Properties and Kinds of Tropes: New Linguistic Facts and Old Philosophical Insights

Friederike Moltmann

Terms like 'wisdom' are commonly held to refer to abstract objects that are properties. On the basis of a greater range of linguistic data and with the support of some ancient and medieval philosophical views, I argue that such terms do not stand for objects, but rather for kinds of tropes, entities that do not have the status of objects, but only play a role as semantic values of terms and as arguments of predicates. Such 'non-objects' crucially differ from objects in that they are not potential bearers of properties.

1. Introduction

The idea that properties should be conceived as genuine objects in their own right has been a controversial doctrine throughout the history of philosophy. But it has been much less controversial to assume that natural languages provide us with an easy way for referring to properties, or at least seemingly so to refer. Any property expressed by a predicate can, it appears, in principle act as the referent of a corresponding nominalization. Thus, *wise*, expressing the property of being wise, allows for the nominalization *wisdom*, which seems to act as a term referring to that same property, allowing for second-order predicates to apply (as in *wisdom is rare*). In the context of natural language, therefore, properties apparently can act not only as possible meanings of predicates, but also as genuine objects, namely when they are referred to by a nominalization of a predicate.

In this paper, I will question this generally accepted view, that is, that terms like *wisdom* stand for objects that are properties and argue that nominalizations exhibit a rather different kind of ontology than the ontology of abstract objects generally attributed to them. Rather than standing for a 'property object', *wisdom*, I will argue, stands for what I will call a *kind of trope*. By this I mean a universal whose instances are

concrete property manifestations, but which does not have the status of an object.

By not standing for an abstract property object, *wisdom* differs from the rather technical term *the property of wisdom*, which, of course, does stand for such an object. *Wisdom* does act as a singular term, however, given standard criteria. This then challenges the Fregean view that singular terms always stand for objects, and thus I think, *wisdom* should have an object as its referent. On my account, *wisdom* does indeed stand for an entity, an entity which will act as an argument of predicates and may act as a value of variables. But more conditions need to be fulfilled for such an entity to count as an object. Against the Fregean tradition, I propose the view that the semantic predicate–argument structure that natural language sentences display does not as such reflect ontological commitment. A closer investigation of the ontology of natural language involved in certain nominalizations in particular shows fewer ontological commitments than usually thought.

The crucial difference between abstract objects that are properties and kinds of tropes manifests itself foremost in the way predicates are understood when they are predicated of the two kinds of universals. Whereas predicates are attributed in the familiar way to abstract property objects, they are understood rather differently when ascribed to kinds of tropes: they are attributed to kinds of tropes only in virtue of being predicated of instances of the kind, that is, in a derivative way. The underlying reason, I will argue, is that kinds of tropes are not bearers of properties at all, but rather must inherit their properties, in one way or another, from their instances. More generally, whereas singular terms always stand for entities, entities which can act as arguments of variables, such entities do not necessarily count as objects. They count as objects only when they also have the status of property bearers. Only entities that may bear properties have the status of objects; entities which cannot bear properties but still act as semantic values of singular terms count as non-objects.

Though the main argument for the distinction between objects and non-objects in general and properties and kinds in particular comes from the way various classes of predicates are understood, the distinction is also reflected in the choice between two sorts of quantifiers, one used for beings in general, including non-objects, another for ordinary objects alone.

The distinction between abstract property objects (such as the property of wisdom) and kinds of tropes (such as wisdom) is part of a more

general distinction between universals that act as objects (property-bearers) and universals that do not act as objects. Universals that do not act as objects (kinds in my terminology) include kinds of tropes, kinds of objects ('houses'), and kinds of quantities ('water').

The account on which terms like *wisdom* do not stand for abstract objects, but rather just provide a way of predicating properties of instances (tropes), can claim some significant historical precedents in ancient and medieval philosophy. First, the distinction between the two kinds of universals as abstract property objects and as kinds comes close to the distinction between Platonic universals and Aristotelian universals—considered as a distinction between two sorts of beings rather than two sorts of conceptions of universals. Platonic universals would be property objects, Aristotelian universals kinds, universals whose properties are inherited from their instances. Moreover, the ontology of particulars on the one hand, and kinds on the other (entities which can only inherit their properties from their instances) exhibits interesting parallels to the ontology of Aristotle's 'Categories', where (primary) substances and tropes are distinguished as the two categories of particulars, and sortal properties (secondary substances) and qualities ('secondary tropes', as one might call them) as the two categories of universals. Second, in medieval philosophy a strikingly similar treatment of nominalizations like *wisdom* can be found in Ockham's nominalist analysis of abstract terms.

That nominalizations like *wisdom* refer to kinds is no isolated accident, but, as I will argue, constitutes a special case of kind reference with what linguists call 'bare' (that is, determinerless) mass nouns and plurals in general. In linguistic semantics, the bare mass noun *gold* is, at least in some of its occurrences, considered a term referring to a kind whose instances are particular gold quantities, and the bare plural *tigers* a term referring, at least in some of its occurrences, to a kind whose instances are individual tigers. What seemed to be reference to properties with terms like *wisdom* thus is better seen as falling under the very general phenomenon of reference to kinds of particulars with bare plurals and mass nouns. In linguistic semantics, there is an ongoing debate whether all or only some occurrences of bare mass nouns and plurals are kind-referring, a debate onto which my analysis of bare nominalizations like *wisdom* as well as the distinction between objects and non-objects will shed a significant light.

The paper will first set out the relevant linguistic generalizations about expressions like *wisdom* and *the property of wisdom*. This together with a brief exposition of ancient and medieval views will provide the

motivation for an ontological account of the two kinds of universals and a semantic account of the two kinds of terms referring to them.

2. The standard view about reference to properties

Hardly any metaphysical discussion of the status of properties can avoid the observation that predicative expressions can be nominalized, that is, turned into singular terms that *seem* to refer to the properties that were the meanings of the predicative expressions. Thus, when the adjective *wise* is nominalized, the resulting nominalization *wisdom* acts, it appears, as a singular term referring to the property that the adjective *wise* expresses. In examples such as (1a), (2a), (3a), and (4a), the nominalizations *wisdom*, *honesty*, and *humility* are in fact interchangeable with the terms *the property of wisdom*, *the property of being honest*, and *the property of humility*:[1]

(1) a. John has wisdom.

  b. John has the property of wisdom.

(2) a. Wisdom is a property only few people have.

  b. The property of wisdom is a property only few people have.

(3) a. Honesty is my favourite attribute.

  b. The property of being honest is my favourite attribute.

(4) a. Humility is a virtue.

  b. The property of humility is a virtue.

Definite descriptions such as *the property of wisdom*, quite uncontroversially, are singular terms, referring to properties, and looking at (1)–(4), such *explicit property-referring terms* seem to refer to the same entities as *bare adjective nominalizations* such as *wisdom*, that is, occurrences of nominalizations of adjectives without a determiner such as *the* or *a* (or a possessive phrase like *John's* as in *John's wisdom*). In (1a)–(4a), bare occurrences of adjective nominalizations thus act, it seems, like familiar singular terms referring to properties.

---

[1] In what follows I will restrict myself to adjective nominalizations. Adjective nominalizations in English, at least, involve one and the same kind of semantics: the adjectives from which they are derived express qualities and the nominalizations, on the view I will defend, stand for kinds of tropes. What is said about adjective nominalizations is not necessarily to be carried over to other nominalizations such as *mankind*, *animality*, *sisterhood*, and *citizenship*.

However, while expressions like *the property of wisdom* belong to a rather technical, even dispensable part of English, nominalizations like *wisdom* clearly constitute a core part of everyday speech. The possibility of nominalizing predicative expressions, and thus turning them into singular terms, has been taken by some as particularly clear linguistic evidence for the view that, at least in the context of natural language semantics, properties act as objects in addition to particulars.

Faced with sentences such as (1a), (2a), (3a), and (4a), philosophers who deny the existence of universals as objects in their own right seem to have two choices:

(1)   to reject those sentences, let's say as inadequate philosophically or not useful for a philosophically rigorous part of language; or

(2)   to re-analyse them, translating them into sentences that do not involve reference to properties, but only to either individuals or linguistic expressions. A translation making reference to individuals is easy for (1a), which is equivalent to *John is wise* and it would translate (2a) as 'few people are wise', but it clearly fails for (3a) and (4a). A translation making reference to linguistic expressions has its own problems, as discussed in the literature, having to make use of types of particulars, namely utterances or inscriptions, which themselves are universals.[2]

Either way, philosophers who take the second strategy reject a systematic relation between natural language and ontology. Such a rejection is at best premature, however, in that, as we will see, the possibility of nominalizing predicates does not even show that properties act as objects. Whether a reductionist translation of sentences involving predicate nominalizations is possible or not should therefore not concern us further. Rather what should concern us is whether sentences like (1a)–(4a) are indeed to be taken as evidence for properties acting as objects.

I will argue that even though bare nominalizations like *wisdom* behave like singular terms and stand for entities of a sort, they do not refer to objects that are properties—on the usual understanding of 'object' and 'property'. This of course means that a singular term does not provide a sufficient indication of objecthood; that is, what a singular term stands for does not need to have the status of an object. For the referent of a singular term to act as an object, rather, the predicates that can occur with that term have to behave in a certain way too: roughly

---

[2] See Loux (1998) for a fuller discussion. For philosophical discussions of sentences with apparent property-referring terms see also Jackson (1977) and the debate between Devitt (1980) and Armstrong (1980), all reprinted in Mellor and Oliver (eds) (1997).

they need to be understood in the usual way, rather than in a special way. It is in this respect that bare nominalizations and explicit property-referring terms differ. It appears that the predicates in the examples (1)–(4), with which bare nominalizations and explicit property-referring terms are interchangeable, are in fact exceptional. Most kinds of predicates do not allow substitution of a bare nominalization by an explicit property-referring term without change in the reading of the predicate or even acceptability of the sentence as a whole.[3]

Bare nominalizations like *wisdom* do stand for entities that should be considered universals. But generally, predicates do not apply to those entities in the ordinary way. Generally predicates cannot be predicated of universals like *wisdom* themselves, but only of the instances of such universals. Thus, whereas bare nominalizations act as singular terms by standard criteria, predicates are not understood with the entities bare nominalizations denote in the way they are understood with ordinary objects. It is for this reason that I will call the entities that bare nominalizations stand for *non-objects*. By contrast, explicit property-referring terms stand for properties that are objects, or *property objects.*

Of course one also needs to explain why bare nominalizations and explicit property-referring terms are interchangeable with the particular predicates in (1)–(4), which I will do in due course. First, however, I will focus on the predicates with which bare nominalizations and explicit property-referring nouns are not freely interchangeable. Four classes of such predicates can be distinguished: evaluative predicates, episodic predicates, intensional predicates, and what I call instance-distribution predicates. The discussion of the first and second class of predicates (evaluative and episodic predicates) should give a general idea of how nominalizations and explicit property-referring terms differ in linguistic behaviour and provide the basis of a general outline of the account that I will give later.

