas other parts may belong to a less language-driven implicit cognitive ontology.

A final issue that the ontology of natural language presents is that there are different ways for concepts or entities to be involved in the semantics of natural language and they may reflect different degrees of implicit acceptance or reflection. This is the case, for example, for the notion of existence. The nonrelational noun *existence* obviously can be used for the reflective notion, as I have used it in this paper. However, the verb *exist* conveys a restricted notion, and that regardless of the language user's reflective ontology. This also holds for the relational use of the noun *existence*. *The existence of the rain yesterday* and *the existence of protest yesterday* are just as bad as (2a) and (2b). Relational and nonrelational nouns thus may convey notions of different degrees of reflection. A more general distinction discussed in Section 5 is that between the core of language, roughly consisting of expressions whose use does not involve ontological reflection, and the periphery of language, which consists of expressions that imply a certain degree of ontological reflection (see Section 5).

To summarize, various levels of judgments associated with degrees of reflection need to be distinguished for pursuing metaphysics: linguistically manifest intuitions (of possibly different linguistic levels), common-sense judgements that reflect a shared conceptual scheme

(or perhaps a partly shared conceptual scheme), and judgments that belong to a particular philosophical view.

2. How is ontology reflected in natural language?

There has hardly been an explicit effort of clarifying the methodology of natural language metaphysics, as a practice philosophers have pursued throughout the history of philosophy as well as an emerging discipline that is part of both theoretical linguistics and metaphysics.

The philosophical practice of natural language ontology, as a matter of fact, follows rather strictly certain implicit assumptions as to what data could support an ontological view and what data couldn't. Not just philosophers pursuing natural language ontology for the purpose of particular philosophical arguments make use of certain types of linguistic data but not others. This also holds for linguists and philosophers in pursuit of the study of the ontology of natural language by itself. That is, the actual practice of natural language metaphysics follows an implicit methodology. Making those assumptions explicit is very important for an appropriate understanding of the ontology of natural language and the project of natural language ontology as such.

Natural language ontology obviously should not take into account statements that only a particular philosopher would accept – statements of a particular philosophers' metaphysics, say. Natural language ontology likewise should not take into account statements expressing what may be the ontological view of a non-philosopher. Statements of this sort may articulate what one may call the *reflective ontology* of an ordinary person, but they are not indicative of the ontology implicit in natural language.

What sorts of criteria distinguish statements that reflect the ontology implicit in natural language from those that do not? One distinction that plays a role in distinguishing relevant and irrelevant data for natural language ontology is the distinction between ontological assertions and presuppositions. Sentences that themselves make ontological assertions can hardly be taken as indicative of the ontology implicit in natural language. Philosophers never make use of such sentences when drawing from natural language for the purpose of a metaphysical argument. Thus, no practitioner of natural language ontology would appeal to sentences like (3) in order to argue for events being part of the ontology of natural language:

(3) There are events.

Also, philosophers who would *not* want to endorse events as an ontological category would generally be unimpressed by statements like (3) (just as atheists would not be impressed by sentences such as *There is god*).

Similarly, platonists that seek support from natural language for properties being objects would never appeal to statements of the sort in (4):

(4) There are properties / qualities / virtues.

Similarly, nominalists generally would be unimpressed by the availability of statements like (4).

One type of statement that *is* used to argue for natural language supporting an ontological category is a statement in which a particular referential noun phrase occurs that stands for an entity of the relevant ontological category. Thus, statements like (5a, b, c) support events as part of the ontology of natural language:

- (5) a. John's walk was slow.
 b. The rain caused the roof to fall down.
 c. The war took place a decade ago.

Why should the semantic values of nouns such as *walk*, *rain*, and *war* stand for events? That is because the predicates that are applicable to what such nouns stand for express properties characteristic of events, such as properties of duration, causation and perdurance (*take place*), properties that, taken together, are applicable only to events.

Similarly, statements such as (6) are suited to motivate properties or qualities being part of the ontology of natural language:

- (6) a. Socrates has wisdom.
 b. Socrates and Plato share great wisdom.
 c. Wisdom is everywhere in this book.

Here a referential noun phrase (*wisdom*) stands for something that can be possessed, shared by individuals, and be at different locations at once, properties characteristic of qualities.

Being the semantic value of a *referential noun phrase*, in general, is considered the primary criterion for an object to be part of the ontology of natural language. Referential noun

phrases, that is, names and referential (nonpredicative) occurrences of definite noun phrases, presuppose the existence of their semantic value, an object. Sentences such as (5a-c) and (6a-c) presuppose rather than assert the existence of events and qualities. Thus, here it is presuppositions that are indicative of the ontology implicit in language.

Also quantification over individual members of an ontological category is considered a reflection of that ontological category being part of the ontology of language, for example (7), for the category of events:⁷

(7) Heavy rain caused the roof to fall down.

Davidson (1967), the most influential advocate of events as part of the ontology of natural language, did not so much appeal to statements such as (7), though. Rather he argued that verbs take events as implicit arguments and adverbial modifiers are predicates of those events. That was to account for valid inference such as from (8a) to (8b):

(8) a. John walked slowly.

b. John walked.

