Simple Generics

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1 Consensus and Dispute

Generic sentences are ubiquitous: "Birds fly", "Bees sting", and "Dogs bark" are just the sort of sentence that we utter and understand in run-of-the-mill conversation. Generics seem to allow us to express general propositions without being committed to full generality. "Birds fly" is true even though penguins can't, "Bees sting" is true even though mason bees don't, and "Dogs bark" is true even if poodles are polite.

Their ubiquity and their intractability to theorization have made generics a popular topic in semantics. However, they have interest beyond natural language semantics. Ceteris paribus laws of special sciences are plausibly expressed by generics as are moral generalizations.[1] A better understanding of generic sentences has the potential to provide a better understanding of the propositions that they express, a class which includes, at least, propositions of interest in ethics and philosophy of science.

The clear consensus among semanticists is that generics have the same kind of logical form as tripartite quantificational sentences. According to this view, generics are genuine generalizations: they express quantification just as overtly quantificational sentences such as "Most pizza is good" do. I will dispute this. According to the theory I defend– the theory of simple generics– generics express monadic predications. On the theory of simple generics, "Dogs bark" has the the same type of logical form as an atomic sentence like "Homer is drinking": each contains a single predicate and a single argument and each lacks a quantifier or similar operator.[2]

1.1 Consensus

The consensus view arises from two observations about generics. The first is that, for many generics, adding adverbs of quantification such as "typically" and "usually" does little to change their meaning. "Typically, dogs bark", and "Usually, water is refreshing" seem to express the same, or almost the same, thing as their generic counterparts.[3] A natural thought, then, is that generics do contain such an adverb; we just don't pronounce it. The second is that our simplest generics contain a common noun in subject position, e.g. "dogs". Such nouns are ordinarily analyzed as predicates, so they have argument places

that need saturation. There is nothing at the level of surface structure that can saturate the argument: surface structure merely provides another predicate of the same order and adicity, e.g. "bark". A natural thought, then, is that generics contain an unpronounced element which saturates the predicate.

The consensus is about logical form: just as "Typically, birds fly" is analyzed as having a tripartite structure consisting of a quantifier ("Typically") and its restrictor ("birds") and matrix ("fly"), generics are said to contain a two-place operator and its arguments. Like most quantifiers, the hypothesized silent operator combines with a predicate to form a generalized quantifier. This allows us to analyze the subject terms of generics as predicates. Despite its phonetic absence, the operator, usually labeled "Gen", is said to be present at logical form.[4] According to the consensus view, the logical form of "dogs bark" can be represented as (1)

(1) Gen x [dogs (x)] [bark (x)]

If (1) adequately captures the logical form of "Dogs bark" then generics have the same tripartite structure as ordinary quantified sentences. Both "dogs" and "bark" are predicates, with their variables bound by the silent operator Gen. The sentence is true just in case the denotations of the predicates stand in the proper relationship.

How universal is the consensus? Sarah-Jane Leslie (2008) summarizes the state of the art as follows: "I know of no contemporary theorists that do not take this schema to underwrite the logical form of generics." Her summary may even understate the degree of consensus. In the literature on generics, I know of only one theorist who has ever held that generics do not have a tripartite structure: Carlson (1977). In his theory, however, there still is a generic operator; the difference is that it is analyzed as a predicate modifier rather than a binary quantifier. Carlson (1989), for reasons to be discussed in section 4, went on to reject this theory in favor of a standard tripartite theory. So, even taking Carlson's change of heart into account, there has been no theorist that disputed the existence of Gen. The only controversy was about the proper role for Gen.

1.2 Dispute

With questions about logical form settled, theorists move on to what they take to be the challenging and interesting task: giving the semantics of Gen. An initial hypothesis is that Gen expresses a near-universal generalization, akin to "typically". To see that this hypothesis fails, consider (2) and (3).

(2) Mosquitoes carry malaria.

(3) Ducks lay eggs.

The truth of (2) requires only a few malaria-carrying mosquitoes; (3) may be true even though only female ducks lay eggs. Surveying the literature on generics reveals a large supply of complicated and interesting examples, and, to go with the examples, a large supply of complicated and interesting semantic

accounts of Gen. With the exception of Leslie's (2007 and 2008) recent proposal, there are extant counterexamples to every analysis. One has the feeling that Leslie's theory has only been spared because of its recency.

I think that the intractability of Gen is unsurprising. On my view, Gen has proven intractable for a very simple reason: it doesn't exist. Generics don't have the tripartite structure that theorists take them to have. Rather, generics have a bipartite structure identical to the structure of simple atomic sentences such as (4), which can be analyzed as (5). On the view I will defend, a generic such as (6) can be analyzed as (7), which contains no Gen.[5]

(4) That is wooden. (Uttered while demonstrating a table.)

(5) W(t)

(6) Boots are made for walking.

(7) MFW(b)

In section 2, I give three reasons for thinking that Gen doesn't exist. These reasons vary in strength, though taken together they provide a serious challenge to the Gen theorist. In section 3, I'll develop a view of generics as simple subject/predicate sentences. I argue that the subject terms of generics are kind-referring and that kinds can inherit properties from their members in much the same way that ordinary objects inherit properties from their parts. The interesting truth-conditions of generics arise from the interesting ways in which kinds inherit properties from their members. As I demonstrate, a virtue of this hypothesis is its coherence with some recent psychological work on the acquisition of generics. In section 4, I respond to potential objections and I'll conclude, in section 5, by making some remarks about the potential implications of my claims for the study of propositions expressed by generics, focusing on ceteris paribus laws.

2 Against Gen

Thus far, I've written impressionistically about Gen not existing. I'll now be more precise. I take it that the name "Gen" was stipulatively introduced in the following way: "Gen" refers to the unpronounced operator that occurs in overtly non-quantified characterizing generics. Characterizing generics, intuitively, are generics that attribute characteristics to the members of some group. For instance, "Ravens are black" expresses the proposition that ravens have the characteristic of being black. Characterizing generics are sometimes contrasted with kind-level predications, such as "Dinosaurs are extinct". Since extinctness cannot be a property of any individual dinosaur, the sentence must predicate extinctness of the kind. Kind-level predications are often called generics, though, for the sake of this discussion, I will refer to them as "kind predications" and exclude them from the class of generics.

Overt non-quantification is just what it sounds like: a sentence is overtly non-quantified just in case it has no quantifier at the level of surface structure. "Occurs in" means, roughly, occurs at the level of logical form. I assume that logical form is distinct from surface structure, though I wish to remain largely neutral on its nature. At the very least, an adequate logical form representation will reveal any semantically relevant elements that are absent from surface structure, as well as resolve any surface ambiguity.

With the description clarified it becomes clear that Gen exists just in case it occurs in the aforementioned generics. The substantive thesis of this section is that Gen doesn't exist. This claim does not entail that there couldn't be a similar operator in non-generics, or there isn't some actual meaning that is a plausible candidate for Gen. The thesis merely entails that there is no such operator in generic sentences.

I'll simplify the discussion by considering only generics with plurals in the subject position. It is well known that definite descriptions, indefinite descriptions, and mass nouns can also head generics. Proper names can occur in the subject position of habituals, such as "Michael swims in the morning". Habituals are sometimes called "generics", other times not. As far as I can tell, the semantics that I give here is generalizable to all of these cases. However, there are potential complications that would make the discussion baroque.

2.1 Uniformity

Kind-predications, such as (8) and (9), are superficially similar to generics, though they uncontroversially don't have a tripartite quantificational structure. The argument from uniformity proceeds from this observation. The idea is that there is significant pressure to give a uniform semantics to generics and kind-predications. As I'll soon argue, kind-predications have a simple bipartite structure. Given considerations from uniformity, we can conclude that generics have the same structure.[6]

(8) Dinosaurs are extinct.

(9) Mosquitoes are widespread.

Uncontroversially, (8) and (9) do not contain unpronounced quantifiers. If they did, they'd have a tripartite quantificational structure as in (10).

(10) Quan x [dinosaur (x)] [extinct (x)]

No matter what "Quan" is taken to stand for, (10) is a bad analysis of (8). According to (10), (8) is true just in case a relevant number of the individual dinosaurs are themselves extinct. This is the wrong result. Extinctness is not a property possessed by individual dinosaurs. Rather, it is a property possessed only by an entire kind of things. Mutatis mutandis for the property of being widespread. Some theorists have labeled kind-only predications such as those in (8) and (9) "generics" though I will shy away from the label here. Labeling is not important; what's important is that they are agreed to be non-quantificational.

Predicates that express such properties have been called "kind-selecting".[7] When they combine with plural count nouns, those nouns cannot be predicates, they must, rather, be referential non-predicates. The standard theory is that the subject terms of sentences such as (8) and (9) are kind-referring. This is natural: it seems that for dinosaurs to be extinct, an entire kind of thing must be extinct; mutatis mutandis for mosquitoes being widespread. Whether or not the subject terms of (8) and (9) are kind-referring, the important point is that their logical forms do not diverge from their surface structures. Each sentence contains a single referential term and a single predicate.[8]

Pressure to treat kind-predications and generics uniformly comes from the interaction between the two types of sentences. In particular, uniformity is motivated by the co-occurrence of genericity and kind-predication, and by the inferences that kind-predications and generics jointly give rise to. To illustrate the latter phenomenon, consider (9) - (12):

(9) Mosquitoes are widespread.