---

[3] Type-theoretic approaches generally assume that the nominalization of adjectives goes along with type-lowering from the type of predicative adjectives $<e, t>$ to the type of nouns e (cf. Chierchia (1984), Chierchia and Turner (1988)). Type-lowering, however, is a purely formal process. It could hardly have any bearing on the nature of the properties the resulting object of type e has, as opposed to its correlate of type $<e, t>$.

3. Predicates with bare nominalizations and with explicit property-referring terms

3.1. Evaluative predicates

Evaluative predicates like *nice*, *interesting*, or *boring* are understood rather differently when they occur with bare nominalizations from when they occur with explicit property-referring terms. Compare the following a-examples with a bare nominalization with the corresponding b-examples with an explicit property-referring term:

(5) a. Friendliness is nice.

     b. The property of being friendly is nice.

(6) a. Ordinariness is boring.

     b. The property of being ordinary is boring.

(7) a. Originality is interesting.

     b. The property of being original is interesting.

(5a) can be true without (5b) being true, and vice versa, and so for (6a) and (6b), as well as (7a) and (7b).

What the three pairs of sentences differ in is the kinds of objects the predicates evaluate. In the a-examples, the predicates evaluate concrete particulars. For example, (5a) roughly means something like friendly behaviour, friendly gestures, or perhaps friendly remarks are nice. That is, *nice* in (5a) evaluates concrete manifestations of friendliness. By contrast, (5b) means that an abstract object is nice, namely the object that is the property of being friendly. The reason why such an object can be nice may be, for example, because of its formal structure (perhaps it is a property composed of other properties in slightly elegant ways), its formal relations to other abstract objects, such as other properties or propositions (for example, being friendly entails having certain other properties), or because of the way the instances of such an abstract object are to be identified.

Similarly, whereas *boring* in (6a) evaluates concrete particulars for example ordinary things, behaviour, or people, in (6b) it evaluates an abstract object, that is, the property of being ordinary. Such an object, again, may be boring because it has no interesting structural properties or is boring to investigate or deal with.

Finally, *original* in (7a) evaluates things like original proposals, ideas, people (*qua* their originality), whereas in (7b), it evaluates a property—that is, an abstract object.

It is important to note that the reading of the predicates in the a-examples cannot be obtained in the b-examples, and vice versa.

We can summarize these results as follows: while for an explicit property-referring term the evaluation concerns a property (an abstract object), in the case of a bare nominalization it concerns concrete manifestations of that property.

The truth conditions of sentences like (5a, 6a, 7a) clearly involve generic quantification over instances rather than an accidental generalization. That is, (6a) is roughly equivalent to: 'normally, for any given entity *d*, if *d* is ordinary, then the ordinariness of *d* is boring'.[4]

In that sense then, whatever it is that makes the sentences in (5a, 6a, 7a) true does not involve an abstract object, but only particulars.

3.2. Episodic predicates

Episodic predicates are predicates describing particular occurrences of events, activities, or acts. Generally, these are predicates that express properties naturally holding of an individual only at a particular time. Episodic predicates show an even more radical difference between nominalizations and explicit property-referring terms. Thus (8a) and (8b) are understood quite differently, as are (9a) and (9b):

(8)   a.   I have experienced generosity.

     b.   I have experienced the property of being generous.

(9)   a.   I often encounter hostility.

     b.   I often encounter the property of being hostile.

---

[4] Not all evaluative sentences with bare adjective nominalizations can be considered sentences quantifying generically over tropes:

    (1) a. John prefers beauty to intelligence.

       b. John compared sadness to happiness.

Clearly (1a) does not say that John prefers any particular person's beauty to that person's (or some other person's) intelligence. Rather (1a) is about comparing John's overall evaluation of instances of beauty to his overall evaluation to instances of intelligence, or perhaps about possible or counterfactual situations of some sort in which John, confronted with an instance or beauty and an instance of intelligence will prefer the instance of beauty. Thus, the sentence cannot be taken to involve implicit quantification over tropes acting as arguments of the predicate, but rather involves an overall evaluation of tropes that act as argument of the predicate, or a comparison of two tropes in suitable possible situations. Similarly for (1b).

Sentences with bare nominalizations such as (8a) and (9a) display a reading involving existential quantification over instances of generosity or hostility (for example generous acts or hostile attitudes). By contrast, (8b) and (9b) could be true only in a metaphysical fantasy, where abstract objects act as relata of perceptual relations. Again, the readings displayed by (8a) and (9a) cannot be displayed by (8b) and (9b) respectively, and vice versa.

The truth conditions of sentences like (8a) and (9a) are clear: they involve existential quantification over entities of the sort 'the generosity of *d*' or the hostility of *d*', for some entity *d*. In other words, (8a) is equivalent to: 'For some entity *d*, I have experienced the generosity of d', and (9a) to: 'often, for some entity *d*, I have experienced the hostility of *d*'. Thus, a situation making a sentence such as (8a) or (9a) true does not involve an abstract object, but only particulars.

We have so far seen then that a sentence containing an evaluative or episodic predicate and a bare nominalizations has the same truth conditions as a sentence with a generic or existential quantifier ranging over particulars, (concrete manifestations of a property). Let us next address the question what exactly those concrete manifestations of a property are that are involved in the truth conditions of the sentences in question.

3.3. Tropes and kinds of tropes

It is quite obvious that the concrete property manifestations that evaluative and episodic predicates target with a bare nominalization like *wisdom* are not individuals, that is, the objects of which the predicate from which the nominalization is derived (that is, *wise*) would be true (wise people etc.). For example, (6a) is not equivalent to 'ordinary people, objects, and events are boring'. This is because many ordinary people, objects, or events may not be boring in some respect or another (for example not boring to manipulate, to play with, or to disrupt). Rather, (6a) can only mean that ordinary people, objects, or events *qua being ordinary* are boring. Or better, what (6a) says is that the ordinariness of people, objects, or events, that is, whatever it is in virtue of which they are ordinary, is boring.[5]

The same point can be made for episodic predicates. (8a) would not make much sense if it were to mean that the speaker has experienced, let's say, a person or gift that happens to be generous. One cannot experience people or gifts in the first place. (8a) rather means that the

---

[5] For reducing (6a) to statements about people or objects '*ceteris paribus*' clauses are necessary: 'Other things being equal ordinary objects are boring'. See Loux (1998) for a critical discussion.

speaker has experienced the generosity of a person or a gift. (9a) does not mean that the speaker often encounters something, let's say a person or an animal, that happens to be hostile (at some point toward someone). Rather it means that he or she often encounters the hostility of someone or something.

The instances that are evaluated in sentences like (6a)–(9a), thus, are not individuals *d*, but rather things of the sort 'the ordinariness of *d*', 'the generosity of *d*', or 'the hostility of *d*'. But what exactly are those entities? Semantically, of course, they are the things one refers to with the nominalization together with a definite determiner, that is, with *the ordinariness of a* or *a's ordinariness*, rather than simply *ordinariness*, that is, by means of the same nominalizations, but now not as a singular term referring to a universal, but as a two-place relation that holds between concrete instances and objects. Ontologically, the entities in question are manifestations of the property expressed by the predicate from which the nominalization is derived, that is, they are particularized properties—or to employ the now most commonly used term, they are *tropes*.[6,7]

Particularized properties or tropes have regained importance in recent metaphysical discussion, after playing major roles in ancient, medieval, and even early modern philosophy.[8] In ancient and medieval times, tropes were considered a separate ontological category besides individuals and universals and were often taken to be the instances of qualitative (or adjectival) universals, whereas individuals were taken to be the instances of sortal or substantival universals (a view more recently defended again by Lowe 1998). At one time or another, tropes have also been considered truth makers for simple subject-predicate sentences like '*a* is *F*', as the kind of entity that underlies similarity, as objects of perception, and as relata of causal relations. In contemporary metaphysical discussions, tropes have regained importance within views, according to which, they are entities more fundamental than properties and individuals. Tropes on those views serve to reconstruct properties (as sets of exactly resembling tropes) and individuals (as bundles of 'compresent' tropes). Two

---

[6] See, in particular, Stout (1952), Williams (1953), Campbell (1990), and Simons (1998), as well as the discussions of trope theories in Lewis (1986, Section 1.5.) and Armstrong (1992), (1997).

[7] Some philosophers and especially semanticists would perhaps prefer to take the entities in question to be events. But events themselves can be conceived as tropes of a more complex kind, namely tropes based on a dynamic property (such as 'being *P* at *t* and being *P'* at *t'*', for contrary properties *P* and *P'* and subsequent times *t* and *t'*). Conversely, tropes may be considered marginal cases of events, events based on a static property.

[8] See Simons (1998) and Loux (1998) for overviews.

entities share a property, on those views, if two exactly resembling tropes are 'present in' them.