Thus, for Davidson, the verb *walk* describes a two-place relation between events of walking and agents and *slowly* will act as a predicate of an event argument the sentence existentially quantifiers over, as in the logical form of (8a) in (9):

(9) $\exists e(\text{walk}(e, \text{John} \ \& \ \text{slowly}(e))$

Of course, *slowly* as an adverbial event predicate has the very same meaning as the adjectival event predicate *slow* in the sentence below:

(10) John's walk was slow.

Why did Davidson's data qualify as reflecting the ontological category of events? For Davidson, adverbials act as predicates, and they act as predicates of the sort of entities

⁷ This is an addition to Moltmann (2017), where only presuppositions are considered indications of the ontology implicit in natural language.

described by verbs, which can only be events, the sorts of things the corresponding deverbal nominalization stands for.

The very same arguments that had motivated events being part of the ontology of language motivate tropes, that is, particularized properties, to be part of it.⁸ Tropes have played an important role since Aristotle, for whom they made up an ontological category besides substances, secondary substances, and qualities. Tropes have traditionally been considered the semantic values of referential NPs formed with adjective nominalizations such as *Socrates' wisdom*, *John's happiness*, or *the redness of the apple* (Strawson 1959, Woltersdorff 1970, Moltmann 2004, 2013b, Chap 2). But tropes also play a role as implicit arguments of adjectives. Modifiers of adjectives, at least to an extent, also occur as predicates of the corresponding trope-referring term obtained from the adjective (Moltmann 2009, 2013b), as illustrated below:

- (11) a. Socrates is extremely wise.
 b. Socrates' wisdom is extreme.

This means that *wise* describes a relation between wisdom tropes (manifestations of wisdom) and agents, so that (11b) will have the logical form in (12):

- (12) $\exists t(\text{wise}(t, \text{Socrates}) \ \& \ \text{extreme}(t))$

Natural language gives equal support for tropes and for events. In a sense, the reflective ontology of speakers does not support both categories equally well, though. While events are an established category in contemporary linguistic semantics (and syntax) and in philosophy, tropes are much less so. This was different, however, in earlier periods in the history of philosophy, as already mentioned. Tropes during those periods played a much more important role in metaphysics and presumably the reflective ontology of speakers. Thus, for events and tropes, and perhaps in general, natural language gives a more stable ground of judgments indicative of ontology than the more explicit assumptions underlying a reflective ontology.

3. Reifying terms and the ontological core-periphery distinction

⁸ For the notion of a trope see Williams (1953), Campbell (1990), and Woltersdorff (1970).

While deverbal and deadjectival nominalizations generally are considered good support for events and tropes being part of the ontology of natural language, there is a type of referential noun phrase in English that is generally not considered a reflection of the ontology implicit in language. These are what I call ‘reifying terms’ (Moltmann 2013b, Chap 6). An example of a reifying term is *the property of wisdom*, as below:

(13) Socrates has the property of wisdom.

Whereas properties may seem unproblematic to some, the very same construction also permits reference to numbers, degrees, truth values, and propositions:

- (14) a. the number eight
 b. the truth value true
 c. the degree of John’s happiness
 d. the proposition that S

Philosophers hardly ever appeal to constructions of this sort when arguing for ontological categories. Thus, Frege did not appeal to terms like (14a), but rather to terms like *the number of planets* when arguing for numbers being objects, and he certainly did motivate truth values by appealing to terms like (14b). Semanticists that posit degrees as objects in the semantics of natural language generally do not appeal to noun phrases like (14c) but rather to constructions with positive or comparative adjectives (Cresswell 1977). Finally, the linguistic motivation for propositions generally comes from the apparent referential status of simple *that*-clauses, not noun phrases like (14d).

Reifying terms as in (14) introduce new entities on the basis of a sortal and, generally, a nonreferential expression or use of an expression (a nouns or adjective, for example), leading to a reified concept or propositional meaning (Moltmann 2013b, Chap. 6). Thus, *the number eight* introduces a number as an object on the basis of a number adjective or quantifier *eight* and *the truth value true* introduces a truth value of an object on the basis of the truth predicate *true*.⁹ Reifying terms are part of English. But they can be taken at best as evidence for certain

⁹ Predicate-initial sortals also have a reifying function:

- (i) a. Wisdom is a property few have.
 b. Eight is a number that is divisible by two.

types of objects playing a role in a special discourse, not as a reflection of objects being part of the ontology of ordinary language.

In addition to reifying terms, natural language also permits extensions with terms used for special, philosophical or scientific, discourse. Those terms should have the same semantics as other referential noun phrases, namely that of standing for an object. But the objects they stand for need not belong to the ontology of natural language, but only to an extension of it (and like all referential noun phrases, the terms in the periphery may stand for merely conceived objects not actual ones, see Section 6).