(11) Mosquitoes are irritating.

(12) Mosquitoes are widespread and irritating.

From the kind-predication (9) and the generic (11), we can conclude (12). This type of inference pattern holds generally. When a true kind-predication and a true generic share a subject term, we can truly infer the proposition expressed by a sentence with the shared subject term and the conjunction of the predicates.[9] The best explanation of this pattern of inference is that kind-predications and generics have a uniform logical form. To see this, assume non-uniformity. On the non-uniform picture, (9) has the simple bipartite structure of a kind-predication, while (11) has a tripartite structure containing Gen. In other words, the former sentence ascribes a property to mosquito-kind while the latter ascribes a property to particular mosquitoes, albeit one that must hold with sufficient generality.

On the non-uniform account, then, the two occurrences of "mosquitoes" perform very different semantic functions: the former is a kind-referring term while the latter is a quantifier-restricting predicate. Their superficial similarity misleads as to their differing semantic contributions. As a result, we are left without a common semantic element of (9) and (11) to ground the inference to (12)

Contrast this with a uniform account of (9) and (11). On this account, the occurrences of "mosquitoes" share a semantics: each is a referential non-predicate. In (9) mosquito-kind is ascribed the property of being widespread, and in (11) the very same thing is ascribed the property of being irritating. On such an account there is no mystery as to how we can infer from (9) and (11) to (12).

(12) illustrates the other phenomena that motivates a uniform treatment of generics and kind-predications: the fact that both can occur within a single sentence. A non-uniform analysis of (9) and (11) leads us to bizarre predictions

about (12). If (9) is non-quantificational, this leads to a natural treatment of (12) as non-quantificational: since "widespread", a kind-selecting predicate, is present in both. If (11) contains Gen, this leads to a natural treatment of (12) as quantificational: since "irritating", a predicate of individual mosquitoes, is present in both. The non-uniform view, then, leads us to a treatment of (12) as both quantificational and non-quantificational. "Mosquitoes", in (12), must then play a dual role: it must restrict Gen as well as refer to mosquito-kind. It is mysterious how a single term occurrence could do so much.[10]

Things are much simpler on a uniform account. If "irritating" in (11) ascribes a property to mosquito-kind and "widespread" in (9) does the same, then we are lead to a simple account of (12). On the simple account (12) ascribes a single compound property to mosquito-kind. This compound property is the conjunction of the properties expressed by the predicates in (9) and (11).

As always, there are ways that the Gen theorist could go about treating inferences of the type seen in (9)-(12), as well as the combination of genericity and kind-predication as illustrated in (12). As long as these escape routes are otherwise unmotivated, they will lend no support to the Gen theory. The simplest account of both phenomena is one that treats generics and kind-predicates as semantically uniform.

2.2 Universal Absence from Surface Structure

Standard glosses of Gen such as "typically", "usually" and "generally" fail in cases like (2) and (3), as well as a host of others. The absence of any pronounced English adverb synonymous with Gen is striking, though not nearly as striking as the cross-linguistic data. According to a number of theorists, no known language has a pronounced Gen operator (Krifka, et. al. 1995). This flies in the face of a general principle which I'll call "pronounced".

> **Pronounced**: if English contains an unpronounced, semantically significant operator then we would expect that some other natural language contains a synonymous operator that is, or at least can be, pronounced.

Pronounced is motivated as follows. First, assume that, for the most part, natural languages have similar expressive power. Essential to expressive power, of course, is the content and variety of available operators. It would be surprising if a developed language lacked a device of universal quantification.[11] It would be similarly surprising if a developed language lacked a device for expressing genericity.[12] After all, generics are central to natural language discourse, perhaps even more central than explicitly quantified sentences. If genericity is achieved through an unpronounced generic operator, then that operator will be present in any language with generic sentences. Second, assume that there is no prohibition on pronouncing operators that can, in some languages, occur unpronounced. It is hard to see where such a prohibition would come from, given the fact that the unpronounced elements are common and understood by

just about every speaker. Third, assume that if some language could contain a pronunciation of Gen, then there would exist some language that does. This claim is made plausible by observing the multitude of diverse natural languages. However, if one needs additional motivation, think of the use that we'd have for an explicit Gen operator. In English, generics have the same surface structure as non-generic episodics such as (13).[13]

(13) Ants are in the kitchen.

The most salient reading of (13) is non-generic: it means that ants are in the kitchen right now, rather than that they are generally (typically/sometimes, etc.) in the kitchen. While it is true that we can usually discern from context and meaning whether a given sentence is a generic, it would be helpful to have an explicit operator that disambiguated. After all, even (13) has both generic and episodic reading. On the former, the ants have made the kitchen their home–even if they take occasional day trips–and, on the latter, ants have wandered into the kitchen at the time of the utterance. Which reading is intended may produce differing results when it comes to pest control. An explicit disambiguating operator would, then, be of some use.

One may doubt Pronounced by giving a theory of Gen on which it is explained that natural languages have no need for a pronounced generic operator. Leslie does this: she claims that Gen expresses our default mode of generalization, which is invoked in the absence of other modes. The explanatory power of such a theory is limited: it can explain why natural languages need not have a pronounced generic operator but it can't explain why they do not.[14]

Of course, these considerations aren't decisive. Perhaps the data that linguists have relied on is limited; I offer no new data here. Perhaps the actual world has an anomalous subset of all possible languages: a subset consisting only of languages that lack a pronounced generic operator. Both are possible, and that is why the consideration isn't decisive. Non-decisive considerations may still be strong, however, and I take it that, at the very least, the fact that no pronounced generic operator exists should make us doubt whether any generic operator exists.

2.3 Intractability

I've already mentioned the third reason to believe that Gen doesn't exist: it has proven intractable to theorization. Exactly why this is a reason to disbelieve in Gen requires some explanation. It is not generally the case that the intractability of a term to semantic theorizing is good grounds for disbelieving in its existence. It is familiar, for instance, that we cannot give good necessary and sufficient conditions in reductive terms for something's being in the extension of "game". Surely, though, this gives us no reason to claim that there is no such term. Mutatis mutandis for the majority of natural language terms.

Gen is set apart from these other cases for a simple reason: it is unpronounced. The fact that a word is uttered and heard is nearly definitive evidence

for its existence.[15] Since Gen is unpronounced, there is no such evidence. The question of its existence, then, must be settled by other means.

It is methodologically fair to insist that the burden of proof is on theorists who countenance unpronounced constituents. After all, one can't posit unpronounced constituents to save the day any time one's semantics is in trouble! One way to meet this burden of proof is to give a well-motivated and informative semantic account of the alleged constituent and its contribution to the sentences it occurs in. When it comes to Gen, theorists have failed on this count. The only extant theory with no counterexamples is Leslie's. As I'll show in section 3.6, the main arguments for her theory motivate the theory of simple generics equally well. Giving an adequate semantics is, of course, not the only way to motivate positing an unpronounced constituent. It may also be motivated by theoretical unity and elegance. As a matter of fact, Gen has been put to a huge amount of theoretical work.[16] I will discuss some of this in section 4, arguing that the same work can be done without Gen. However, it is far beyond the scope of this paper to show how every purpose Gen has been put to can be fulfilled by other means. The important point to remember is that while theoretical virtue is a motivation for positing the existence of an unpronounced constituent, it is hardly decisive. In the face of convincing arguments that such a constituent doesn't exist, theoretical virtue seems beside the point.

The upshot, then, is that there is a high burden of proof on those who countenance Gen, and that burden has not been met by those who attempt to characterize the semantics of Gen, and, likely could not be met by those who merely invoke its theoretical virtue. Consequently, the intractability of Gen gives us substantial reason to be suspicious.

3 The Theory of Simple Generics

On the theory of simple generics, there is no Gen. Generics have a simple bipartite predicational structure on par with ordinary atomic sentences. Questions arise. First, to what does the subject term of a generic refer? Second, given that the theory seems to remove the very thing that distinguishes generics from non-generics, what remains to distinguish generics? Third, why do generics often seem like generalizations if, at the level of logical form, they are not?

These questions are pressing. What's even more pressing is that the Gen theorist has answers to each. These are virtues of the Gen theory. I've argued that the vices of that theory give us enough reason to reject it, but our rejection is tentative until we construct a theory that recovers the virtues. On the theory of Simple Generics, the subject terms of generics are kind-referring and the predicates ascribe properties to those kinds. In the remainder of this section, I'll flesh out the theory and argue that, on the theory, the virtues of Gen theories can be recovered.

3.1 Reference to Kinds

I've already observed that some bare plural subjects are referential. This is forced on us by the truth of sentences such as (8) and (9).

(8) Dinosaurs are extinct.

(9) Mosquitoes are widespread.