Tropes understood as truth makers, as what underlies similarity, as the objects of perception, and as the relata of causal relations are not, however, instantiations of just any property. Rather they are instantiations only of what Lewis calls *natural properties*. This is because tropes so understood need to be concrete entities in the world, rather than constructs from properties. Natural properties are those properties that are causally efficacious, provide a basis for resemblance, and more generally are needed for an exhaustive, non-redundant description of the world (Armstrong 1978, 1996, Lewis 1983). Non-natural properties are all the other properties that may be expressed by predicates of natural language, including determinable, negative, and disjunctive properties (Armstrong 1978).

The restriction to natural properties narrows down considerably the range of property instantiations that are tropes. As Lewis (1983) observes, however, predicates expressing non-natural properties can also be nominalized. For example, *redness* and *goodness* are nominalizations of adjectives expressing determinable properties, and *ignorance* and *absence* are derived from adjectives expressing negative properties.[9]

Do nominalizations of adjectives expressing non-natural properties then refer to entities of an entirely different kind, entities that are not concrete particulars? There is evidence that they still refer to particulars, though of a more complex sort than tropes (in the sense of instantiations of natural properties). The evidence consists in the contrast in semantic behaviour between those nominalizations and expressions that obviously do refer to things that are constructs from non-natural properties, namely entities that are the mere holding of a property of an object. The latter are nominalizations of the sort *John's being wise* or *Mary's being beautiful*. The following examples make the contrast clear:

(10) a. John's wisdom exceeds Mary's wisdom.

b. ?? John's being wise exceeds Mary's being wise.

(11) a. John admires Mary's beauty.

b. ?? John admires Mary's being beautiful.

---

[9] Such predicates are also called 'stage-level' because they, in a sense, apply to only a temporal stage of the individual (cf. Carlson 1977a, b). See also Section 7.

Why can John's wisdom exceed Mary's wisdom, but not John's being wise Mary's being wise? The reason, it appears, is that *John's wisdom* stands for the particular way in which wisdom manifests itself in John's thoughts, behaviour and so on. John's being wise cannot be said to exceed Mary's being wise, because the mere holding of a non-natural property (being wise) of John cannot reasonably be compared to the mere holding of that same property of Mary. Similarly, John can admire Mary's beauty, but not Mary's being beautiful, because *Mary's beauty* refers to the various features of Mary in virtue of which she is beautiful, whereas *Mary's being beautiful* refers to the simple state characterized by the property of being beautiful holding of Mary.

Without going into much detail, we can conclude that a nominalization of a predicate expressing a non-natural property refers, roughly, to a concrete entity made up of a collection of tropes (instances of natural properties) that together instantiate the non-natural property in question. The precise nature of such complex manifestations of non-natural properties should not concern us further. What is important in the present context, in fact, is not so much the nature of the particulars that instantiate the universals that bare nominalizations stand for, but rather the nature of those universals, namely the fact that they are not objects, but rather kinds, kinds of one sort of particular or another. Let us henceforth simply include the more complex entities just discussed among the tropes.

The data I have mentioned support a particularist ontology, in which only particulars, not abstract objects, play a role. Clearly the situations making the sentences discussed above true do not have to involve abstract objects, but only particulars. This can mean either of two things:

(1) bare nominalizations just quantify over or in some way stand for particulars

(2) bare nominalizations themselves stand for universals, which, however, do not act as bearers of properties, but only provide their instances as property-bearers.

Within either of these two approaches, antiplatonist and antirealist considerations have independently let a number of philosophers to analyse the relevant sentences discussed in this section as being only about particulars. Two particularly interesting cases are Aristotle and Ockham, both of whom make central use of the notion of a trope.

4. Some historical views

4.1. Aristotle's Categories

If the first view concerning the semantics of bare nominalizations is adopted, then a bare nominalization would stand for a universal which is such that if a predicate expressing a permanent property is predicated of it, the property needs to hold of all (or generally all) instances for the sentence to be true, whereas when an episodic predicate is predicated of it, the property needs to hold just of one instance. By contrast, any property expressed by a predicate will have to hold of the universal itself that an explicit property-referring term stands for.

The distinction between the universals that explicit property-referring terms stand for and those that bare plurals stand for recalls the distinction between Aristotelian and Platonic universals. It is just that whereas the traditional distinction between Platonic and Aristotelian universals is a distinction between two competing conceptions of universals, natural language allows for reference to both kinds of universals and thus the two kinds of universals exist side by side in the context of the ontology of natural language. Aristotelian universals would be the universals that bare nominalizations stand for, whereas platonic universals would be the universals that explicit property-referring terms refer to. While Aristotelian universals seem to play a primary role in the context of natural language semantics, Platonic universals appear to be secondary, being reifications of Aristotelian universals.

The two kinds of universals, one can say, differ just in the way properties are attributed to them. Aristotelian universals are, at least on a common view, held to be inherent in their instances, in the sense that they exist just in case an instance exists, and they are located just where their instances are located. By contrast, Platonic universals are transcendent. Their existence is independent of the existence of instances and they are abstract in that they are not located in space and time. This would correspond to the fact that existence claims with bare nominalizations are true just in case an instance of the universal exists that the bare nominalization stands for, whereas with explicit property-referring terms, existence claims are true just in case the corresponding abstract object (the property) exists. Moreover, the first kind of universal will be ascribed a location just in case an instance is ascribed that location (so that as a result, the universal can be multiply located, located in as many locations as it has instances at those locations). The properties that explicit property-referring terms stand for, by con-

trast, are not located at all. This contrast manifests itself in the contrast between difference between (12a), which may be perfectly true, and (12b), which seems absurd:

(12) a.   Wisdom is everywhere.

b.   The property of being wise is everywhere.

Even beyond the distinction between Aristotelian and Platonic universals, the present account shares a number of interesting features with the ontology of Aristotle's *Categories.* Aristotle distinguishes four kinds of ontological categories: (primary) substances and accidents as the two categories of particulars, and secondary substances and qualities as the two categories of universals. Some entities, Aristotle says, are predicable, namely secondary substances and qualities (which are both predicable of primary substances); some entities are 'present in' others, namely accidents and qualities. Accordingly, not only accidents are taken to be present in individuals, but also qualities. This, in my terms, corresponds to the fact that the episodic predicate 'is present in a particular individual *d*' can be said true of a kind of trope in virtue of being predicated of a particular trope.[10,11]

Another interesting feature of the Aristotelian view is that substances and tropes are ontologically prior to secondary substances and qualities, respectively. For Aristotle, there are two respects in which such priority obtains. First, primary substances are prior to universals since universals could not exist without the substances of which they are predicated (*Categories*, 2b, 4–6). In that sense, substances are also prior to accidents, because the accidents could not exist without the substances in which the accidents are present. Second, primary substances are prior to secondary substances because secondary substances inherit their properties from primary substances: a property such as being a man or being white can be predicated of a secondary substance such as 'man' only because those properties are true of the primary substances that instantiate the secondary substance—that is, true of individual men (*Categories*, 3b, 4–5). Moreover, at least on a standard reading of

[10] Aristotle's example actually is knowledge: knowledge can be present in a particular mind just as a particular piece of knowledge can. A piece of knowledge is not obviously a trope; rather it may best be viewed as an attitudinal object, cf. section 10.3. But it appears that Aristotle meant that all universals of the sort of qualities can be 'present in' primary substances.

[11] Aristotle does not quite say that accidents are the instances of qualities. Instead he says that qualities have a 'definition' that is not applicable to what they are predicable of (primary substances). Thus, *white* may be predicable of Socrates, but its definition is not applicable to Socrates. The definition, instead, it seems, must be applicable to tropes.

the *Categories*, a universal exists only if an instance of it exists and it is located just where its instances are located. This means that not only normal and necessary properties of instances are projected onto kinds from their instances, but also existence and location. One can then say that for Aristotle, the properties of secondary substances are fixed on the basis of properties of their instances (though Aristotle considers only fixing of properties based on universal quantification and perhaps existential quantification (properties of location)).

Secondary substances, moreover, Aristotle says, are not one or single (despite what our language may suggest), but are a 'multitude with a certain qualification', predicable of various primary substances (*Categories*, 3b, 12–18). In a way, then, also Aristotle seems to take secondary substances to be non-objects.

Later we will see that entirely parallel data to the ones with bare nominalizations can be observed for terms that stand for universals whose instances are individuals (namely bare nouns like *tigers*). Thus, we would have both Aristotelian secondary substances and what one might call 'secondary tropes' nicely displayed within natural language ontology.

There are then two respects in which data of natural language with bare nominalizations and other terms reflect the Aristotelian ontology of the categories: first, with respect to the division of things into four ontological categories of primary substances (individuals), accidents (tropes), secondary substances, and qualities; second, with respect to the way secondary substances are conceived.

Aristotle is not explicit about a parallel between qualities and substances: he does not explicitly say that tropes are instances of qualities or that qualities inherit properties from the tropes that instantiate them. This parallel, though, is made explicit by a later medieval Aristotelian philosopher: William Ockham.

4.2. Ockham's nominalism

Ockham, one would say, adopts the second view about the semantics of bare nominalizations, namely on which bare nominalizations do not, at least not primarily, stand for universals. In Ockham, we can find the view that the semantics of (some) nominalizations involves only tropes rather than abstract objects. Ockham was a nominalist who denied the existence of universals as objects, even if inherent in individuals. Ockham more precisely subscribed to conceptual nominalism and maintained that sentences that make apparent reference to universals are only about particulars—namely substances or tropes (in the category of

quality)—or else about concepts. Without going much into the details of Ockham's medieval semantics, these are the points that are important.