Two sorts of linguistic data thus need to be distinguished: linguistic data that in some sense belong to the *core* of language and data that belong to a part that conveys an ordinary speaker's or philosopher's ontological reflections, its *periphery*. The periphery in that sense includes reifying terms as well as (technical) terms that may have been introduced by extending the language. The periphery involves entities that some philosophers or non-philosophers may accept, but which would not be part of the ontology of natural language, the ontology *any* speaker implicitly accepts when using the language. The latter is what is reflected in the core of language. Thus a condition of the following sort obtains:

(15) The ontology of natural language is reflected in the core of language, not its periphery.

Certainly, the periphery of language also has a semantics, and it also reflects an ontology with its referential terms standing for entities of some sort. Using Fine's (2017) notion, this ontology would be part of the subject matter of the metaphysics of appearances as well. This holds even for terms in the periphery that belong to foundational metaphysics.

The terms 'core' and 'periphery' recall a distinction of the same name that Chomsky (1986) made for the syntactic structure of languages. The Chomskyan distinction is in a way the analogue for syntax of the present ontology-oriented distinction. For Chomsky (1986), roughly, the 'core' of a language consists in what is determined by (innate) Universal Grammar, that is, universal principles together with the way the parameters of Universal Grammar are set for that language. By contrast, what Chomsky calls the 'periphery', roughly, consists in idiosyncratic rules unique to that language and added on in the historical development of the language. Chomsky's distinction does not in any way coincide with the present one since clearly, the formation of new philosophical terms may take place entirely

See Moltmann (2013b, chap. 6) for discussion.

within what Chomsky would call the ‘core’ of language. This most certainly is the case with reifying terms, which are formed productively across European languages.

Universality is not what matters for what terms are in the periphery in the present sense, only ontological reflection does. Entities that are semantic values of terms in the periphery of language may be the outcome of applying universal conditions for generating objects.¹⁰ What matters is that they are the semantic values of terms used as a result of ontological reflection.

Not all noun phrases that are reifying terms belong to the periphery in the present sense. Explicit fact-referring terms, which stand for non-worldly facts (*the fact that John won the race or Bill did*) are a sort of intermediary case and even explicit property-referring terms may be so (*the property of wisdom*). Philosophers practicing natural language ontology in fact have made use of such terms. An example is Vendler (1967) when arguing for a fundamental distinction between facts and events, and myself in Moltmann (2004) when arguing for a distinction between qualities and properties.

4. The ontology of natural language reflected in its referential terms

4.1. Referential terms and the notion of an object

It is one of the most striking features of natural language that it contains a wealth of referential terms displaying a great range of abstract, ‘derivative’, and ‘minor’ entities, many of which would not be part of the reflective ontology of an ordinary speaker or philosopher. In the following subsections, I will present a number of cases of a particularly striking discrepancy between the ontology displayed by certain referential noun phrases in natural language and what is likely the reflective ontology of ordinary speakers or philosophers.

First a few clarifying remarks are in order concerning the notion of a referential phrase. The notion of a referential noun phrase (or referential term) is used by philosophers and linguists alike as a criterion for the kinds of objects that are part of the ontology of natural language.¹¹ The notion of a referential noun phrase or term (when applied to natural language

¹⁰ Such conditions, in particular for the semantics of reifying terms, may take the form of abstraction principles (Wright 1983, Hale 1987) and conditions of generating pleonastic entities (Schiffer 1996, 2003). See Moltmann (2013, chap. 6) for an approach to reifying terms of that sort.

¹¹ For Frege referential terms serve as a criterion for objecthood itself. According to that criterion, an object is what can be the semantic value of referential term (Wright 1983, Hale 1987). However, objects may also play other semantic roles in the ontology of natural language without acting as semantic values of referential terms, for example as implicit arguments and as parameters of evaluation.

rather than a formal language) should be understood as a syntactic role of occurrences of expressions in sentences, rather than as a syntactic category. Definite noun phrases as such can also occur predicatively and as complements of intensional transitive verbs (*need, look for*), and then they do not stand for objects. While there is no agreed-upon set of criteria for identifying an occurrence of a noun phrase in a sentence as a referential term, there are two sorts of criteria for referential terms that philosophers and linguists generally make use of. This is the ability of supporting anaphora and the ability of being replaceable by a quantifier (under suitable circumstances).¹² In addition to the anaphora and quantifier criterion, a criterion for referential terms that is implicitly used in the philosophical and linguistic literature is the uniformity of the meaning of (extensional) predicates. If an extensional predicate with a range of referential noun phrases can yield a true sentence with another noun phrase *X*, then *X* should also be a referential noun phrase. This criterion highlights the connection between ontology and compositional semantics as well as the connection between truth and ontology (Section 2), and it makes clear that the question of what objects are involved in the semantics of sentences can be pursued only together with the question under what circumstances a sentence is true.

4.2. Referential terms and the discrepancy between implicit and reflective ontology

The referential terms of natural language do not display an ontology of what is ordinarily understood as ‘real’ objects, but rather they present a great range of cases of a discrepancy between the ontology of natural language and the reflective ontology of speakers, philosophers as well as non-philosophers.