Individual dinosaurs don't go extinct: such an honor is reserved for the entire kind.[17] For (8) to be true, then, "dinosaurs" must be a kind-referring singular term, rather than a predicate. In 2.1 I argued that there are good reasons to seek a uniform treatment of kind-predications and generics. This gives rise to the hypothesis that the subjects of generic sentences refer to kinds. This idea is not new: it goes back at least to Carlson (1977 and 1980) and, perhaps, to Quine (1960). Carlson further supports the claim that the subjects of generics are kind-referring by observing that uncontroversially kind-denoting phrases can appear in the subject position of generics. The following sentence, from Carlson (1977), can be truly uttered while demonstrating a dog.[18]

(14) This kind of animal barks.

Claiming that the subjects of generics are kind-referring without saying anything about the nature of kinds is unsatisfying. A complete metaphysical account of kinds is far beyond the scope of this discussion, but some substantive remarks are in order. We start with the claim that kinds are whatever sort of thing is referred to by the plural nouns in (8) and (9). We continue with the observation that some terms of English seem to be explicitly kind-referring. In addition to the demonstratives of the type occurring in (14), which can be freely generated, English contains terms such as "Homo sapiens " and "mankind" that seem uncontroversially kind-referring.[19]

Given these starting points, we can begin systematizing truths about kinds into a theory of the metaphysics of kinds. I'll take kinds to have the following four properties, none of which I will defend at length, but all of which accord with our pre-theoretical intuitions.[20]

Ductility: unlike sets, kinds need not have their members essentially or eternally. In other possible worlds and at other times there are different people and, as such, different members of mankind.

Vulgarity: unlike properties, kinds have many features generally ascribed to ordinary spatiotemporal objects and groups. Mankind pervades the planet and is depraved but the property of being a man is neither.[21]

Structure: unlike fusions, the parts of members of a kind need not themselves be members of that kind. My hand is a part of me and I am a member of mankind. However, my hand is not a member of mankind. Contrastively, my hand is part of me and I am a part of the fusion of all humans, as is my hand.[22]

Generality: unlike ordinary individuals, kinds have members. I am an member of mankind, as are the freshmen in philosophy 101 at Cornell. However, it does not make sense to ask for members of ordinary individuals such as me or my frying pan.

One additional property that is not driven by our intuitions, but is needed for the theory of simple generics to get off the ground is Abundance.[23] There must exist a kind for every possible generic subject to refer to. In addition to natural kinds such as water and gold, there will be non-natural kinds such as ginger ale and philosophers. Many discussions of kinds address the distinction between natural kinds and non-natural kinds.[24] I will ignore this distinction here, as I am concerned with kinds and kind-reference in general.

3.2 Truth-Conditions

Most non-generic atomic sentences have comparatively transparent truth-conditions. "Homer is drinking" is true just in case the referent of the subject term– Homer– instantiates the property ascribed by the predicate: drinking (at the time of the utterance). There are some complications. For instance, we do not have on hand a reductive account of drinking. However, this mystery seems to have little to do with the semantics of the sentence. The simple standard bipartite semantics for ordinary atomic sentences seems perfectly plausible.

To some at least, a similar semantic account of generics is prima facie puzzling. Fido, a particular dog, possesses a particular property, barking, by engaging in a type of activity. Dog-kind, the referent of "dogs" in (15), doesn't obviously engage in that particular activity. However, on the theory of simple generics, it does possess the property of barking. There is an apparent tension.[25]

The tension dissolves when we recognize that kinds can, and often do, inherit properties from their members. The truth of "Dogs bark" is kind-level, though such a truth holds in virtue of facts about individual dogs. This type of story will hold with some generality. I will return to this in greater detail, but the basic idea is that whenever a generic sentence appears to generalize over properties of specific things, what is really going on is that a kind is ascribed some property that holds (if it holds) in virtue of members of that kind possessing the property. This explains the truth-conditional similarity between many generics and their explicitly quantified counterparts, as illustrated in (15) and (16).

(15) Dogs bark.

(16) Generally, dogs bark.

The transference of properties from members to kinds may seem a bit odd, but it shouldn't. Such transference is analogous to something that we routinely take for granted: the transference of properties from parts to ordinary objects. In each of the following true sentences, an ordinary object is ascribed a property that it instantiates in virtue of its parts.

(17) The chair is wooden.

(18) The kettle is red.

(19) The table is touching the wall.

For the truth of (17), it is sufficient that almost all of the chair's parts are wooden. The existence of a few metal screws does nothing to undermine the truth of (17), at least as long as the screws are sufficiently inconsequential. Compare this to (15), which, for its truth, requires that nearly all dogs are barkers.

For the truth of (18) (on at least one reading) it is sufficient that the visible parts of the kettle are red. The existence of a black glaze on the inside of the kettle doesn't undermine the truth of the claim. Compare this to a generic such as (20), which seems to require the fierceness of only those tigers that we may come in contact with. The existence of some gentle but hidden tigers does nothing to undermine the truth of (20)

(20) Tigers are fierce.

For the truth of (19) it is sufficient that any part of the table is touching the wall, no matter how small. The existence of a overwhelming majority of parts that are not touching the wall does not undermine the truth of the sentence. Compare this to (2) which requires only very few malaria-carrying mosquitoes in order to be true.

Attempting to give a systematic account of the way in which material objects inherit properties from their parts is something of a fool's errand. The quantity and salience of the parts that is required for inheritance varies greatly.[26] This is already shown in (17)-(19), and more examples would reveal more variance.

The relationship between kinds and their members is similarly unsystematic. The distinct truth-conditions of (15), (20), and (2) attests to this, as do myriad proposals for the semantics of generics. Each of these proposals tries to capture the force of generics as generalizations. On the theory of simple generics, the mistake is revealed. Generics ascribe properties to kinds and, given the multiplicity of properties and the multiplicity of ways kinds inherit properties from their members, no fully general account of inheritance will be forthcoming. This is why Gen has proven intractable.

3.3 Truth-Conditions and Semantic Structure

When giving the truth-conditions of (2) and (15) I used quantificational language. The claim was that (2) is true just in case some mosquitoes carry malaria and that (15) is true just in case generally, dogs bark. This may seem to contradict my claim that generics are non-quantificational. Resolution of the apparent contradiction requires us to follow Leslie (2007 and 2008) and take into account the difference between a sentence's truth-conditions and its semantic structure.

(19) is true just in case some part of the table is touching the wall. In other words, the following biconditional is true.

(21) The table is touching the wall ↔ Some part of the table is touching the wall.

The fact that (21) is true does not entail that the sentences on either side of the arrows are semantically identical. All that is entailed by the truth of the biconditional is that the sentences are true in exactly the same circumstances. This is perfectly compatible with the absence of a quantifier (at any level) from (19), just as the truth of (22) is perfectly compatible with the absence of any term that denotes the property of being a chromosome in "Homer is male".

(22) Homer is male ↔ Homer is a human with a Y chromosome.

The semantic independence of sentences on either side of a true biconditional is compatible with the existence of all sorts of interesting relations between the propositions expressed, as well as an absence thereof. One proposition could hold in virtue of the other, ground the other, etc. It could also be that the propositions are relatively independent, though happen to hold in the same conditions, e.g. two independent mathematical truths.

All of this goes for generics. It is plausible that some generics have the same truth-conditions an explicitly quantified counterpart. It may even be that the propositions expressed by the explicitly quantified counterparts ground the truth of the generics. This, however, does not require that generics are, in any way, quantificational semantically.

3.4 The Characteristics of Generics

I've been focusing on the similarities of generics and non-generics, both in terms of semantic structure and truth-conditions. What I've ignored is that generics do seem to form a natural semantic class that is disjoint from ordinary non-generics. Any fully adequate account of generics will have to either explain why generics form a semantic class or explain away our impression that they do.

The theory of simple generics has the tools to do the former. The first feature of generics that distinguishes them from non-generics is that the subject terms of generics are kind-referring.[27] This is obviously not the case in non-generics such as (17). The second feature that distinguishes generics from non-generics is that generics ascribe properties to kinds that are (or can be) inherited from the members of those kinds. I've stressed that this is analogous to a feature of ordinary atomic sentences: that they often ascribe properties to objects that are (or can be) inherited from the objects' parts. The analogy is strong. However, analogy is not identity. As I stressed when giving a rudimentary metaphysics of kinds, kinds, unlike ordinary objects, are general: they have members. The relationship between a kind and its members is distinct from the relationship between an ordinary object and its parts, and this is one difference between generics and ordinary predications.