Ockham first of all distinguished among different nominalizations which were commonly held to be terms for universals (Ockham (1675), in the translation of Loux (1974), pp. 56–59). First, there are universals such as *humanity*. *Humanity*, on Ockham's view, denotes the same things as the 'bare noun' *man* (acting as a universal quantifier, like the bare plural *men*), which stands for the various individual men (which means, roughly, it acts as a universal quantifier ranging over men). But unlike *man*, *humanity* incorporates a syncategorematic, namely a modal, element in that *humanity* means 'men necessarily' or 'men as men'.[12] Second, there are nominalizations expressing perceivable qualities such as *whiteness* and those expressing dispositions such as *justice*. Abstract nouns, like this, according to Ockham, stand for the various tropes of the relevant sort, that is, concrete manifestations of whiteness or justice—just as underived nouns like *man* stand for the various particular substances. This roughly means that abstract nouns like *whiteness* or *justice* act like universal quantifiers ranging over particular tropes. The semantics of nominalizations of this sort should be parallel to that of underived nouns like *man* (though Ockham is not quite explicit about that).[13] Third, there are nominalizations expressing shape or form, such as *roundness*, which for Ockham stand for the various particular substances that are (in the case of roundness) round. Again, as such their semantics is parallel to that of underived nouns like *man*.

Ockham is aware that sentences involving nominalizations cannot always be treated as being just about particular tropes or substances: they may fail to do so in the presence of predicates like *species, colour, shape*, or *quality*. It is for this reason that Ockham distinguishes among two uses of nouns, or two kinds of *supposition*. The first one, *personal supposition*, occurs both with singular reference as in 'that animal is white' or 'this whiteness inheres in that animal' and with quantificational noun phrases such as *every whiteness*, which obtains 'when the term stands for what it signifies and is used in its significative function'

---

[12] For that reason, Ockham says, 'humanity runs' is impossible, whereas 'man runs' is true. It is not so clear that English nominalizations work quite the way the Latin ones do, if Ockham is right. But whether the analysis Ockham proposes is correct or can be carried over to English is not so much the point as the nature of the analysis, namely the fact that Ockham allows a single expression to combine categorematic and syncategorematic elements.

[13] For example in Ockham (Ockham 1675, in the translation of Loux 1974, p. 55), he says that *whiteness* signifies all particular whitenesses and effectively, that *every whiteness* quantifies over all particular whitenesses.

(Ockham 1675, translated in Loux 1974, p. 190). The second use is what is called *simple supposition*, 'in which the term stands for a mental content, but is not used in its significative function' (Ockham 1675, translated in Loux 1974, p. 190), meaning those mental contents do not quite act like objects of reference, but as signs 'subordinate' to another sign, the linguistic expression. Examples are the subjects of sentences such as *man is a species, white is a colour*, and *triangularity is a shape*, where the terms *man, white*, and *triangularity* now stand for mental concepts.

In Ockham, then, we find the general view that ordinarily nominalizations lead to statements either only about individuals or tropes or else (in the presence of certain predicates) about mental concepts.

5. The semantic analysis of sentences with bare nominalizations

5.1. The basic idea

In what follows I adopt the particularist view about the ontology of natural language, on which substances and tropes both play a primary role. Recall, from a more formal point of view, the two ways in which sentences with bare nominalizations and evaluative or episodic predicates can be analysed:

(1) Bare nominalizations are interpreted differently in different contexts. In particular, with evaluative predicates they are interpreted as generic quantifiers ranging over tropes, whereas with episodic predicates they are interpreted as existential quantifiers ranging over the same things.

(2) Bare nominalizations always stand for entities, universals of a sort (whose instances are tropes); but predicates will apply to such entities in a special way, and differently with evaluative and episodic predicates. Let us take predicates to denote functions from individuals to truth values. Then evaluative predicates will apply to kinds as in (13a) and episodic predicates as in (13b), where 'a' is the name of a universal of the sort that bare nominalizations stand for, 'I' the name of the instantiation relation, and 'Gn' the generic quantifier:

(13) a. $[P](a) = 1$ iff $\text{Gn } y(y\text{I}a \rightarrow [P](y) = 1)$

    b. $[P](a) = 1$ iff $\exists y(y\text{I}a \wedge [P](y) = 1)$

The decision between these two ways obviously carries great ontological weight, since only the second, option makes use of universals as referents of bare nominalizations, and thus needs to draw a distinction between two kinds of universals. I will adopt the second option, for reasons to be discussed at greater length later. Let me just mention as the most important reason the possibility of replacing bare nominalizations by descriptions and quantifiers which then trigger exactly the same readings of the various predicates.[14]

The second option must give an answer to the question why an entity such as *a* would trigger such special applications of predicates. I will argue that this is because an entity like *a* is by nature not able to bear ordinary properties as expressed by predicates, and if an entity can't bear properties (that is, if it is a non-object), the predicate will apply to it in another way than by attributing the property it expresses to it.

Deviating somewhat from the common use of the term, I will call entities that are universals but are unable to bear ordinary properties *kinds*.[15] That is, kinds are universals whose instances are particulars of one sort or another and that, unlike universals that are property objects, are not bearers of properties. For example, the kinds that bare nominalizations like *wisdom* stand for will be kinds of tropes. Bare nominalizations like *wisdom*, as singular terms, thus still stand for entities (kinds), but those entities do not act as objects in the sense of being potential bearers of properties.

Like properties, though, kinds are associated with an intension, a function from possible worlds and times to, in the cases discussed so far, sets of tropes. The intension of the kind *wisdom* can in fact be defined on the basis of the two-place predicate *wisdom* (expressing a relation between tropes and individuals):

(14)   int(*wisdom*) = the function f such that for any world w and time t, $f(<w, t>) = \{d \mid \exists d' <d, d'> \in [wisdom]\}$

Before justifying the choice of option (2) for the semantic analysis of bare nominalizations above, let me go through two other classes of predicates that show a difference in behaviour between bare nominali-

---

[14] Fine's (1985) theory of arbitrary objects is closely related to the approach taken here. Arbitrary objects are conceived as objects that inherit their properties from their extension. That is, an arbitrary object *a* has a property *P* just in case all the values of *a* have *P*. Arbitrary objects may also be assigned properties directly, though.

[15] I deviate here in the use of 'kind' from philosophers such as Lowe (1998) and Loux (1998), who take 'kinds' to be sortal universals, as opposed to 'properties' (that is, for Lowe, universals which are instantiated by tropes).

zations and explicit property-referring terms, namely intensional predicates and what I call 'instance-distribution predicates'.

5.2. Further predicates

5.2.1. Intensional predicates

Certain intensional predicates such as *look for* and *need* display a contrast similar to the one found with episodic predicates between bare nominalizations and explicit property-referring terms:

(14) a. John is looking for honesty.

    b. John is looking for the property of being honest.

(15) a. John needs efficiency.

    b. John needs the property of being efficient.

With the predicates *look for* and *need*, bare nominalizations also involve existential quantification over particulars (that is, tropes), but now in the following way. (14a) is true just in case John's search is fulfilled only if John has an instance of honesty (for example, is presented with honest behaviour), and (15a) is true just in case John's needs are fulfilled only if John has an instance of efficiency (for example, is presented with efficiently executed work of the relevant sort). By contrast, the satisfaction of John's search or needs in (14b) or (15b) requires a property as an abstract object. Thus, with explicit property-referring terms, the verb will retain its extensional meaning.

    With *honesty* and *efficiency* in (14a) and (15a) the predicates *look for* and *need* have the readings they would also have with the corresponding singular indefinites that explicitly quantify over instances:

(16) a. John is looking for an instance of honesty.

    b. John needs an instance of efficiency.

In view of this, one might want to reduce the readings the predicates have in (14a) and (15a) (with bare nominalizations) to those they have in (16). There are different views about the correct analysis of intensional verbs like *look for* and *need* (Montague 1974, Zimmermann 1992, Moltmann 1997). I will use Zimmerman's analysis since it is immediately suited for the current purposes. On Zimmermann's analysis, intensional verbs take properties as arguments, which in turn can formally be construed as functions from possible worlds (and times) to

sets of individuals. In (16a) this property would be the intension of *instance of honesty* (int(*instance of honesty*)), that is, the function that maps a possible world and time to the set of instances of honesty at that world at that time. (16a) would thus be analysed as in (17):

(17)   is looking for(John, int(*instance of honesty*))

The truth conditions of (one-place) intensional verbs with bare nominalizations can then be reduced to those with intensional verbs taking intensions as arguments, as in (18), where int(a) is the intension of the kind *a*, the function mapping a time and a world onto the set of instances of *a* at that time and that world:

(18)   For a one-place intensional verb,

$[V](a) = 1$ iff $[V](\text{int}(a)) = 1$.

There is one important difference between occurrences of intensional verbs with bare nominalizations and those with singular indefinite NPs, and that is that with singular indefinites like *an instance of honesty* intensional verbs also allow for an extensional reading, but with bare nominalizations like *honesty* they do not. Thus, (16a), in principle, also has the reading: 'there is a particular instance of honesty which John is looking for'. Such a reading is impossible for (16a). This is evidence that bare nominalizations do not have the status of indefinite singular NPs, but instead are expressions of a different category with a semantics of their own (see also section 7).

Closely related to intensional predicates like *need* and *look for* is the existential predicate *exist*, which also has different readings with bare nominalizations as in (19a)and with explicit property-referring terms as in (19b):

(19) a.   Generosity exists.

b.   The property of generosity exists.

Whereas (19a) claims the existence of instances of generosity, (19b) claims the existence of an abstract object, a property.[16] Setting certain (and quite arguably incorrect) philosophical uses aside, (19a) cannot even ordinarily be used to state what (19b) states, claiming the existence of the abstract object.

---

[16] This observation has basically been made in Strawson (1959, p. 241): '… one says, for example, that saintliness *exists*, or even that *there is such a thing as* saintliness, and means by this the same as we mean when saying that there exist, or that there are, saintly people.'

Let us assume that the linguistic predicate *exist* acts like an intensional verb, normally taking the intension of the subject as its argument. Then given (18), *exist* applies to a kind (in (19a)) in virtue of applying, in the ordinary way, to the intension of that kind. In (19b), by contrast, *exist* would apply to the individual concept of the property of generosity, the function mapping a world and time to that property (that is, the intension of *the property of generosity*).

The predicates discussed in this and the last section have shown that whereas bare nominalizations provide particulars (tropes) for predicates to apply to with their usual meaning, explicit property-referring terms provide only the entire abstract object for that role. In all three cases of kind predicates discussed so far, sentences involving reference to kinds had truth conditions that made them immediately equivalent to sentences not involving reference to kinds. In a somewhat different way, this is also the case for the fourth class of predicates that can apply to kinds.