4.2.1. Definite NPs and the notion of a construction-driven variable object

¹² The anaphora and quantifier criteria need to be applied with caution, though. Not all quantifiers and pronouns that are able to replace an occurrence of an expression in a sentence are indicative of the expression acting as a referential term. There is a class of special quantifiers and pronouns that characteristically are able to replace nonreferential occurrences of expressions, which in English consists of quantifiers like *something, everything, nothing, several things*, and *that*. They can replace predicative complements, for example:

- (i) a. Socrates is wise.
- b. Socrates is something admirable.

Such special quantifiers and pronouns arguably are nominalizing expressions introducing a ‘new’ domain of entities into the semantic structure of sentences, entities that would be referents of corresponding nominalizations (*wisdom* in (ib)) (Moltmann 2003, 2013b, chap. 3).

In Moltmann (2013b, to appear), I discussed and analysed a construction with definite NPs that also shows a discrepancy between the ontology implicit in natural language and ordinary speakers' reflective ontology. The construction takes as its semantic value what I call *variable objects*, following Fine's (1999) notion of a variable embodiment (Moltmann 2013b, to appear). It comes in different varieties:

- (15) a. The president of the US is elected every four years.
 b. The water in the container has increased.
 c. The height of the water level has increased.
 d. John's happiness has not changed.

The variable objects may be variable individuals as in (15a), variable quantities as in (15b), variable degrees (or quantitative tropes) as in (15c), or variable tropes as in (15d). This means, following Fine (1999), that (15a) and (15b) stand for objects that have possibly different individuals / quantities as manifestations at different times. This account was carried over to (15c) and (15d) in Moltmann (2013b, to appear). If heights are degrees (or quantitative tropes), then (15c) stands for a variable object whose manifestations are degrees (or quantitative tropes), and (15d) for one whose manifestations are tropes (Moltmann 2013b, to appear). Variable objects are objects that are associated with a function mapping a circumstance (time and world or situation) to an entity that is the manifestation of the object at the circumstance.

With the use of an intensional verb inside the relative clause, the same construction permits reference to variable objects that may lack actual manifestations but have manifestations only in counterfactual circumstances, as below (Moltmann 2013b, to appear):

- (16) The book John needs to write must be two hundred pages long.

The book John needs to write is a variable object that has as its manifestation a book John has written in any circumstance satisfying the need in question (Moltmann 2013b, to appear).

The motivations for positing variable objects as semantic values the noun phrases in (15) and (16) are the same as for positing any other objects as semantic values. Variable objects noun phrases permit replacement by quantifiers, support anaphora, and may provide arguments of the very same predicates as noun phrases standing for ordinary objects ((16), for example, can be continued by *It cannot be any shorter or longer*).

For Fine (1999), variable embodiments include organisms and artifacts, as entities that permit a replacement of parts and thus have different material manifestations in different circumstances. The notion of a variable object would then be an extension of notions that are well-accepted in the ontology speakers explicitly accept. As semantic values of the definite noun phrases in (15b-d), though, they would be closely tied to the content of the construction, and as such belong to a language-driven creative part of the ontology implicit in natural language.

Speakers certainly are not likely to accept variable objects in their reflective ontology (though this may be different for presidential roles). But the construction of noun phrases for variable objects is entirely productive and speakers make use of it whether or not they accept or would accept variable objects when thinking about what there is.

What is also important about variable objects is that they are not just conceptual creations, but rather are based on manifestations in actual or perhaps possible circumstances, which determine their properties. This means that variable objects could not just be items in some conceptual-lexical structure.

4.2.2. Kind reference with bare nominals

Another construction in English that appears to generate derivative objects in a fully productive way are determinerless or bare mass or plural nouns or modifier-noun combinations. In the contexts below, the bare nouns are generally taken to stand for kinds (17a) (Carlson 1977) or qualities (17b) (Moltmann 2004, 2013b):

(17) a. Giraffes are not extinct.

b. Wisdom is better than cleverness.

Giraffes in (17a) on that view stands for a kind of individual, a kind whose instances are semantic values of corresponding definite or quantificational noun phrases, of the sort *that giraffe* or *some giraffe*. *Wisdom* in (17b) on that view stands for a kind whose instances are tropes, semantic values of corresponding definite or quantificational noun phrases, of the sort *Socrates' wisdom* or *some wisdom*. The referential status the bare nouns in (17a, b) is supported by the usual criteria (e.g. anaphora support, as when (17a) is continued by *they are widespread in Africa*).

Bare nouns as kind terms (*giraffes*) with their associated terms for instances (*that giraffe*) seem to support the Aristotelian view of two sorts of universals with two sorts of particulars: secondary substances with primary substances as instances and qualities with tropes as instances (Moltmann 2004). Moreover, kinds seem to share other characteristics that Aristotle attributes to them. A universal for Aristotle exists only if instantiated. This seems to be reflected in the behavior of existence predicates:

(18) Wisdom exists.