Generics, then, do form something of a natural class. It is necessary for a sentence to be a generic that it is a kind-predication that ascribes a property that can be inherited from the kind's members. This accounts for our intuition that

generics are generalizations. I have insisted that, strictly speaking, generics are not generalizations. They do not contain any sub-sentential constituent which has the function of generalizing over property instances. However, there is an attenuated sense in which generics are generalizations. They contain reference to objects that, unlike ordinary objects, are general: they have, or can have, members. Furthermore, the truth-conditions of generics depend on properties of these members. In many cases, if the properties hold with sufficient generality then the generic is true.[28]

These necessary conditions for genericity aren't jointly sufficient. However, they are sufficient to distinguish generics from non-generics in nearly all cases and, I suspect, with some refinement, sufficiency could be secured.[29]

3.5 Acquisition Data

Work on the acquisition of generics has revealed puzzling facts. In a study of 3 and 4 year-olds by Hollander, Gelman, and Star (2002), generic comprehension was compared with comprehension of explicitly quantified statements including "some" and "all". Surprisingly, the 3 year-olds understood the generics better than the explicitly quantified statements. In fact, the explicitly quantified statements were frequently interpreted as generics. Other studies reveal that generics are understood and produced by 2 year-olds, significantly before explicitly quantified statements, which, the data suggests, happens sometime between 3 and 4.[30]

The fact is that generics are easier for children to understand than explicitly quantified statements. Any theory of the semantics of generics which can help explain this is, of course, to be preferred to any theory that treats generics as either on par with or more complicated than explicitly quantified statements. Leslie (2007 and 2008) relies heavily on acquisition data when constructing her theory. Since she takes on the assumption that generics have a tripartite logical form containing Gen, her task is to find a meaning for Gen that makes sense of this puzzling acquisition data.

Leslie's solution is that Gen reflects our default mode of generalization. The idea is that humans have an innate capacity for generalization and this capacity is manifested semantically in Gen. While the truth-conditional contribution of Gen may be, at least from a certain vantage point, less systematic than the truth-conditional contribution of such quantifiers as "some" and "all", Gen is, in another way, cognitively simpler. It is simpler in that it is merely the linguistic correlate of a natural cognitive endowment. Since the endowment comes to us more naturally than understanding of the explicit quantifiers, we should not be surprised that grasping the meaning of Gen happens earlier than grasping the meanings of the quantifiers. There are, of course, a number of worries one may have with the proposal, as well as a number of additional advantages that may be adduced. I'll set those aside and focus on the comparison between Lesile's theory and the theory of simple generics.

Even assuming that Leslie's theory of Gen gives a better explanation of acquisition facts than any other Gen theory on offer, it does not give a better

explanation than the theory of simple generics. On the theory of simple generics, it should not be surprising that children competently use generics before they use explicitly quantified sentences. The explanation is simple: generics are less complex then their explicitly quantified statements. Semantically, using a generic requires exactly as many resources as a non-generic subject/predicate sentence. There is no binary operator to use, so we should not be surprised that children can use generics before they use sentences with such an operator.

Of course, even if generics have a simpler semantic structure than explicitly quantificational sentences, they may have relatively complex truth-conditions. This generates a worry that the proponent of simple generics does not so much solve the acquisition problem as put it off. This worry is misguided. As the discussion in sections 3.2 and 3.3 made clear, all sorts of everyday atomic sentences may have truth-conditions that, under some specifications, are just as complex as generics. We should not conclude from this that all of these sentences are extremely hard to learn. Rather, we should conclude that competent speakers do not need full grasp of all truth-conditional specifications of those sentences with which they are competent. This lesson isn't surprising. After all, the truth-conditions of "That book weighs 10 lbs" in specifiable in terms of a standardized measurement of gravitational force relative to an environment. An inattentive high schooler may be wholly ignorant of these things; this does not mean that he is incompetent with the sentence. It shows, rather, that competence with the sentence can be achieved even in the face of ignorance of the nature of facts that determine its truth.

Not only does the theory of simple generics account for otherwise puzzling facts about acquisition as well as Leslie's theory, it may actually prove superior. In the relevant psychological literature, it is often assumed that generic sentences express kind-level generalizations and the cognition that they reveal is kind-oriented (Gelman 2004 and Prasada 2000). Leslie can deny the former, but admit the latter, on the basis of her interpretation of Gen. However, on Leslie's theory the relationship between understanding of generics and kind-oriented cognition is attenuated: kinds are only brought in to explain the truth-values of generic sentences. On the theory of simple generics, the connection is more intimate. The subject terms of generics are kind-referring and this fact readily explains why the understanding of generics is kind-oriented. This all nicely accounts for the fact that acquisition of generics seems to be accompanied by the ability to generalize based on kind-membership (Gelman 1988).

4 Ob jections

If we disavow Gen, we lose complexity. A worry for the theory of simple generics is that the disavowed complexity was a beneficial. The three most pressing objections to the view stem from this general worry. On each objection, the added complexity of the Gen theory leads to a purported explanatory virtue. The thought is that if we lose Gen, then we lose these virtues.[31]

4.1 Multiple Readings

Some ambiguous sentences can be used to express generics. In the literature, the most prominent and influential argument against a Gen-less theory is that it purportedly cannot account for this ambiguity. The classic example is (23), which is ambiguous between readings that can be paraphrased as (24) and (25).[32]

(23) Typhoons arise in this part of the Pacific.

(24) Typhoons are such that they generally arise in this part of the Pacific.

(25) This part of the Pacific is such that typhoons arise in it.

To begin to understand the data and see why it doesn't genuinely favor the Gen theory, we must set aside a (partial) red herring. It is tempting to claim that (23) is ambiguous because it has a reading on which it is about typhoons and another on which it is about a particular part of the Pacific. This temptation should be avoided. Even wholly unambiguous sentences may shift topic (i.e. what they are about) based on the discourse in which they are situated. For instance, (26) may be primarily about either Kobe or it may be primarily about the quickest jumpshot, depending on the context in which it is situated. This, however, gives us no reason to think that (26) corresponds to two different underlying semantic structures. Rather, it merely shows that we can put a single semantic structure to distinct uses in communication.

(26) Kobe has the quickest jumpshot.

The upshot is that the possibility that a sentence may shift its topic depending on its situation in discourse does not give us good evidence for the sentence's ambiguity. Ambiguity must be supported by something stronger, e.g. truth-conditional divergence. As we will see, constraints on discourse structure may play a key role in determining whether a sentence genuinely admits to multiple readings. This, however, needs to be distinguished from the claim that the possibility of distinct roles in discourse is tantamount to ambiguity.

That said, (23) does seem genuinely ambiguous between the truth-conditionally distinct readings glossed as (24) and (25). A much-cited feature of the Gen theory is that it allows us to provide multiple logical forms for (23), corresponding to its distinct readings. The Gen theorist can claim that the ambiguity concerns which predicate is the matrix and which is the restrictor of Gen. (24) and (25) can be said to correspond to the logical forms (27) and (28).

(27) Gen x [typhoon (x)] [arise in this part of the Pacific (x)]

(28) Gen x [this part of the Pacific (x)] [typhoons arise in (x)]

One may have worries about the adequacy of (27) and (28) as corresponding to the relevant readings of (23).[33] I'll set these aside and grant the Gen theorist that (27) and (28) are truth-conditionally adequate (or at least that adequate logical forms could be provided). The availability of multiple logical forms,

corresponding to the multiple argument-taking possibilities of Gen, does seem initially to favor the Gen theory over the theory of simple generics. After all, it initially seems as if the proponent of simple generics can only provide (23) with a single logical form, glossed as (29):

(29) Arise in this part of the Pacific (Typhoons)

I'll now argue that the possibility of multiple readings for (23) does not genuinely favor the Gen theory because the theory of simple generics has the resources to account for both readings. As already noted, without Gen, the only generic interpretation available for (23) is the bipartite (29). However, there are non-generic interpretations that can be given for (23). In particular, it is well-known that bare plurals in subject position can be interpreted as existentials. To demonstrate this, compare (30) to (15)

(30) Dogs are on my lawn.

(15) Dogs bark.

On the Gen view, "dogs" in (30) is bound by an unpronounced indefinite quantifier while "dogs" in (15) is bound by Gen. On the simple generics view, the same can be said for "dogs" in (30): it is bound by an unpronounced indefinite quantifier. The main disagreement between the two theories is over the existence of Gen in (15).

Having noted the possibility of existential readings for bare plurals, we can recognize the possibility of a second reading for (23): the reading on which "typhoons" is bound by an indefinite determiner. This reading can be glossed as (31).[34]

(31) Some typhoons arise in this part of the Pacific.

Strikingly, (31) is the exact paraphrase that Carlson (1989)–the inventor of the example–used when he attempted to capture the second reading of (23). If (31) and (29) are the two available readings for (23), then the objection to the theory of simple generics is disarmed: logical forms for each of the readings can be provided even in the absence of Gen. Two worries arise. First, one may worry that (31) is not an available reading for (23) at all. Second, one may worry that (31) is not the relevant second reading of (23). I'll address these in turn.

There has been a large literature devoted to discerning the linguistic environments that give rise to existential readings of bare plurals in subject position. Remarkably, a (perhaps the) central thread in this literature is that such readings are somehow location-sensitive, with locatives often triggering them.[35] The generalization is that when a sentence has a bare plural subject and a predicate with a location argument, the bare plural tends to be read as an existential, as in (32)-(34):[36]

(32) Monkeys live in that tree.[37]

(33) People eat in this cafeteria.

(34) Pawpaws grow in this region.