5.2.2. Instance-distribution predicates
The fourth class of predicates applicable to kinds (in my sense) consists of predicates that could not be true of single particulars, but only of collections of them, (spread across different (spatial or temporal) locations). Such predicates, which include *widespread* and *rare*, are best called *instance-distribution predicates*, since they measure the distribution of instances across different times and factual or counterfactual situations. Again, such predicates display striking differences with respect to bare nominalizations and explicit property-referring terms. This time, though, the predicates in question simply are not acceptable with explicit property-referring terms, but only with bare nominalizations:

(20) a. Honesty is rare.

　　 b. Sloppiness is widespread.

(21) a. ?? The property of being honest is rare.

　　 b. ?? The property of being sloppy is widespread.

The instance-distribution predicates in (21) clearly are not predicated of instances (tropes) or of the intension of a kind (of trope). Why then are they possible with kinds, but not with properties? The explanation I propose is this. Even though instance-distribution predicates do not really express properties of instances, they can be considered quantifiers ranging over instances, and thus as not themselves expressing proper-

ties of kinds. Instance-distribution predicates, more precisely, can be considered complex quantifiers ranging over places as well as tropes. (20a), for example, can roughly be paraphrased as 'for few places p, there is an x such that x is an instance of honesty at p', and (20b) as 'for many places p, there is an x such that x is an instance of sloppiness at p'. More formally, this means that *rare* and *widespread* can be treated as dyadic quantifiers (reducible to a combination of monadic quantifiers) binding two variables, as in (22), where 'AT' denotes the relation of being spatially at:

(22) a.   RARE p x $\exists y(\text{honesty}(x, y) \land \text{AT}(x, p))$

b.   WIDESPREAD p x $\exists y(\text{sloppiness}(x, y) \land \text{AT}(x, p))$

Thus, the application of instance-distribution predicates to kinds need not be considered one of predication. Rather, when instance-distribution predicates apply to a kind, the intension of the kind at the world in question will be predicated of the instances over which the quantifier ranges, as in (23):

(23) $[rare](a) = 1$ iff   RARE p x $(x \, I \, a \land \text{AT}(x,p))$

Instance-distribution predicates could alternatively be analysed as expressing properties of kinds, properties definable in terms of quantification over places and instances. Also the other predicates (evaluative, episodic, and intensional predicates) could in fact be assigned a kind property as their meaning when they occur with kind-denoting terms. For example, an episodic predicate P could be assigned as its kind-related meaning the property $\lambda x[\exists y(yIx \land P(y))]$.

Those properties (predicate meanings) that could not be attributed to kinds would be the ones that are not reducible in terms of properties of or quantification over instances. What properties would these be? Armstrong (1978) argued that it is only formal properties, for example the property of being complex or the property of being conjunctive, that are irreducible second-order properties. This characterization would have to be extended to certain relational properties which kinds also resist, for example evaluative properties (whose evaluation may be based on the formal properties of the kinds to which the property is attributed). Thus, on such an account, it would irreducible second-order properties, that is, formal properties or properties based on formal properties that kinds resist.

The reason to reject this treatment of kind predicates is that there are examples, discussed in the next section, where the predicate alone can-

not force a kind-related versus an object-related meaning. The condition that kinds are subject to is then a simpler one, namely kinds resist properties *simpliciter*.

Kinds are entities that play the same semantic roles as objects in that they can act as semantic values of singular terms and as arguments of predicates. One would thus expect reference to such entities to be possible in other ways than with bare nominalizations, as in fact it is.

6. Explicit kind-referring terms and quantifiers ranging over kinds

There are two kinds of expressions besides bare nominalizations like *wisdom* that can stand for kinds, in the particular sense in which I use the term: 'explicit kind-referring terms' and special quantifiers like *something*.

Among the first kinds of terms are NPs of the form 'determiner-*kind-of*-NP'. Below we see how such terms display the relevant behaviour of evaluative, episodic, intensional, and instance-distribution predicates:

(24) a. John likes this kind of behaviour (namely politeness).

   b. John rarely encounters this kind of honesty.

   c. John has always aspired to this kind of politeness.

   d. This kind of politeness is rare.

(24a) involves generic quantification over behavioural instances and (24b) existential quantification. In (24c), the satisfaction of John's state requires the existence of such an instance. (24d) shows the acceptability of an instance-distribution predicate.

The *kind of*-construction also allows for quantification over kinds, with the same behaviour of the relevant classes of predicates:

(25) a. Every kind of generosity is appreciated.

   b. John experienced every kind of behaviour.

   c. John needs every kind of efficiency.

   d. Every kind of politeness is rare among these people.

Kinds in my sense were characterized above as entities that cannot bear (ordinary) properties and thus trigger special applications of a predicate, to the effect that the predicate is predicated only of the instances of

the kind. Clearly, the intuitive understanding of a kind does not exclude that of a universal acting as an object. In fact, the noun *kind* in English may also be used to form descriptions of a kind that counts as an object, namely, for example, *the kind friendliness* (or, equally, *the kind of friendliness*, meant to refer to friendliness in general). Those descriptions do not stand for non-objects but for objects, as again the behaviour of predicates reveals:

(26) a.   The kind (of) friendliness is nice.

b.   John encountered the kind (of) friendliness.

c.   John needs the kind (of) friendliness.

(26a) can only be understood as meaning that the kind (friendliness) as a whole is nice, (26b) can only mean that John encountered an abstract object and (26c) that he needs an abstract object.

Thus, there are both terms that refer to kinds in the sense of being universals that cannot bear properties and terms that refer to kinds acting as objects, able to bear properties. To distinguish between the two sorts of kinds, let me refer to the former as *kinds (non-objects)* or simply *kinds* and the latter as *kinds (objects)* or *reified kinds*.

Whereas the descriptions in (26) act like explicit property-denoting terms, a slight modification, replacing *kind* by *quality*, yields a description showing true kind (non-object) behaviour with the four types of predicates:

(27) a.   The quality of friendliness is nice.

b.   I rarely encounter the quality of friendliness.

c.   The quality of friendliness hardly exists anymore.

d.   I need the quality of friendliness.

Thus in this construction, it is the choice of the nouns *kind*, *property*, or *quality*, rather than the construction itself that is responsible for the choice of objects or kinds as referents.

Other complex expressions that can stand only for reified kinds are those with the general noun *entity*. Below we see that with the quantificational noun phrase *every entity*, the episodic predicates *find* and *look for* cannot have a 'kind-specific' reading involving existential quantification over (possible) instances:

(28)   John found every entity he was looking for in Mary.

There is one particular sort of quantifier in English, however, that can range over kinds (non-objects). Such quantifiers are formed with the morpheme *-thing* as in *everything, something*, and *nothing*. Below, such *special quantifiers,* as I will call them, range over kinds of tropes and show the expected readings of the predicates:

(29) a. John found everything he was looking for in Mary, kindness, honesty, and trust.

   b. John encountered everything Mary encountered, lack of interest, hostility, and misunderstanding.

   c. John faced nothing unpleasant, not even resistance.

The quantifiers *everything*, *something*, and *nothing* differ fundamentally from the quantifiers *some thing*, *every thing*, and *no thing*, where *thing* acts as a separate word.[17] The latter can only range over objects, as the unacceptability of the sentences below show:

(30) a. ?? John found every thing he was looking for in Mary, kindness, honesty, and trust.

   b. ?? John encountered every thing that Mary encountered, lack of interest, hostility, and misunderstanding.

   c. ?? John faced no unpleasant thing, not even resistance.

Special quantifiers make the most convincing case that bare nominalizations like *wisdom* stand for one and the same entity when triggering different readings of predicates, rather than being interpreted in different ways with different predicates. This is because a single occurrence of a special quantifier, with an appositive bare nominalization as in (31) (*something, namely endless happiness),* allows for different kinds of predicates simultaneously, with their kind-specific readings:

(31)   John experienced something that is very rare, is difficult to obtain and that many people strive for, namely endless happiness.

---

[17] This fact that has not escaped the attention of some philosophers, for example, Lowe (1998). Note that the morpheme *-thing* when forming a quantifier that can range over kinds is only conditionally a bound morpheme (that is, a morpheme that cannot occur in isolation, but must form a single word with another morpheme). If the determiner is not able to form a single word with *thing*, it can still form a 'kind-quantificational' noun phrase with it. Thus, kind readings are available below:

(1) a. There are two things John never experienced, true love and unlimited generosity.

   b. There is no such thing as lack of talent.

   c. John is looking for the same thing as Mary, namely excitement.

In (31), an episodic predicate, an instance-distribution predicate, an evaluative predicate, and an intensional predicate all display the readings they have with kinds. Clearly, the different readings of the predicates in (31) could not possibly be a matter of interpreting *something* in more than one way. Rather *something* here ranges over entities (kinds) to which the predicates apply in a special way.[18]

On the account I have given, a predicate applies to a kind in a special way. On an alternative account, that special application would be traced to the syntactic status of the kind-referring term or kind quantifier or rather the kind variable the quantifier binds. Special quantifiers show that such a special application cannot in fact be made dependent on the syntactic category of a term. First, a single occurrence of a special quantifier can range over objects and over kinds simultaneously, as in (32):

(32)   There are several things John hates: his wife, dishonesty, and greed.

Second, the question word *what* can be used for questions whose answer may be both a mentioning of a kind and a mentioning of an object:

(33)   What does John dislike?

  a. His wife.

  b. Dishonesty.

---

[18] Quantifiers with *-thing* have another function that needs to be distinguished from the one quantifying over non-objects as possible arguments of predicates. *-Thing*-quantifiers can also act as 'nominalizing quantifiers', inducing reference to an entity—for example, a trope or kind of trope—that would not already be present in the logical form of the sentence in the absence of the quantifier (cf. Moltmann 2003a). This is what arguably happens in (1a), where it is rather implausible to assume that *is* takes a property as argument ((1b) is hardly about the property of being a lawyer, rather *is* is a syncategorematic expression ensuring predication of its complement of the subject referent):

   (1) a. John is the same thing as Mary, namely a lawyer.

      b. John is a lawyer.