Exist when predicated of a kind can only state the existence of an instance, not the existence of a possibly uninstantiated kind. Moreover, kinds inherit nonepisodic properties from their instances: men have legs because individual men have legs etc (Moltmann 2004).¹³

However, kinds as semantic values of bare nominals differ significantly from any notion of a kind relevant in philosophical or scientific contexts. Any adjective-noun combination can make up a kind term, regardless of its content. Nominals like *tired giraffes* can be used semantically in the same way as kind terms like *giraffes*. Similarly, any combination modifier–adjective nominalization can serve as a term standing for a quality, for example *acquired wisdom*. The kinds in question thus do not match natural kinds or even kinds of artifacts, and the qualities do not match natural properties but abundant ones.

In addition to kind terms or quality terms in this sense, natural language displays explicit property-referring terms:

(19) the property of being wise

Explicit property-referring terms can be formed from any complex predicate (in the form of a gerund), regardless of its content (*the property of being wise and tall, the property of being wise or not wise, the property of being extremely wise* etc).

Natural language appears to display an ontological distinction between kinds as semantic values of kind terms and properties as semantic values of such property-referring terms (Moltmann 2004, 2013b). Kind terms differ from property-denoting terms with respect to the way predicates are understood. Thus, *exist* with kind terms can claim only the existence of an

¹³ The view of bare plurals and mass nouns standing for kinds as objects goes back to Carlson (1977). This view was taken over to quality terms as terms for kinds of tropes in Moltmann (2004). In Moltmann (2013b), by contrast, I explored an account of kinds as semantic values of kind terms in terms of plural reference (Oliver/Smiley 2013).

instance as in (18), but with property-denoting terms it claims the existence of a possibly uninstantiated kind (*The property of wisdom exists*). *Look for* when applied to a kind term requires just an instance to satisfy the search, as in (20a); but when applied to a property-referring term, it requires the property itself to play that role, as in (20b):

- (20) a. John is looking for wisdom.
 b. John is looking for the property of wisdom.

The two readings are also reflected in the way *find* is understood in (21a) and in (21b):

- (21) a. John found wisdom.
 b. John found the property of being wise.

Both kind terms and property-referring terms stand for things that depend strictly on the descriptive content of the terms, not on what kinds or properties are real or natural.¹⁴ The quality–property distinction again is a distinction that is generally not part of the reflective ontology of philosophers or non-philosophers. A related distinction, not involving a reifying term as in (19), is the distinction between qualities and conditions, semantic values of gerunds like *being wise* (Levinson 1978), again a distinction that is not generally part of a speaker’s reflective ontology.

4.2.3. Reference to tropes

Also tropes (particularized properties) display a significant discrepancy between the ontology many contemporary philosophers accept and the ontology reflected in natural language. Tropes, more recently, have come to play a central role within foundational metaphysics. Since Williams’ (1953) influential article, a number of philosophers have pursued a trope nominalist one-category ontology, proposing to conceive of properties as classes of similar tropes and individuals as bundles of co-located tropes (Campbell 1990, Bacon 1995, Simons 1994).

¹⁴ The peculiar status of kinds as semantic values of anaphora support is also compatible with *wisdom* not being a singular term, but a plural term standing for the plurality (as many) of the actual and possible instances of the kind (in the sense of plural reference of Oliver/Smiley 2013) (Moltmann 2013b).

Natural language displays a wealth of trope-referring terms, namely noun phrases with adjective nominalizations such as *Socrates' wisdom* or *the redness of the apple* (Woltersdorff 1970, Moltmann 2004, 2009, 2013b). However, tropes as part of the ontology of natural language differ significantly from tropes as discussed in contemporary foundational metaphysics.

First of all, tropes in foundational metaphysics are generally taken to be manifestations of natural (or sparse) properties. By contrast, adjectives hardly ever express natural or fully specific properties and thus adjective nominalization could not stand for instances of natural properties. Instead they generally stand for complex tropes instantiating the non-natural property the adjective expresses. Thus, *John's happiness* refers to a complex trope composed of the very specific things that together constitute John's happiness. In that respect, John's happiness differs from the state or condition that is the referent of *John's being happy* and the non-worldly fact that is the referent of *the fact that John is happy*. The latter are not grounded in specific features of reality, but rather are just constituted by the property of being happy and John, as the holding of that property of John (at a time) (Moltmann 2013c). For example, one can describe John's happiness (in detail), but not John's being happy or the fact that John is happy.

Natural language moreover displays a difference between a trope that is the referent of *John's height* and a trope that is the referent of *John's tallness*. The former can exceed Bill's height, but not really the latter, for example. John's tallness is a considerably more complex trope than John's height; it is something like John's height qua exceeding the contextual standard suitably construed (Moltmann 2009). Natural language furthermore displays a difference between the referent of *John's strength* and the referent of *John's weakness*, and that even in a case where John is in a way both strong and weak (Moltmann 2009). In such a case, *John's strength* and *John's weakness* could not possibly refer to the same physical condition, the same simple trope that has John as bearer. John's strength may exceed Mary's strength, but then that could not be true of John's weakness. This means that John's strength and John's weakness are both complex entities involving an inherently ordering with respect to the same sorts of physical conditions, but in different directions.