The analogy between (23) and (32)-(34), as well as the crucial role of locatives in generating existentially-read bare plurals leads naturally to the prediction that there will be a reading of (23) on which "typhoons" is read as an existential. This prediction is verified by our intuitions. Imagine that you are traveling to a Pacific island and you want to know what gear you should pack. Being fairly lackadaisical about such matters, you neglect to throw a raincoat in the suitcase. Your frustrated partner demands that you throw one in, emphatically uttering (23). Intuitively, this utterance of (23) can be glossed as (31). The utterance of (23) also passes a fairly standard diagnostic test for existentially read bare plurals: that, unlike generics, they are upward-entailing in the subject position. On the relevant reading (23) entails both (35) and (36).

(35) Storms arise in this part of the Pacific.

(36) Heavy storms arise in this part of the Pacific.

At this point proponents of the Gen theory will remain unsatisfied. They may admit that there is a reading of (23) on which "typhoons" is interpreted existentially but they will insist that (23) has two generic readings, glossed as (27) and (28). On the envisioned view, (23) has three readings. Given that the theory of simple generics only provides us with two–(27) and (31)–the theory is said to be insufficient.

The Gen theorist's intuition is that (23) can be used to express a generalization about this part of the Pacific, to the effect that it is the type of place that engenders typhoons. Recall that a mere shift in topic (aboutness) isn't enough to generate ambiguity. It must also be established that there is a truth-conditional difference. To force the reading that Gen theorists have in mind, consider the following discourse.

Speaker 1: The water in this area is beautiful! Tell me, should I have packed my raincoat when traveling here?
Speaker 2: Well, typhoons arise in this part of the Pacific.

Speaker 1 forces the topic to this part of the Pacific. (23) as uttered by Speaker 2, then, is not plausibly interpreted as a generalization about typhoons, as in (28). The question is whether speaker 2's utterance can plausibly be interpreted as (31). There is evidence that it can be so interpreted: it is upward entailing in the subject position, as evidenced by the fact that it entails (35) and (36). Generics don't exhibit such entailment patterns, and this is reason to doubt that the relevant reading of (23) is generic.[38]

In spite of this evidence, I suspect that Gen theorists will hold their ground. I have glossed the existential interpretation of (23) as (31), though to voice the Gen theorist's worries, it will be illustrative to consider (37).

(37) $\exists$x(typhoon(x) & arise in this part of the Pacific(x))

Focusing on (37), the Gen theorist will claim that the existential reading of (23) has extremely weak truth conditions: it merely requires the existence of a single actual typhoon at some time in history that arose in this part of the Pacific. Surely, they will insist, speaker 2 wishes to communicate something more interesting than this when he utters (23).

The Gen theorist is correct to insist that (37) is not an accurate gloss of (23) as uttered by speaker 2. However, this does not refute the claim that speaker 2's utterance of (23) is interpreted existentially. Glossing speaker 2's utterance as (37) obscures both semantic and pragmatic factors that affect its interpretation. (37) deviates from natural language in at least two ways semantically. First, (37) contains the existential quantifier "$\exists$". The semantic hypothesis we are considering is that existential readings of (23) contain unpronounced indefinite quantifier that bind the predicate "typhoons". It is not claimed that this unpronounced term is synonymous with "$\exists$". In fact, we know this to be false: the unpronounced quantifier has different scopal properties than "$\exists$". Second, (23) contains the present-tense verb "arise", which doesn't obviously preserve its tense when translated to the English/logic hybrid predicate that appears in (37).

The differences between (23) and (37), then, preserve the possibility that the existential reading of (23) has stronger truth-conditions than (37) and, in fact, the truth-conditions of speaker 2's utterance of (23). A complete theory here would require a full analysis of the present tense as well as the silent indefinite, neither of which is currently available. However, the fact that speaker 2's utterance of (23) has the logical properties of an existential, combined with the fact that the objections against reading the utterance as existential seem to rely on unfounded and overly simple theories of the truth-conditions of existentials, seems to provide us with a strong case that the reading is existential.

Importantly, speaker 2's utterance of (23) also has pragmatic properties that may explain why the utterance feels generic or law-like. Specifically, speaker 2's utterance of (23) would violate the maxim of relevance if it didn't communicate something interestingly non-accidental about the part of the Pacific under discussion. The obvious relevant fact is that the part of the Pacific is hospitable to tornadoes. To further support the claim that the felt law-likeness is due to pragmatic effects, notice that we can cancel the law-like content often expressed by utterances of such sentences, as illustrated in the following:

> Speaker 1: Tell me something interesting about this part of the forest.
> Speaker 2: Well, werewolves hunt in this part of the forest.
> Speaker 1: Eek!
> Speaker 2: Don't worry, it only happens when there's a full moon during a leap year and they happen to be in the neighborhood.

Speaker 2's rejoinder makes it clear that he merely wishes to communicate that some werewolves hunt in this part of the forest, not that there is some law-like generalization about this part of the forest to the effect that werewolves

use it for hunting. In the absence of the rejoinder, I suspect that we intuit that speaker 2 does communicate such a generalization. However, that fact that this can be canceled shows that its status as a generalization is not traceable to logical form.

Given the discussion thus far, it should not be surprising that some readings which have been thought to have a generic feel aren't, in fact, semantically identical to paradigmatic generics. A main theme has been that, if the theory of simple generics is correct, generics are ultimately monadic predications. Both their semantic structure and truth-conditional content shares much more with ordinary predications than has been traditionally thought.

We've seen, then, that the theory of simple generics does allow us to provide two readings of (23). I've argued that these two readings of (23) correspond to the two frequently discussed in the literature. Resistance to the claim that the second reading of (23) is existential comes from overly simple assumptions about the truth conditions and the pragmatic effects of existentially quantified bare plurals. The considerations adduced here are not limited to (23)–though they are especially relevant, given the link between locatives and existentially interpreted bare plurals—they apply equally well to other sentences that have been said to have multiple generic readings. Notice, also, that I have merely scratched the surface of the discourse-centric phenomena that can affect the interpretations of generics. In the next subsection I'll explore some of these phenomena on greater detail by focusing on the possible effects that focus has on the interpretation of generics. Those that remain resistant to my treatment of (23) should withhold their verdict until they consider these effects.

4.2 Focus Sensitivity

Sometimes, focusing a word or phrase gives rise to a different reading of the sentence in which the word or phrase occurs. Putting intonational stress on "liver" gives a very different reading of "Dave ate liver" than putting the stress on "Dave" does. In the former case, we stress that Dave ate liver, as opposed to, say, pizza. In the latter case we stress that liver was eaten by Dave, as opposed to, say, John.[39] Marking a constituent as focused can occur in a number of ways. The most familiar is by placing phonetic stress on parts of the uttered sentence. However, similar effect can be achieved by purely syntactic means, e.g. by using cleft constructions. ("It was Mrs. White with the rope in the lounge who murdered Mr. Boddy.")

Natural language operators can be sensitive to focus. When an operator is focus-sensitive, the arguments that it takes are partially determined by focus. Consider the following three sentences, where a subscripted "f" marks a term as focused.[40]

(38) Generally, philosophers love to boogie.

(39) Generally, philosophers$_f$ love to boogie.

(40) Generally, philosophers love to boogie$_f$.

(38), (39), and (40) seem to be truth-conditionally distinct from one another. Roughly, (38) is true just in case more philosophers love to boogie than not. (39) is true just in (a) more philosophers love to boogie than not, and (b) the salient groups of non-philosophers (perhaps the linguists) don't love to boogie. (40) is true just in case (a) more philosophers love to boogie than not, and (b) the salient alternatives to boogieing (perhaps drinking a beer) aren't favored over boogieing by philosophers.

More precise semantic accounts of how this works can be found in numerous places, such as Rooth (1985 and 1995). However, no comprehensive compositional semantics is needed in order to make the basic point that the interpretation of numerous operators seems to depend on focus.

Generics are similar. Focusing particular constituents of generics gives rise to distinct readings.

(41) Philosophers love to boogie.

(42) Philosophers$_f$ love to boogie.

(43) Philosophers love to boogie$_f$.

(41) is true just in case philosophers generally love to boogie. (42) is true just in case philosophers generally love to boogie and salient groups of non-philosophers don't. (43) is true just in case philosophers generally love to boogie and they love it more than the salient alternatives.

Given that (41)-(43) vary in meaning in the way similar to (38)-(40), the natural hypothesis is that Gen is focus sensitive just as explicit quantifiers are. For the Gen theorist this seems to strengthen the analogy between Gen and other quantifiers and, ipso facto, strengthen the claim that generics have a tripartite quantificational structure.

The problem for this line of reasoning is that focus gives rise to similar effects in non-generic cases.

(44) Sam is boogieing.

(45) Sam$_f$ is boogieing.

(46) Sam is boogieing$_f$.

There's no need to go through the varying intuitions about (44)-(46). Suffice it to say that they vary in ways analogous to (38)-(40) and (41)-(43). However, there is no temptation that this truth-conditional variance is somehow traced back to an unpronounced focus-sensitive quantifier in (44)-(46). The focus sensitivity is accounted for in other ways, perhaps by claiming that focus somehow introduces salient alternative sets that the truth of the sentence is evaluated against. The lesson is that focus sensitivity arises with or without quantifiers and the fact that we can claim that Gen is focus sensitive, and then go on to make all sorts of predictions, should not lead us to adopt the Gen theory.