A good test for the nominalizing function of a quantifier are sentences where the quantifier relates to two predicates simultaneously that would require different kinds of arguments, as in (2):

   (2) John became something admirable, namely a lawyer.

Admirable requires an object, but *become* a property. In Moltmann (2003a), I argued that *something* in (2) induces reference to tropes or kinds of tropes, which do not act as arguments of the predicate, but rather are introduced into the semantic structure of the sentence on the basis of a nominalization.

Third, a description formed with the special noun -*thing* can be used without yet knowing whether that description stands for a kind or an object:

(34)   The two things that John cares most about are his career and fame.

Thus, the special application of predicates with bare nominalizations should be traced to the nature of kinds itself, rather than to a syntactic feature of the expression used to refer to them.

7. Reification of kinds and the notion of an object

We have seen that natural language contains singular terms of different sorts (bare nominalizations, *kind of*-constructions and special quantifiers), which stand for entities that are kinds and as such have the status of non-objects. These entities act as the semantic values of singular terms, variables, and arguments of predicates, but they do not act as property bearers and thus fail to qualify as objects. But with even just slightly different terms natural language also allows reference to the corresponding reified kinds, universals which share the same instances as the corresponding non-reified kind, but which now are able to bear properties and hence qualify as objects. Thus, only some singular terms that stand for universals carry an ontological commitment, referring to an abstract object, (a property object or a reified kind), with concrete instances.

The switch from a kind to the corresponding reified kind seems easily available and can be conceived of as an operation that is a partial mapping of a kind (non-object) to a corresponding kind (object), an operation that must preserve intensions:

(35)   *Reification* reif is a partial function from the domain of non-objects N to the domain of objects O such that for any $n \in N$, reif(n) = d, for some $d \in D$ such that int(n) = int(d).[19,20]

The operation of reification can now be used for formulating the semantics of explicit property-referring terms. If reif maps a kind of

---

[19] The mapping should be partial, since, as is well-known, not every predicate, and its corresponding nominalization can correspond to an object.

[20] With the two domains N and O, we can give the extension of the morpheme –*thing* and the independent noun *thing* as follows:

(1) a. [-*thing*] = N

    b. [*thing*] = $O\backslash\{d \mid d$ is animate$\}$.

trope onto the corresponding property object, the denotation of *the property of honesty* will be as in (36):[21]

(36)   [*the property of honesty*] = reif([*honesty*])

The property of honesty certainly constitutes the canonical way in English to form an explicit description of a property. Since that description is obtained by attaching *the property of* to an explicit description of a kind of trope, it gives a good indication that kinds are, at least cognitively, prior to properties, the latter obtained (that is, made available for reference) only on the basis of an explicit effort of reification.

A remaining issue to deal with, as promised earlier, are the predicates with which kind terms and property terms are interchangeable, that is, examples such as (2b), (3b), and (4b), repeated below:

(37) a.   Honesty is my favourite attribute.

     b.   Wisdom is a property only few people have.

     c.   Courage is a virtue.

Such predicates seem at first sight a problem for the view that kinds are not bearers of properties. In fact, we can recall that Ockham analysed sentences of this sort by means of a shift in meaning of the nominalization, so that the nominalization now stands for a mental concept (rather than standing for the various tropes). Further data, however, indicate that sentences as in (37) should not be analysed as ordinary subject-predicate structures at all. A further modification of the predicate by a relative clause will have the relative clause apply as with explicit property-referring terms, not as with bare nominalizations. Thus, in (38) it is the abstract object, not its concrete instantiations, whose investigation is at stake:

(38)   Honesty is a property that is interesting to investigate.

In (38), the subject stands for a kind, a non-object, but the predicate applies to the corresponding reification.

This indicates that the nouns *attribute, property,* and *virtue* in (37) have a reifying effect also when forming predicates, not only when forming explicit property-denoting terms (*the attribute of honesty, the property of wisdom, the virtue of courage*). In that way, additional rela-

---

[21] The difference between properties and kinds (non-objects) may not just consist in the fact that properties are objects and kinds are not. Properties differ from kinds also in that they can be predicated of entities, whereas kinds cannot: John can have the property of being honest, but not the kind honesty.

tive clauses will apply to the reification, whereas the predicate as a whole applies to the kind. The subjects in (37), by contrast, keeps their usual semantic role, referring to a kind. Thus, (39a) and (39b) both have the analysis in (39d), with (39a)'s analysis being based on the meaning of *a property* (as a predicate) in (39c):

(39) a. Honesty is a property.

   b. The property of honesty exists.

   c. $\lambda x[\text{property}(\text{reif}(x))]]$

   d. property(reif(honesty))

The view that bare nominalizations as well as certain definite descriptions stand for entities that do not count as objects goes against the Fregean criterion of objecthood which ties the syntax of a language to ontology, that is, the criterion that says that an object is whatever a singular term may stand for (Frege 1891, Wright 1982, Hale 1987).

   But are bare nominalizations and equivalent kind-referring expressions really singular terms? Various criteria have been proposed as to what makes an expression (or an occurrence of an expression) count as a singular term. Frege himself proposed as criteria for singular terms the possibility of being replaced by a definite description and the ability to occur in identity statements. We have seen that bare nominalizations can indeed be replaced by a definite description, and both kinds of terms can occur in identity statements, as in Wright's (1982) example below:

(40)   Mercy is the quality Stalin most perspicuously lacked.

Dummett (1973) discusses a number of further criteria, involving inferences, such as the following:

(41)   *t* is a singular term iff

  (1) for any sentence $A(t)$, the inference from $A(t)$ to 'there is something such that $A(it)$' is valid.

  (2) for any sentences $A(t)$ and $B(t)$, the inference from $A(t)$, $B(t)$ to 'there is something such that $A(it)$ and $B(it)$' is valid.

  (3) for any sentences $A(t)$ and $B(t)$, the inference from '$A(t)$ or $B(t)$' to 'it is true of *t* that $A(it)$ or $B(it)$' is valid.

Those criteria are themselves not unproblematic (cf. Dummett 1973, Hale 1987). But anyway they are clearly met by bare nominalizations. This is because bare nominalizations can be replaced by special quantifiers (*something*) and special pronouns (*it*), which can range over or refer to kinds (non-objects).

Given standard criteria, bare nominalizations thus do act as singular terms. Yet they do not stand for objects (in the sense of possible bearers of properties). The relevant notion of a property, though, is closely linked to the notion of a predicates (that is, as the meaning of certain kinds of predicates (not instance-distribution predicates)). This means the present account gives up only the particular Fregean criterion for objecthood, not the close relationship between syntax and ontology more generally that this criterion incorporates.

There are other distinctions between objects and non-objects that some philosophers sometimes appeal to. For example, Armstrong (1989, 1997) has also expressed an intuition to the effect that universals are not objects. He suggests that universals should be looked at as *ways*, rather than as objects.[22] The expression *way* itself is in fact an expression that induces reference either to tropes or to kinds of tropes, namely tropes or kinds of tropes of events. This is because *-way* serves to primarily replace adverbials, as in (42) (and only exceptionally predicative complements):

(42) a. The way John works is efficient.

b. John works the same way as Mary, namely efficiently.

In (42a, b), *the way* and *the same way* refer to the efficiency of John's work and the efficiency of work, a trope of an event and a kind of trope of an event, respectively (cf Moltmann 2003a).

Armstrong (1997) characterizes universals as 'ways' not in terms of how their properties are fixed, but in terms of incompleteness (in the Fregean sense) as well as dependence. Universals, for Armstrong, are types of states of affairs, requiring the completion by an object to yield a particular state of affairs. On the present view, dependence is a characteristic of kinds (in the sense that there cannot be uninstantiated kinds). But taking incompleteness to be a characteristic of kinds, too, seems rather unmotivated. It is the content of predicates to which the Fregean notion of incompleteness is applicable, not bare nominalizations—the latter provide arguments of predicates, which are not incomplete in

---

[22] For an appeal to the term *way* see also Lowe (1998), who, though, uses it for particular tropes or modes, rather than universals.

Frege's sense. The very process of nominalization is in fact best conceived as a process of completion on the basis of an incomplete content, the completion consisting in turning an incomplete predicative content into the kind whose instances are the incomplete content's completions, that is, tropes.

A distinction among objects and non-objects has also been made also by Lowe (1998). Lowe gives several criteria for objecthood, such as having identity conditions, being identifiable, and being countable. Other beings that are not objects may lack identity conditions (for example, tropes), identifiability conditions (for example, electrons), or countability conditions (for example, quantities of stuff). To these purely ontological conditions for objecthood, the present paper has added another, namely that of being irreducibly a bearer of properties, that is, not having a property simply in virtue of conditions involving only lower-level entities (such as particular instances or group members). For the linguistic phenomena discussed, the latter criterion alone, it appears, suffices.

8. Bare plurals and bare mass nouns: reference to kinds of substances and kinds of quantities

The readings that bare nominalizations display with different predicates are not peculiar to nominalizations. Rather they occur in exactly parallel ways with bare mass nouns that are not nominalizations, such as *gold,* and with bare plurals, such as *tigers.* It is just that in the case of underived bare mass nouns such as *gold* the instances involved in the readings are quantities (particular gold quantities), whereas in the case of bare plurals such as *tigers,* the instances are individuals (individual tigers). In fact with simple bare mass nouns and with plurals, the particular readings triggered by at least some of the predicates discussed constitute rather well-known generalizations in linguistic semantics (cf. Carlson 1977a, b). These generalizations about underived bare mass nouns and plurals are, roughly, as follows.

With episodic predicates ('stage-level predicates', as Carlson calls them) such as *find* or *buy,* bare plurals and mass nouns (at least in object position) lead to readings involving existential quantification over instances (quantities or individuals), as in (43):

(43) a. John found gold.

    b. John bought apples.