The ontology of tropes or trope-related entities that natural language reflects is thus considerably richer than the foundationalist trope ontologies that philosophers more recently have pursued. Still trope terms in natural language stand for entities grounded in fully specific

tropes, unlike terms for states, conditions or non-worldly facts, which stand for entities strictly constituted by the descriptive content of the noun phrases making reference to them.¹⁵

4.2.4. Difficulties for reference to (real) objects with referential noun phrases

The discrepancy between the reflective ontology of speakers and the ontology reflected in language may also extend to nouns for artifacts, cities, organisms and alike used in referential noun phrases. In fact, they are the main target of Chomsky's (1998, 2013) critique of the traditional notion of reference as a relation to mind-independent, real objects.

Chomsky (1998, 2013) points out a range of examples of referential noun phrases which, allowing inconsistent property ascriptions, could not stand for real objects. For example, what we refer to as a 'door' could be painted, replaced, and walked through, properties that could not be attributed jointly to material objects as standardly understood. Another example is a home (Chomsky 1998). What we refer to as a 'home' may have peculiar combinations of properties: one can own or sell a home, but not, for example, paint a home, in contrast to a house. Thus a home cannot be an object as standardly understood.¹⁶ Other examples Chomsky (1998, 2013) gives are cities, which can be destroyed and rebuilt at a different location, artifacts, which can undergo complete replacement of their parts, and persons with their relative independence of the bodies.

Chomsky's (1998, 2013) conclusion is that the semantics of natural language terms does not involve the reference relation as traditionally conceived, as a relation to real objects. The semantics of referential noun phrases rather involve lexical/conceptual structures deployed by speakers in particular contexts to refer to particular aspects of reality. Instead of a semantics with the (traditional) notion of external reference as its central notion, referential terms should

¹⁵ Another potential example of a discrepancy between the reflective ontology of speakers and the ontology implicit in natural language are noun phrases of the sort *the average American*. *The average American* is a noun phrase that appears to satisfy standard criteria for referential terms, allowing for a range of predicates that apply to clearly referential terms (*the average American likes Hamburgers*) and supporting anaphora (*the average American likes hamburgers he also likes French fries*). But it is not likely to stand for an object speakers would accept explicitly. The *ideal student* is a similar case. It exhibits criteria of referentiality and thus should stand for an object in the ontology of natural language. The object it stands for may have properties that are just based on counterfactual assumptions about students meeting certain standards. Noun phrases with modifiers such as *average*, *typical*, *ideal*, or *perfect* may be viewed as standing for highly derivative entities (whose properties, though, are grounded in facts or assumptions about particular entities). Such entities would be construction-driven, generated by the semantics of noun modification with certain sorts of modifiers. However, alternative analyses have been proposed of *the average American* not making use of derivative objects (Kennedy/Stalley 2009). Chomsky (1998), moreover, takes such noun phrases to be example of the traditional notion of reference as a relation to entities in the real world not applying to natural language.

¹⁶ Chomsky (2013, p.c.) also holds that view for the house, in fact for any artifacts and organisms.

have an internalist semantics, involving another level of syntactic representation, that of lexical-conceptual structure.

Chomsky's critique targets the traditional notion of reference as a relation to the external world as well as the notion of a mind-independent object that goes along with it. Chomsky does not consider the reference relation in the sense in which I am introducing it in this paper, as a relation that would permit mind-dependent and merely conceived objects as relata (entities in the ontology of appearances). This, on the present view, is the semantically relevant reference relation and is the reference relation that is reflected in language itself, namely in the intentional verb *refer to*. *Refer to* clearly can take as arguments mind-dependent objects and even intentional (nonexistent) objects (see Section 6 and Moltmann 2016).

Chomsky stays within the philosophical tradition, not drawing a distinction between the ontology of the real and the ontology of appearances in Fine's sense. His critique is based on a single ontology of the real, that is, of a mind-independent reality. Note that Chomsky's level of lexical conceptual structure consists in representations, not things represented, unlike the (intentional or real) entities in the ontology of appearances.

This then invites an exploration of ways of conceiving of objects as part of the ontology of appearances that would be suited as the semantic values of the noun phrases Chomsky discusses. Chomsky (p.c.) would deny that this was possible as no object could be bearer of inconsistent properties. Yet there have been various attempts of making sense of apparent polysemies of the noun phrases in question within applied ontology. One such approach is that of dot-objects, semantic values of referential noun phrases that serve to be developed into different objects with the application of different predicates (Pustejovsky 2015). This approach still makes use of conceptual structure, though, rather than ontology since dot objects are conceptual entities, rather than objects of the ontology. There are other approaches, however, which posit objects with different facets (serving as bearers of different predicates) or complex ontological categories (Arapinis/Vieu 2015).