The fact that focus sensitivity need not be traced back to focus-sensitive quantificational operators in unsurprising. Focus, it has been observed, has

a huge number of both semantic and pragmatic effects. Though these effects are quite varied, it is theoretically plausible that they ultimately form a fairly natural class. On the view of Rooth, for instance, focus generally serves to introduce alternatives. These alternatives are then available for use in various mechanisms that affect both semantic and pragmatic interpretation. The fact that focus effects form a fairly natural class can help to explain the felt similarity of generics (41)-(43) with their explicitly quantified counterparts (38)-(40).

Thus far, I've emphasized the ubiquity of focus sensitivity. Focus effects have lead many to claim that some operators are focus sensitive. The focus-sensitivity of generics has lead many to claim that generics contain such an operator. However, the ubiquity of focus sensitivity–even in sentences which clearly contain no such operators–should lead us to be suspicious of this move. If focus sensitivity can be accounted for without operators in a variety of cases, such an account should be generalizable to generics. This point does not depend on any particular account of the nature of the focus sensitivity exhibited by generics. However, to flesh out the picture I'll briefly mention two types of important focus effects that are independent of such operators.

First, consider the ways in which the topic/focus structure of a particular discourse may affect interpretation. In the last subsection, I emphasized the fact that two distinct occurrences of an unambiguous sentence may be said to have distinct topics. The example, repeated below, was that (26) may either be about Kobe or, rather, about the quickest jumpshot, depending on the surrounding discourse.

(26) Kobe has the quickest jumpshot.

The point at issue was that a shift in topic need not be a shift in semantic structure. That said, there is good reason to think that the topic structure of a particular discourse may influence the semantic interpretation of an ambiguous sentence. (23), we observed, was genuinely ambiguous. Which interpretation of (23) arises in a particular discourse may depend on that discourse's topic. Cohen and Erteschik-Shir (2002) have investigated the effects of discourse topic and focus on the interpretation of bare plurals. They argue that when a bare plural denotes the discourse topic, it is interpreted as a referring definite, and when a bare plural denotes a discourse focus it is interpreted existentially. This theory predicts the results argued for in the last subsection. When the topic of a discourse is the part of the Pacific, (23) will be read as an existentially quantified claim about typhoons. When the discourse topics is typhoons, then (23) will be interpreted as a generic about typhoons.

These sorts of discourse structures can, though need not, arise from intonational stress. Sufficient background may determine the topic and focus of a particular sentence, even in the absence of intonational clues. Such a possibility may help to explain the multiple readings of sentences like (23) and how they arise. (23) may be intuitively about this part of the Pacific even when we fail to provide explicit intonational stress. Thus, the varying readings of sentences like (23) may arise based on intonationally inert discourse structures. These

interpretation-affecting discourse structures certainly do not require anything like a focus sensitive operator.

Second, consider the ways in which the alternatives introduced by focus may influence interpretation. Even in the absence of a focus-sensitive operator, focus may introduce alternatives that are then utilized in interpretation. This may help explain the intuitive difference between (45) and (46).

(45) $\text{Sam}_{\mathbf{f}}$ is boogieing.

(46) Sam is $\text{boogieing}_{\mathbf{f}}$.

The intuition is that an utterance of (45) requires that the salient alternatives to Sam aren't boogieing. An utterance of (46), alternately, seems to require that Sam isn't performing the alternatives to boogieing. The exact role of the alternatives in generating these effects will depend on where, ultimately, we wish to locate the effects: either in the semantics of the sentences or their pragmatics. Either way, we can follow Rooth in claiming that the focused constituents have, in addition to standard semantic values, non-standard semantic values called "focus" values. The focus semantic value of "Sam" is the set of entities, which can then be contextually restricted to produce the relevant set of alternatives to Sam, perhaps his fellow dancers. Once introduced, this alternative set may be used in either semantic or pragmatic calculation, and help us to explain the relevant intuitions.

4.3 Substitution Failures and Metaphysical Worries

If the theory of simple generics is correct, the subject terms of generic sentences are kind-referring. As I noted in section 3.1, there are numerous natural language devices for achieving kind reference. There are proper names for kinds as well as demonstratives that can be kind-referring. General taxonomic practices give rise to numerous names for kinds, like "Canis lupus familiaris ", which refers to dog-kind. However, in many cases we cannot intersubstitute kind names for purportedly kind-referring generic subjects. For instance, attempt to substitute "Canis lupus familiaris " for "dogs" in (15) leads to ungrammaticality.

The Gen theorist has an explanation. The attempted substitution fails because we are trying to replace a predicate with a non-predicate. Since Gen requires a predicate in order to serve as its restrictor, the substitution yields uninterpretability.

This explanation sounds plausible enough, but we can give equally plausible explanations on the theory of simple generics. Notice that the attempted substitution replaces a syntactically plural term with a syntactically singular one. This results in a failure of syntactic number agreement, which can perfectly well explain the failure of the substitution. A more convincing objection to the theory of simple generics would consist in identification of a substitution failure that doesn't plausibly arise from independent morphological or syntactic considerations. I know of no such failure.

Even if we can't find a generic that disallows substitution of the subject term for an explicitly kind-referring term, a similar worry remains. On the theory of simple generics, there are myriad true kind-predications of ordinary properties: dog-kind barks, and boot-kind is made for walking. If we construct sentences that contain explicitly kind-referring subject terms and ordinary predicates then we should, by the lights of the theory, produce truths. An objector may claim that we don't. As far as I can tell, the objector's best examples contain taxonomic noun phrases.

(47) *Canis lupus familiaris* barks.

I have no clear intuitions about (47). If, however, "dogs" in (15) and "*Canis familiaris*" co-refer, as the theory of simple generics seems to suggest, then we should predict that (47) is true. This looks like a problem.

The objection is unconvincing. Our intuitions are obscured by the fact that taxonomic NPs are usually used in contexts in which it would be odd to attribute them everyday properties. It is jarring to use "*Canis familiaris*" with the predicate "barks". When it comes to sentences such as (47), we do not have the intuition that they are false. Rather, we just lack intuitions altogether. This suggests that we somehow find the constructions jarring.[41]

Even without a particular substitution failure on hand, an objector may have a number of worries about the metaphysical picture employed. The quantity and diversity of properties ascribed to kinds may seem metaphysically objectionable. I think that there are a number of relevant objections in the neighborhood, and I'll now respond to what I take to be the two most challenging.

The first is that attributing the property of barking to dog-kind is a category mistake. The worry can be generalized: we can use all sorts of everyday predicates to construct generics and, on the theory of simple generics, the consequence of this will be that all sorts of everyday properties are truly ascribed to kinds. This will seem metaphysically unacceptable to some.

To disarm this worry, notice that for every true generic there is a true statement in which the subject term is replaced by a complex demonstrative that designates to a kind. To see this, compare (15) to (48).

(15) Dogs bark

(48) That kind of animal barks. (Uttered while demonstrating a dog.)

Given the existence of sentences like (48), which contain complex demonstratives that designate kinds, it does seem as if we can truly ascribe the property of barking to a kind. Thus, we have independent evidence that kinds can posses the sorts of properties ascribed by ordinary predicates. Some, of course, will resist this reasoning. There are two salient ways to resist.[42] The first is to deny that (48) is true. I take this to be a non-starter. The second is to claim that "barks" is polysemous: sometimes denoting a property instantiated by ordinary objects and other times denoting a property instantiated by kinds. This type of claim is completely compatible with the theory of simple generics, and I will

not resist it here. I will also not endorse it. Such a polysemy claim will have to be supported by either metaphysical restrictions concerning property individuation and instantiation, or linguistic evidence. I have not encountered convincing evidence of either type.[43]

The second objection is that the theory of simple generics commits us to an objectionable lack of specificity.[44] To illustrate the objection consider (49).

(49) Beagles weigh between 22 and 25 pounds.[45]

According to the theory of simple generics, the truth of (49) is supported by the true ascription of the property of weighing between 22 and 25 pounds to a particular kind of dog: beagles. However, there is no more specific weight such that beagles, the kind, can plausibly be attributed. The objection is that this is metaphysically unacceptable. Whenever something weighs between 22 and 25 pounds, the objector insists, there must be some exact weight within the range that can be attributed to it. If sound, this objection generalizes widely. There are myriad true generics which attribute non-specific properties and each would fall prey to the objection.

To see that the objection is flawed, it is sufficient to notice that ordinary objects exhibit the same lack of specificity. Consider the following weight attribution:

(50) Ben weighs between 150 and 160 pounds.

(50) may be true despite the fact that there isn't a single specific weight that can be truly attributed to Ben. How can this be? The answer is simple: Ben's weight varies depending on such contingencies as how many french fries he eats and whether he drags himself to the gym. Over a long enough time span, Ben may cover the entire range (or even exceed it).