(43a) means (and can only mean) that there is a quantity of gold that John found, and (43b) that there are some apples that John bought.

Predicates expressing properties perceived as rather permanent ('individual-level' predicates, as Carlson calls them) lead to generic quantification over quantities or individuals, as in (44):

(44) a. Gold is shiny.

   b. Tigers are striped.

Thus, we understand (44a) as 'normally, a given quantity of gold is shiny' and (44b) as 'normally, a given tiger is striped'.

Individual-level predicates should include evaluative predicates, which with bare simple mass nouns and plurals display the generic reading, just as they did with bare nominalizations:

(45) a. John likes gold.

   b. Tigers are interesting.

(45a) roughly can be read as 'in general John likes instances of gold', and (45b), 'in general tigers are interesting'.

Like bare nominalizations, bare simple mass nouns and plurals also allow for intensional predicates with the expected reading, involving now particular quantities or particular individuals in satisfaction situations:

(46) a. John needs gold.

   b. John is looking for white tigers.

(46a) has the (and only the) reading on which John's needs are satisfied if John has some quantity of gold or other; similarly (46b) means that John's search is fulfilled in case he has found some white tigers or other. Again, as with bare nominalizations, (46a) and (46b) display only intensional readings, unlike indefinite singular NPs, which allow for both an intensional and an extensional reading (cf. Carlson 1977a). Thus, (47) can also mean that there is a particular white tiger John is looking for:

(47)   John is looking for a white tiger.

Like bare nominalizations, bare simple mass nouns and plurals also allow for instance-distribution predicates, as in (48):[23]

(48) a.   Gold is rare.

   b.   Rats are widespread.

Finally, in existential sentences as in (49a, b), it is instances (quantities or individuals) that are said to exist, not the kind as such (on a view, let's say, on which kinds may be uninstantiated):

(49) a.   Gold exists.

   b.   White tigers exist.

As with bare nominalizations, the examples in (49) allow for only one reading.

   Of course these data invite the same analysis as I proposed for bare nominalizations. That is, bare mass nouns as well as bare plurals would uniformly refer to kinds, namely kinds whose instances are either quantities, tropes or individuals. This is in fact, more or less, the analysis that Carlson (1977a, b) proposed for simple bare mass nouns and plurals. However, Carlson's analysis is far from being universally accepted. Ever since Carlson's (1977a, b) seminal work, there has been an ongoing debate in linguistic semantics about the correct analysis of bare mass nouns and plurals, with a wealth of new material from different languages gradually being included in the discussion. The alternative analysis, the *Ambiguity Account*, takes bare mass nouns and plurals to be ambiguous between a kind-referring interpretation and one on which bare mass nouns and plurals act as existential or perhaps generic quantifiers (cf. Diesing 1992, Kratzer 1995, Krifka et al. 1995, Longobardi 2002). While the Ambiguity Account receives a lot of support, especially from languages other than English, the Carlsonian account also has its proponents (especially Chierchia 1998, and more recently Zamparelli 2002).

---

[23] Bare mass nouns allow for other kind-specific predicates such as those in (1) or the taxonomic predicates in (2):

   (1)   a. Domestic dogs evolved from jackals.

      b. Light-bulbs were invented by Edison.

   (2)   a. Dogs come in many sizes.

      b. Dogs have very diverse subkinds.

Such examples cannot easily be dealt with by a quantificational analysis of the predicate. But still they may allow for a lexical analysis of the predicate that does not involve kinds as objects, as has been argued by Koslicki (1999)

If the Ambiguity Account was right for simple bare mass nouns and plurals, it should of course carry over to bare nominalizations as well, which would pose a problem for my account as it stands. However, not only are there strong arguments in favour of a Neocarlsonian account of bare mass nouns and plurals in general; it also appears that the two accounts are compatible if they are understood as analyses not of all occurrences of bare mass nouns and plurals with the different classes of predicates, but of only some such occurrences with those predicates, as has been argued recently by Zamparelli (2002). Let us start with a quick review of the linguistic arguments for the (Neo)Carlsonian account.

First of all, we can see that instead of bare mass nouns and plurals, explicit kind-referring terms can be used which allow for exactly the same readings of the predicates as bare plurals and mass nouns (cf. Chierchia 1998):[24]

(50) a. John found this kind of fruit.

b. This kind of animal is striped.

c. This kind of animal is interesting.

d. John needs this kind of metal.

e. There is this kind of animal in the zoo.

f. This kind of animal exists.

Moreover, special quantifiers, at least in place of simple bare mass nouns, trigger the same readings of the predicates:[25]

---

[24] Wilkinson (1995) argues that the reason for the behaviour of such NPs is that their underlying syntactic structure is quite different from the way it appears. She assimilates the structure of *this kind of animal* to *an animal of this kind*, that is, *this kind* is treated as a modifier of *animal*, so that we have the syntactic structure in (1), which is analogous to that of (1b), where *this size* clearly acts as a predicative modifier:

(1) a. $[[\text{this kind}]_{\text{Pred}} (\text{of}) [\text{animal}]_{N'}]_{NP}$

b. $[\text{dress}]_{N'}]_{NP}$

I find this analysis rather problematic, however. Other predicates cannot occur before a singular count noun without a determiner:

(2) * dog of animal

Moreover, the analysis leaves unanswered the question why *that kind* cannot occur as a simple predicate (without preceding *of*):

(3) * Fifi is that kind.

Finally, her analysis could not possibly carry over to special quantifiers like *something,* which, as discussed below, allow for the various classes of predicates with the same kinds of readings when replacing bare mass nouns.

[25] Bare plurals cannot be replaced by special quantifiers:

(1) John bought something that is very expensive and very rare, namely antique coins.

The reason is a formal requirement of agreement. Pronouns relating to plurals NPs must be plural.

(51)   John was looking for something that is very rare, very expensive and hard to get, namely white gold.

A related argument for the uniform account, due to Schubert and Pelletier (1987), is that bare mass nouns, and plurals allow for conjunctions of different predicates, triggering different kinds of readings, for example an intensional and an existential reading in (52a), or similarly with relative clauses in (52b), where we have a generic and an existential reading:

(52) a.   Snow was urgently needed and is finally falling now.

  b.   Olive oil, which is healthier than butter, can be found in the cabinet.

The second kind of evidence is that bare plurals and mass nouns never allow wide scope over other quantifiers or operators in the way singular indefinites do. Thus, (53a) has two readings, whereas (53b) has only one:

(53) a.   John photographed a tiger repeatedly.

  b.   John photographed tigers repeatedly.

One reading of (53a) is 'repeatedly, John photographed some tiger or other'; the second is 'there is a tiger that John photographed repeatedly'. (53b) only has a reading 'John repeatedly photographed some tigers or others'. On an account on which bare plurals are treated as existential quantifiers just like indefinite singulars, it is expected that bare plurals should exhibit the same scope possibilities as singular indefinites. But if, as on the Carlsonian account, bare mass nouns and plurals as such always refer to a kind and existential quantification over instances is a matter of interpreting the predicate, then clearly only a narrow scope reading can result.[26]

A third piece of evidence is that definite anaphora allow for a narrow-scope reading with bare mass nouns and plurals, as in (54a), and they can refer back to a preceding bare mass noun or plural with a predicate exhibiting a different kind of reading, as in (54b):

(54) a.   John is trying to find white tigers. Mary is trying to find them too.

---

[26] This argument is not unproblematic. See, for example, Zamparelli (2002) for a critical discussion.

b. John found white tigers even though they are very elusive.

The second sentence of (54a) means just what *Mary is trying to find white tigers* means (with *them* standing for a kind), and the embedded sentence of (54b) means 'tigers are very elusive'.

Finally, a phenomenon already mentioned in connection with bare nominalizations, but for simple bare mass nouns and plurals first noted by Carlson, is that bare mass nouns and plurals do not allow for extensional readings with intensional predicates, that is, examples such as (46a, b).

Without going into much detail, these are three kinds of observations that give support for the Ambiguity Account:

First, bare mass nouns and plurals behave quite differently from singular definites that clearly refer to kinds, as in (55):

(55)   The horse came to America with Columbus.

Kind-referring singular definites do not allow for existential quantification with episodic predicates, as seen in the contrast between (56a) and (56b) and they do not allow for the corresponding interpretation with intensional predicates, as seen in the contrast between (57a) and (57b):

(56) a. Horses arrived.

b. The horse arrived.

(57) a. ? John needs horses.

b. John needs the horse.

Kind-referring definite singulars moreover exhibit greater restrictions as to with which nominals they can be formed (they can only refer to well-established kinds) and which predicates they can go along with (in characterizing sentences only those predicates that express typical or defining properties of the kind):

(58) a. The tiger lives in Africa.

b. ? The tiger attacks you at night.

c. Tigers attack you at night.

Note also that disjunctions of predicates are impossible with kind-referring singular definites, though they are possible with indefinites:

(59) a. ?? The tiger is male or female.

b.   Tigers are male or female.

A second argument for the Ambiguity Account is the possibility of wide-scope indefinites with sufficiently specific bare plurals, as in (60):

(60)   John is looking for people he had met two days ago.

Finally, and this seems to be the greatest challenge for the Carlsonian account, many languages, for example Romance languages, do not use the same NPs for the existential and the generic reading. In French, for example, bare NPs have a very limited distribution. Instead, for the existential reading the partitive construction as in (61a) is used, and for the generic reading the definite plural as in (61b) or the definite singular as in (61c) (which behaves roughly as in English):

(61) a.   *John a mangé des pommes.* 'John has eaten apples'

   b.   *Les pommes sont douces.* 'Apples are sweet.'

   c.   *La pomme est un fruit.* 'The apple is a fruit.'

The first problem is straightforwardly resolved with the distinction between kinds (non-objects) and kinds (objects). Kind-referring singular definites clearly refer to kinds (objects), that is, beings that are bearers of properties, whereas bare mass nouns and plurals refer to kinds (non-objects). This explains why kind-referring singular definites do not exhibit the particular readings that kind-referring bare mass nouns and plurals do.[27]

The second problem requires allowing an additional existential interpretation of bare mass nouns and plurals, and thus making bare plurals ambiguous when they exhibit the existential interpretation.