In any case, the semantic behavior of certain referential noun phrases with different predicates challenge what appears to be the reflective ontology of speakers, and they impose an important task for natural language ontology as well as perhaps truth-conditional semantics.

5. The ontology of natural language

We have seen with a range of cases that the ontology displayed by natural language may differ from the sort of ontology that a philosopher may be willing to accept, and of course from the ontology of what there really is. But it may also differ from the ontology that an ordinary speaker of the language may be willing to accept when reflecting upon what there is. Natural language ontology concerns itself with the ontological categories, notions, and structures implicit in ‘ordinary’ statements of a non-philosophical discourse, not those that form the assertive content of philosophical or quasi-philosophical reflections.

How then should the ontology of natural language, as an ontology distinct from the reflective ontology of both philosophers and non-philosophers, be characterized? Certainly, such a characterization will involve the object-related attitude of implicit acceptance. A first proposal then would be this:

(22) The ontology of a natural language is the ontology that speakers of the language implicitly accept.

Given that characterization, the ontology implicit in natural language should be an ontology that is part of our cognitive system, as an ontology that goes along with speakers’ implicit beliefs, while using or not using the language.

However, this is too strong a condition. We have seen that the ontology of natural language may in part be driven by language itself, by the semantics of particular constructions that make certain types of derivative objects as semantic values available.

In addition to variable objects and the quasi-kinds that act as semantic values of certain definite NPs and of bare nominals in English, the ontology of natural language may be language-driven in other respects. The mass-count distinction is a case in point. The mass-count distinction at first appears to reflect an ontological distinction. But as an ontological distinction, it would be a highly language-dependent distinction. *The rice, the rice grains, and heap of rice* are likely to stand for the very same thing not just for the philosopher, but for a non-philosopher as well. However, the semantic values of the three terms bear different properties and need to be treated as distinct. The rice grains can be counted or be indistinguishable, but not the rice. The heap of rice may be small, but not the rice (and neither may the rice grains in the same sense).

Another example of a language-driven part of the ontology of natural language are discourse referents, semantic values of unbound anaphoric pronouns (or donkey pronouns), on a quasi-ontological conception. Discourse referents are presented as objects individuated

by the flow of discourse in Karttunen (1976), Landman (1986), and Edberg (1986) (though they do not have an ontological status as objects in most developments of dynamic semantics).

Yet another example are non-worldly facts described by noun phrases of the form *the fact that it is raining or it is snowing* – their canonical fact descriptions (Moltmann 2013b). Non-worldly facts are entities whose nature is fully displayed by the descriptive content of their canonical description.

The entities driven by constructions of the language or the discourse are not likely entities speakers implicitly accept as such, but rather only when using the language. More precisely, they are part of an ontology a speaker accepts when using the core of language, and engages in an ordinary use of language. This motivates the weaker characterization of the ontology of natural language below:

(23) The ontology of a natural language is the ontology a speaker implicitly accepts when using (in the ordinary way) the core of the language.

‘Ontology’ in (23) should not be understood as just consisting of a particular inventory of objects, but also includes methods or operations for introducing objects along with certain constructions. This would account for the creativeness of the ontology implicit in natural language, in particular, of its language-driven or construction-driven part. Acceptance of an ontological operation for generating objects then means potential acceptance of the objects that can be generated by that operation.

The characterization of the ontology of natural language in (23) makes reference to the ordinary use of the core of language. The notion of an ordinary use of language is not new; it had played already a central role in ordinary language philosophy with its focus on non-philosophical, non-technical uses of philosophically relevant expressions.

6. Intentional (‘nonexistent’) objects and the ontology of natural language

The objects that a speaker implicitly accepts when using natural language need not be real objects, but may also include merely conceived objects, objects the speaker mistakenly takes there to be. The relation of acceptance is an intentional relation, not requiring the existence of its object arguments. In fact, the domain of objects reflected in the core of language as well as its possible extensions cannot be characterized as a domain of ‘real’ objects or objects

grounded in reality in some way, but may include intentional (nonexistent) objects. The notion of a real object and the difference between a real and an intentional object should in fact not play a role at all for the ontology of natural language. Natural language does not semantically differentiate between terms standing for actual objects and terms standing for merely conceived ones, as long as the entities they purport to stand for are accepted as such by the language user.

Not only the object-related notion of acceptance is an intentional notion, but also reference. Along with verbs like *accept*, *describe*, and *mention*, the object language predicate *refer to* is an intentional verb, in the sense of a verb that permits as arguments objects the speaker herself allows to be intentional (nonexistent) objects (Moltmann 2016).¹⁷ Making use of that notion of reference, as a notion that is part of the philosophy of language implicit in natural language, permits the semantic values of referential noun phrases to include intentional objects.

Note that intentional objects need to be distinguished from concepts or conceptions of objects. The latter are representations, the former are things meant to be represented. Intentional objects share properties with real objects. By contrast, representations have representation-specific properties, not the properties of what they represent.