I suspect that the lack of specificity in the case of (50) will be said to be relevantly disanalagous to the lack of specificity involved in (49). Ben, after all, varies his weight over time. If we pick a specific time, then we will be able to attribute Ben a specific weight. However, in the case of Beagle-kind, we can focus on any particular (specific) time and still achieve the same lack of specificity. Indeed, the Ben example does depend on temporal considerations. However, these considerations are precisely what makes the case analogous to the Beagle-kind case, rather than disanalogous. To understand the analogy, assume, following David Lewis, that people are composed of temporal slices. For each time Ben exists, there is a part of him at that time. These parts, or time-slices, jointly compose Ben. The reason that there is no single specific weight that is truly attributable to Ben is that he is composed of a number of distinct temporal slices, some of which have distinct weights. Like Ben, kinds are complex. While Ben's constituents are time-slices, the constituents of a kind are its members. Beagle-kind is composed of particular beagles. The reason that we can't attribute a particular weight to Beagles, as a kind, is that the kind has multiple members, many of which have distinct weights. Ben's time slices, then, are analogous to the members of Beagle-kind.

To further understand the analogy, consider the following color attribution.

(51) That scarf is red.

It is tempting to think that whenever we have a general color attribution such as (51), there is a single more specific attribution we can give for each level of specificity. In the case of (51) we may wish to identify the particular shade of red possessed by the scarf (for some level of shade-individuation).

This temptation should be resisted. We can imagine a flamboyant scarf that is composed of a wide variety of shades of red. We can even imagine a (perhaps unattractive) scarf composed of the entire range of red shades, in order. This particular scarf would be such that (51) is its most specific color description. In the case of (51), we are imagining a scarf composed of a number of distinct parts that are distinct shades. The multiplicity of these parts leads to a lack of specificity. The parts are analogous with the members of kinds. The fact that dog-kind has members of varying weights gives rise to our inability to specify a weight more specific than in (49).

5 Implications

Generics aren't just interesting semantically. They can be used to express claims that are of interest in, at least, metaphysics, ethics, and philosophy of science. If the theory of simple generics is correct, these propositions have a different character then they've traditionally been taken to have. Instead of being genuine generalizations on par with standard quantificational propositions, they are simple kind-predications, on par with ordinary monadic predications.

In the abstract it may be hard to see why this difference matters. To show that it does, I'll briefly consider a particular case: *ceteris paribus* laws (cp-laws) of special sciences. My discussion is aimed at illustrating the wider interest of the theory of simple generics, rather than giving anything like a substantial account of cp-laws. Such an account will have to wait for another day.

Cp-laws are just those laws familiar in, for example, psychology and biology, that seem to express non-universal generalizations. The proposition expressed by (52) is a typical example of a biological cp-law.

(52) Ravens are black.

(52) is, of course, a generic of just the type we've been considering. As such, its truth-conditions are familiar: it remains true even in the face of albino ravens and other permissible exceptions. The law expressed by (52), then, seems to hold *ceteris paribus*, this is why cp-laws are so-called. As (52) shows, at least some cp-laws can be expressed by using generics. It is plausible that all, or almost all, can be so-expressed, though this is a more substantial claim.[46] In the literature about cp-laws, one main worry is that cp-laws are, in some way or other, trivial.[47] This is best brought out if we consider (53) which has an explicit "*ceteris paribus*" clause and seems to express something extremely similar, if not identical, to (52).[48]

(53) *Ceteris paribus*, ravens are black.

In giving the semantics for (53) we must give the semantics for "*ceteris paribus* ". Given the variety of potential admissible exceptions–non-black ravens compatible with the truth of (53)–this is no easy task. The worry, crudely put, is that the semantics for "*ceteris paribus* " is going to amount to little more than "except for those that aren't".[49]

The triviality worry is based on a false assumption. The assumption is that generics express generalizations, on par with those expressed by ordinary quantified sentences. On such a view, just as we can ask how many of the ravens need to be black in order for "All ravens are black" to be true, we can ask how many (and which) ravens need to be black in order for (52) to be true. If generics don't express generalizations, then questions about exceptions don't get off the ground. At least as far as the semantics is concerned, there is nothing to potentially trivialize cp-laws: they merely express monadic kind-predications. The issue is whether the kind in question has a certain property, no more, no less. Of course, whether a kind has a property will depend on the properties instantiated by the kind's members. However, as I stressed earlier, the sort of dependence exhibited may vary widely based on both the kind and the property in question. The Gen view obscures this, it predicts that there is a uniform type of generic generalization, as expressed by Gen, when all we actually have is kind-predication which can have widely varying truth-conditions.

What the conception of cp-laws as genuine generalizations forces us to do is to search for a uniform quantificational force. When we reveal that cp-laws are expressed by simple generics, this temptation disappears. Of course, this does nothing by itself to reveal the truth-conditions of cp-laws. However, if the theory of simple generics is correct, we should not expect a tidy revelation anyway. Generics, and cp-laws, may be made true by a variety of features, giving rise to a diversity of truth-conditions that is on par with ordinary predications.[50]

In fact the conception of generics as simple kind-predications may do more than resolve the triviality worry for cp-laws. It also has the potential to buttress a sort of realism about cp-laws and the special sciences that discover them.[51] Skepticism about the special sciences arises from the purported observation that the cp-laws of special sciences fail to be genuine laws because they allow for exceptions. If cp-laws are not generalizations then they are not generalizations that allow for exceptions. The criticism is then sidestepped: laws of special sciences are kind-level, rather than mere generalizations. This opens the door for a non-reductive realism about special science laws. If the kind-predications (or at least some of them) are, somehow, fundamental rather than reducible to facts about members, then the laws will be on just as firm grounding as exceptionless generalizations. Pursuing such a route, of course, requires a huge amount of additional work on both the metaphysics of kinds and philosophy of the special sciences. I am not sure whether such work would succeed. The point is that the theory of simple generics opens doors. Generics express philosophically interesting propositions and, if the theory of simple generics is correct, these propositions are kind predications rather than genuine generalizations. Therefore we can jettison the troubles with generalization and exploit the features of kind-predication.[52]

Notes

[1] On ceteris paribus laws, see Nickel (forthcoming) and on moral generalizations see Vayrynen (2009). Fara (2005) claims that dispositional facts are articulated by using habitual sentences, which are related to generics. I briefly discuss habituals in fn. 29.

[2] For ease of discussion, I'll set aside views on which logical form of simple atomic sentence greatly deviates from their surface structure, e.g. neo-Davidsonian theories like the ones developed by Parsons (1990) and Landman (2001). There would be no trouble adapting the substantive thesis of the paper– that generics have the same type of logical form as ordinary atomic sentences– to such a view.

[3] This is one test for genericity given in Krifka, et. al. (1995).

[4] I'll use "Gen" both to refer to the linguistic item and its purported denotation.

[5] Throughout this discussion I will ignore complexity of the terms in the predicate position of generics. Obviously many of these, such as "made for walking" in (6) are semantically complex. Their complexity, however, is irrelevant to the issues that I will discuss. I will also ignore tense.

[6] Carlson (1977) and Koslicki (1999) also give several arguments in favor of uniformity.

[7] Krifka, et. al. (1995)

[8] Notice that I've claimed that there is a single referential term, not that the term is singular. Following Boolos (1984 and 1985), I imagine that some will want to analyze the plurals in (8) and (9) as plurally referring terms. Kathrin Koslicki (1999), for instance, has suggested this. As far as the considerations in this paper go, this is fine. The main point is that kind-predications have an essentially bipartite structure, even if one "slot" of the structure is filled by multiple elements. There are, however, several worries I see. First, the proponent of plural reference will have to deal with the case of mass nouns, which can be used in the subject position of both generics and kind-predications. Such cases are not easily analyzed as cases of plural reference. Second, plural count nouns in the subject position of kind-predications may support anaphoric pronouns, e.g. "Dogs aren't extinct, and they might have been more numerous then they are." The problems with taking "Dogs" to plurally refer to all of the dogs is that the actual dogs can't have been more numerous than they are. These points, of course, are not decisive. Thanks to Kris McDaniel for pushing me here.

[9] Asher and Morreau (1995) contains a detailed discussion of the types of inferences that generics give rise to, as well as an attempt to account for these inferences.

[10] There is a complication here: the relevant predicate in (12) is actually the compound predicate "widespread and irritating". It is possible for a Gen theorist to hold on to her account of "irritating" as a predicate of individual mosquitoes while claiming that the compound predicate "widespread and irritating" is treated as a predicate of kinds. On this view, the conjunction of the predicates would somehow explain the transformation. While a possible view, it is both mysterious and unmotivated.

[11] Everett (2005) has recently made the controversial claim that the language of the Pirahã in Brazil lacks the resources to express universal quantification, though he claims that they do express genericity.

[12] There are some languages in which genericity is manifested quite differently than in English; see Krifka (1995) and Gellman and Tardif (1998) on generics in Mandarin.

[13] Episodics are sentences whose truth depends an a particular event (episode).

[14] Another purported challenge to Pronounced comes from the existence of PRO: the null subject that purportedly heads infinitive clauses. PRO is not a genuine challenge to Pronounced for the following reason: it has the semantics of an uninflected genderless pronoun. In English we can pronounce such a pronoun: "it". Therefore, English does contain a expression with identical semantics to PRO that can be pronounced.