Concerning the third problem, it appears that in French and Italian such an existential interpretation is also available for certain kind-referring NPs, namely definite plurals, whereas kind-referring singulars do not allow for such an interpretation (cf. Zamparelli 2002). This makes it plausible that in general natural languages provide expressions, of some sort or another referring to kinds (non-objects) and others referring to kinds (objects). In English, the former include bare plurals and mass

---

[27] Kind-referring singular definites do allow for certain properties that seem inherited from their instances, as in (1a), as well as for instance-distribution predicates, as in (1b):

(1) a. The zebra is striped.

   b. The domestic cat is widespread/common.

But since predicates as in (1a), as said in the text, are much more limited, I will assume that the attribution of *is striped* to a kind (object) is due to a different process than in the case of bare mass nouns and plurals. Similarly perhaps for (1b).

nouns (on one interpretation), as well as *kind of*-NPs and special quantifiers. The latter include kind-referring singular definites as well as NPs of the form *the kind apples*, or *the kind gold*.[28] We can thus, at least tentatively, conclude that the present account of bare nominalizations like *wisdom* is both independently motivated and fits within a general account of kind reference in natural language.[29]

9. Conclusions

This paper was an essay in natural language ontology, the project of uncovering the ontology that natural language presupposes—or better the ontology we accept once we use a natural language. The more specific project was to try to take into account the full range of relevant linguistic facts to settle a particular question concerning the ontology of natural language, namely the question whether natural language does make reference to properties understood as objects in their own right. We have seen that this is, contrary to most philosophers' assumptions, not the case. Bare nominalizations like *wisdom*, which seemed to be singular terms referring to property objects, make in fact reference to entities that act as non-objects, namely universals of the sort that I called 'kinds'. Even though bare nominalizations stand for universals that can act as semantic values of singular terms and variables, and that can be arguments of predicates, those universals do not count as objects in a metaphysical sense (being able to have genuine properties of their own). They act as objects only in a semantic sense (acting as semantic values of terms and as arguments for of predicates). This has been supported by a close investigation of the kinds of predicates attributable to those universals and the kinds of quantifiers able to quantify over them.

---

[28] Also *the belief that S* belongs here, a term which stands for a kind whose instances are 'attitudinal objects', objects of the sort 'John's belief that *S*', see Moltmann (2003b).

[29] Carlson (1977a, b) and similarly Chierchia (1998) account for the particular readings bare mass nouns and plurals trigger on the basis of a distinction between kind variables and individual variables (which we have seen, though, is problematic). Thus, Carlson proposed that any episodic predicate can be lifted to a kind-level predicate, as in (1), where '*I*' symbolizes the instantiation relation, 'x_k' is a kind variable, and 'x' an individual variable:

(1) For any episodic predicate *P*, $P(x_k)$ iff $\exists x\, (x\, I\, x_k \wedge P(x))$

By contrast, 'individual-level' predicates, simplifying, require a generic quantifier Gn, to be lifted to kind-predicates (Carlson 1978, but see Chierchia 1998 for a more sophisticated treatment):

(2) For any individual-level predicate *P*, $P(x_k)$ iff Gn $x\, (x I x_k \rightarrow P(x))$

The problem for this account was pointed out in connection with bare nominalizations, cf. sect. 5.

The overall result of this paper thus undermines the Fregean criterion of objecthood: a term being a singular term does not mean that its referent is an object. A singular term may just stand for an entity that plays a role for semantic predicate–argument relations, but is not itself a bearer of properties and thus not an object. Its function may just be that of helping make statements about particulars. The relation between the syntactic structure of natural language and its associated ontology, we should thus conclude, is more complex and much less obvious than is commonly thought. [30]

Department of Philosophy   FRIEDERIKE MOLTMANN
University of Stirling
Stirling FK9 4LA
Scotland
UK
friederike.moltmann@stir.ac.uk

References

Aristotle 1984: *Categories*. In J. Barnes (ed.): *The Complete Works of Aristotle*. Princeton NJ.

Armstrong, D. 1978: *Universals and Scientific Realism*, Vols 1 and 2. Cambridge: Cambridge University Press.

——1980: 'Against Ostrich Nominalism: A reply to Michael Devitt'. *Pacific Philosophical Quarterly*, 61, p. 440–9. Reprinted in A. Oliver (ed.), pp. 101–111.

——1989: *Universals. An Opinionated Introduction*. Westview Press.

——1992: 'Properties'. K. Mulligan (ed.): *Language, Truth, and Ontology*. Kluwer, Dordrecht. Reprinted in Mellor and Oliver 1997, pp. 160–172.

——1997: *A World of States of Affairs*. Cambridge: Cambridge University Press.

Campbell, K. 1990: *Abstract Particulars*. Oxford: Blackwell.

Carlson, G. 1977a: *Reference to Kinds in English*. PhD dissertation, University of Massachusetts, Amherst. Published 1980, New York: Garland.

——1977b: 'A unified analysis of the English bare plural'. *Linguistics and Philosophy* 1.

---

[30] I would like to thank especially Bob Hale, Mike Martin, Mark Sainsbury, Barry Smith, as well as audiences at the University of Amsterdam, the University of Liverpool, the Institute Jean Nicod (Paris), the University of Glasgow, and London University for discussion.

Carlson, G., F. Pelletier (eds) 1995: *The Generic Book.* Chicago: Chicago University Press.

Chierchia, G. 1984: *Topics in the Syntax and Semantics of Infinitivals and Gerunds.* PhD dissertation, University of Massachusetts, Amherst.

——1998: 'Reference to kinds across languages'. *Natural Language Semantics,* 6, pp. 339–405.

Chierchia, G., R. Turner 1988: 'Semantics and Property Theory'. *Linguistics and Philosophy,* 11, pp. 293–4.

Devitt, M. 1980: '"Ostrich Nominalism" or "Mirage Realism"?'. *Pacific Philosophical Quarterly* 61, 433–9. Reprinted in Mellor and Oliver 1997, pp. 93–100.

Diesing, M. 1992: *Indefinites.* Cambridge MA: MIT Press.

Fine, K. 1982: *Arbitrary Objects.* Oxford: Oxford University Press.

Hale, B. 1987: *Abstract Objects.* Oxford: Blackwell.

Jackson, F. 1977: 'Statements about universals'. *Mind,* 86, pp. 427–9. Reprinted in Mellor and Oliver 1997, pp. 89–92.

Koslicki, K. 1999: 'Genericity and logical form'. *Mind and Language,* 14, pp. 441–67.

Kratzer, A. (1995): 'Stage-level and individual-level predicates'. In Carlson and Pelletier 1995, pp. 125–76.

Krifka et al. 1995: 'Genericity. An introduction'. In Carlson and Pelletier 1995, pp. 1–125.

Laurence, S. and C. Macdonald (eds) 1998: *Contemporary Readings in the Foundations of Metaphysics.* Oxford: Blackwell.

Longobardi, G. (2002): 'How comparative is semantics? A unified theory of bare nouns and proper names'. *Natural Language Semantics,* 9, pp. 335–69.

Lewis, D. 1983: 'New work for a theory of universals'. *Australasian Journal of Philosophy,* 61, pp. 343–377. Reprinted in Mellor and Oliver 1997, pp. 188–227.

——1986: *On the Plurality of Worlds.* Oxford: Blackwell.

Loux, M. J. 1974: *Ockham's Theory of Terms. Part I of Summa Logicae.* Notre Dame: Notre Dame University Press.

——1998: *Metaphysics. A Contemporary Introduction.* London and New York: Routledge.

Lowe, E. J. 1998: *The Possibility of Metaphysics. Substance, Identity, and Time.* Oxford: Clarendon Press.

Mellor, D. H. and A. Oliver (eds) 1997: *Properties.* Oxford: Oxford University Press.

Moltmann, F. 1997: 'Intensional verbs and quantifiers'. *Natural Language Semantics,* 5, pp. 1–52.

——2003a: 'Nominalizing quantifiers'. *Journal of Philosophical Logic,* 35, pp. 445–81.

——2003b: 'Propositional attitudes without propositions'. *Synthes*e, 135, pp. 170–118.

Montague, R. 1974: 'The proper treatment of quantification in ordinary English'. In R. Montague: *Formal Philosophy.* New Haven: Yale University Press.

Ockham, W. 1675: *Summa Totius Logicae.* Pt I., Oxford. Translation by M. Loux: *Ockham's Theory of Terms. Part I of Summa Logica.* Notre Dame: Notre Dame University Press, 1974.

Schubert, L. and J. Pelletier 1987: 'Problems in Representing the Logical Form of Generics' in E. Lepore (ed.): New Directions in Semantics. Academic Press 1987 pp. 387–453.

Simons, P. 1994: 'Particulars in particular clothing: Three trope theories of substance'. *Philosophy and Phenomenological Research,* 54, pp. 553–75. Reprinted in Laurence and Macdonald (eds) 1998, pp. 148–62.

Strawson, P. 1959: *Individuals.* London Methuen.

Williams, D. C. 1953: 'On the elements of being'. *Review of Metaphysics* 7, pp. 3–18. Reprinted in Mellor and Oliver 1997, pp. 112–24.

Wilkinson, K. 1995: 'The semantics of the noun *kind*'. In Carlson and Pelletier 1995, pp. 383–97.

Wright, C. 1983: *Frege's Conception of Numbers as Objects.* Aberdeen: Aberdeen University Press.

Zamparelli, R. 2002: 'Definite and bare kind-denoting noun phrases'. in C. Beyssade et al. (eds), *Romance Languages and Linguistic Theory 2000.* Amsterdam: Benjamins, pp. 305–42.

Zimmermann, T. E. 1992: 'On the proper treatment of opacity in certain verbs'. *Natural Language Semantics,* 1, pp. 149–79.