Objects of reference that turn out to be nonexistent need to be distinguished from objects the speaker takes to be merely intentional. Natural language does allow referential noun phrases to stand for merely intentional objects which the speaker herself takes to be nonexistent. That is, natural language reflects a Meinongian view of there being objects that fail to exist (Parsons 1980, Salmon 1987, 1998, Fine 1982a, Priest 2005, Moltmann 2013a, 2016). To show this requires of course the right sorts of data. These could not be statements of this sort, an assertion of the Meinongian view:

(24) There are things that do not exist.

Support for Meinongianism being reflected in language cannot take the form of assertions of the Meinongian view itself, but must take the form of presuppositions or quantification over particular sorts of intentional objects, and that in the form of statements from the core, not the periphery of language. The following sentences satisfy those requirements:

¹⁷ Their compositional semantics crucially involves the intentional verbs taking scope over the head noun (*book*, *building*, *house*) at the relevant linguistic structure, see the analysis in Moltmann (2006).

- (25) a. The building described in the book does not exist.
 b. A building described in the book does not exist.
- (26) a. John thought about the building described in the book.
 b. John thought about a house he wants to build.
- (27) a. The person Bill referred to with Annie does not exist.
 b. At least one person John referred to in his speech does not exist.

Complex definites with intentional verbs such as *describe*, *think about* and *refer to* in (25a), (26a) and (27a) respectively presuppose intentional objects as semantic values resulting from their compositional semantics (Moltmann 2016).¹⁸ Indefinite or quantified noun phrases as in (25b), (26b), and (27b) quantify over particular intentional objects, again required by the compositional semantics of those noun phrases. The noun phrases in (25, 26, 27) certainly are part of the core of language.

Reference to what the speaker herself takes to be merely intentional objects does not come for free, but requires particular lexical and syntactic conditions. While most predicates are existence-entailing, requiring as arguments entities that the speaker takes to be actual objects, there are certain predicates, especially predicates of existence and intentional predicates (*describe*, *think about*, *mention*, *refer to*, *imagine*), which permit as arguments entities the speaker takes to be intentional (nonexistent) objects (Moltmann 2016). Entities the speaker considers merely conceived objects would be part of the creative ontology of natural language on a view on which merely conceived objects are constituted by relations of coordination among acts of pretended or unsuccessful reference, reference acts that play a role explicitly or implicitly in the linguistic context (McGinn 2000 Moltmann 2016). This would also account for the fact that in the semantics of natural language intentional objects can act only as semantic values of noun phrases, not just as implicit arguments or as parameters of evaluation.

A distinction thus needs to be made between the semantic values of noun phrases that speakers take to be objects and those that speakers allow to be merely intentional objects. The ontology of natural language is an ontology of real, derivative, mind-dependent, and intentional objects, including objects a speaker herself considers intentional objects. Intentional objects are of course entities that many philosophers are unwilling to accept

¹⁸ Here ‘intentional verb’ is meant to contrast with ‘extensional verb’ as well as ‘intensional verb’, see Moltmann (2016).

(Inwagen 2001). However, they are clearly reflected in natural language and are indispensable for the compositional semantics of terms as in (25) and (26).

Besides being semantic values of referential terms, entities may play other roles in the semantic structure of sentences, for example as implicit arguments of predicates and as parameters of evaluation (times on the standard semantics of tense and possible worlds on the standard semantics of modals and conditionals). What sorts of semantic roles entities play in the semantic structure of sentences depends to an extent on particular semantic theories about relevant constructions or expressions, and it depends very much on the way the contribution of occurrences of expressions to the composition of the meaning of the sentence is conceived.

7. Conclusion

Natural language reflects its own ontology, an ontology that may diverge in different ways from the reflective ontology of philosophers and non-philosophers. There are number of distinctive features which set the ontology of natural language apart from the reflective ontology (or ontologies) of speakers. In particular, the ontology of natural language is a rich, in part construction-driven ontology, which includes various sorts of derivative objects, as well as merely intentional objects and objects recognized as merely intentional by the speaker.

The ontology of natural language, the ontology of appearances reflected in language, is a cognitive ontology and should play an equally important role within the human cognitive faculty as other parts of language (syntax and phonology). The same expectations may then be set in regard to the ontology of natural language as for syntax: that a deeper analysis of a particular language or different languages with respect to the ontology they reflect should reveal highly systematic and universal features, shared ontological categories, operations, or notions.¹⁹

Not only metaphysics involves a distinction between what is implicit in natural language and what is explicitly present in philosophical or naive reflection. The same distinction applies to other branches of philosophy, such as philosophy of mind, philosophy of language, and epistemology. Thus, there is a philosophy of language to an extent reflected in language itself, as we have seen with the verb *refer*. For the philosophy of mind, what is implicit in language is particularly important, since its subject matter is, at least in part, the folk

¹⁹ Chomsky (2013) hints at such a perspective, though, of course, for the level of lexical-conceptual structure.

psychology of propositional attitudes and other notions, on which the syntax and semantics of verbs of propositional attitudes, perception, and emotion bear a lot.

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