[15] Why is the evidence nearly definitive rather than definitive? The reason is that words might not be identical to the sounds and symbols used to spell and speak them. Words, plausibly, have meanings built in. On this view two distinct words of different languages may share a spelling and pronunciation, as long as they differ in meaning. Hearing a sound and seeing an inscription provide definitive evidence for the existence of a sound and inscription, but they do not provide definitive evidence that those sounds and symbols have meanings.

Thus, they may not be definitive evidence for the existence of words. Such a possibility is far-flung enough not to concern us here.

[16] See, e.g., all of the essays in Krifka et. al. (1995), especially Kratzer (1995).

[17] Again, I set aside the possibility that "dinosaurs" in (8) plurally refers to all of the dinosaurs, see fn. 12. However, should someone fail to share my worries about that view, much of what I say could be combined with it.

[18] There are complications here due to the possibility of a non-referential semantics for complex demonstratives (King 2001). These complications matter little here, as the examples could be modified to contain only non-complex kind-referring demonstratives.

[19] Obviously, skepticism is possible. One may think that "mankind" and "that kind of animal" are not kind-referring and, instead, play some other semantic role. Rebutting such skepticism is beyond the scope of my discussion. For the time being, it suffices to note that even if such skepticism is possible, it is implausible.

[20] Of objects familiar to metaphysicians, those that kinds most resemble are groups. See Uzquiano (2004) for a discussion of groups and defense of their irreducibility. Johnston (2006) nicely distinguishes between groups and kinds.

[21] As Brian Weatherson mentioned to me in conversation, landing on the moon was a giant leap for mankind but nothing at all for the property of being a man.

[22] Note that fusions have parts while sets have members. Let's say that both members and parts are constituents. A more precise formulation, then, is that the constituency for fusions is transitive, while for kinds it is not.

[23] Russell's paradox looms. If there is a kind under which fall all and only the kinds that are not self-membered, and we allow genuine self-predication, paradox comes quickly. Solving Russell's paradox is far beyond the scope of this discussion, though there are numerous solutions in the literature, nearly all of which are available to the proponent of simple generics.

[24] See, e.g. Quine (1969), Boyd (1991), and Hacking (1991) and the references therein.

[25] Carlson (1977) and Nickel (2006) take this tension quite seriously. The tension is what pushes Carlson (1977) to introduce the generic predicate modifier. Carlson thinks that kinds cannot have the same properties as ordinary individuals so his operator shifts standard predicates to counterparts that denote properties which can be instantiated by kinds.

[26] The quantity and salience required of the parts varies from predicate to predicate, but it also plausibly varies for single predicates from context to context.

[27] Here I set aside habituals such as "Mary eats ice cream", which aren't always taken to be generics. The rest of the necessary conditions will cover habituals. It may be the case, then, that habituals are almost generics insofar as they meet all of the criteria except for kind-reference. In fact, talk of inheritance may work just as well with habituals. Whether "Mary swims" is true may depend on whether Mary inherits the property of swimming from her temporal parts. This type of inheritance will likely be just as varied as the inheritance of kind-properties from member properties and of ordinary object-properties from constituent properties.

[28] There is another reason that generics may seem to form a natural class: our understanding of them may differ in kind from our understanding of non-generics. Tulving (1983) gives some empirical support for this claim. He argues that knowledge expressed by generics is stored in memory differently than non-generic knowledge.

[29] Not just any list of necessary conditions for genericity has claim to be a characterization of genericity. After all it is necessary that generics are not hamburgers, not pizza, and not musical. This list hardly characterizes them! The above list does better because it distinguishes non-generic sentences from generics. We are assuming that generics are sentences and, as such, have all of the necessary properties of sentences. The innovation lies in distinguishing the generics from the non-generics.

[30] Though generics are already produced regularly by 2 year-olds, the rate of production increases greatly between the ages of 2 and 4 (Gelman 2004).

[31] A fourth objection, which I will not discuss, is that weak crossover effects favor a quantificational view of generics. The idea is that singular terms exhibit weak crossover effects: there is a purported reading of "His mother loves John" on which "His" and "John" are co-indexed. Quantificational expressions do not exhibit weak crossover effects. There is no reading of "His mother loves every man" on which "His" is bound by "every man". Generics do not seem to

exhibit weak-crossover effects: there is no reading of "Their parents love children" on which "their" is somehow dependent on "children". See May (1985) for discussion.

I do not focus on weak crossover effects because I find it hard to generate the relevant intuitions. In informal surveying, I have found that I am not alone. However, even if the intuitions were clearer, I think that evidence generated by weak crossover effects is much less convincing than the arguments against Gen that I give in section 2.

[32] The example comes from Carlson (1989) and is stressed in Krifka, et. al. (1995), and Koslicki (1999).

[33] In particular, much more fancy footwork needs to be done to (28) in order to represent a genuine reading of (23). Specifically, one may wish to generalize over normal tornado-inducing situations involving this part of the Pacific.

[34] There are a number of reasons to think that "some" is semantically distinct from the unpronounced existential quantifier, see Krifka (2004). However, none of the relevant differences undermine (31) as a gloss of the existential reading of (23).

[35] See Higginbotham and Ramchand (1997), McNally (1998), and Jager (1999). Kratzer (1995) may be lumped in here, though she thinks that an event variable contained in the predicate is the key to an existentially interpreted bare plural.

[36] To dramatize the point, I use examples that use individual-level predicates, which, according to Carlson (1977), give rise to generic rather than existential readings. Here is a very brief primer on individual-level predicates: such predicates are contrasted with stage-level predicates. The purported contrast is that the latter express relatively temporary properties, e.g. being drunk, while the former express relatively permanent properties, e.g. being tall. The purported generalization is that stage-level predicates lead to existentially interpreted bare plurals while individual-level predicates lead to generically interpreted bare plurals. I don't focus on this distinction because, as seen in (32)-(34), the stage-level/individual-level distinction does not suffice to explain the interpretation of bare plurals.

[37] This example comes from Cohen and Erteschik-Shir (2002). They give a number of other examples of I-level predicates that give rise to readings with existentially interpreted bare plural subjects.

[38] Generics don't exhibit this entailment in either subject or object position. To illustrate the latter point, observe that (54) doesn't entail (55). After all broccoli may be the only vegetable that Sam even considers eating.

(54) Sam eats broccoli.

(55) Sam eats vegetables.

[39] I take focus to ground some features of the information structure of a discourse. See Beaver and Clark (2008) for such a conception of focus. A plausible theory is that logical form constituents are marked as focused and this gives rise to semantically relevant effects. Glanzberg (2005) gives arguments for the claim that focus has truth-conditional effects.

[40] One may wish to individuate sentences in such a way that (38)-(40) are three utterances of a single ambiguous sentence, with focus being used to disambiguate. I don't see that anything I say hinges on the manner in which sentences are individuated.

[41] A google search for "Drosophila melanogaster", the taxonomic name that refers to the fruit fly, reveals a number of cases in which writers are happy to ascribe ordinary properties directly to the kind by using the explicitly kind-referring taxonomic name (or a shortened version). For instance, the sentence "Drosophila has four pairs of chromosomes: the X/Y sex chromosomes and the autosomes 2,3, and 4," was found at http://www.ceolas.org/fly/intro.html.

[42] In total, there are (at least) three ways. The third is to claim that sentences like (48) are generics and that "that kind of animal" is a predicate bound by Gen. In the absence of independent reason to think that complex demonstratives can be bound by quantifiers, I take this to be ad hoc. Notice that "Every that kind of animal barks" is ill-formed, leading us to believe that complex demonstratives cannot restrict quantifiers.

[43] When I delivered this paper at University of Oslo, a number of audience members mentioned that coordination failures of the form "Tweety and that type of animal fly" may provide some evidence for polysemy. Given that such coordination errors arise even in the absence of kind-denotation, I now find such evidence unconvincing.

[44] Thanks to John Hawthorne and Jeff Pelletier for pushing me on this.

[45] This information was found on http://dogbreedinfo.com/beagle.htm.

[46] Nickel (forthcoming) makes this claim, though note that it is fairly typical to express cp-laws by using conditionals rather than generics.

[47] See, for example, Fodor (1991), Schiffer (1991), and Pietroski and Rey (1995).

[48] Of course, not all generics express cp-laws. "Philosophers are clever", while true, is not a law.

[49] It is unclear just how serious the triviality worry really is. If the semantics of "ceteris paribus" were really trivializing, then we'd expect to be able to generate a triviality by affixing it to any sentence, even this false ones. Since this is not possible, "ceteris paribus" must not be trivializing.

[50] The theory of simple generics allows for a systematic theory. To give an example, Rupert (2008) argues that the distinction between strict and cp laws is founded on a distinction between types of nomic principles which support the laws. Rupert's theory could be combined with the theory of simple generics by viewing his theory as a theory of property inheritance for kinds.

[51] I am not claiming that this is impossible on a Gen theory, I merely claim that the theory of simple generics engenders such a realism. Nickel (forthcoming) gives a subtle and promising inflationary account of cp-laws bolstered by his Gen-based theory of generics. To engage with his discussion in a satisfactory way requires far more space than I have here.

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