

# Generics, Covert Structure and Logical Form

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When speakers intend to communicate *something general* about the world, they often use sentences like the following:

- (1) Candy is bad for your teeth.
- (2) A raven is black.
- (3) The tiger has stripes.
- (4) Dogs bark.
- (5) This kind of animal barks. [Uttered while demonstrating a dog.]

These are examples of generic sentences (or simply *generics*). Generics come in a variety of forms, as evidenced by (1)-(5); all of which have non-generic uses as well. Moreover, generics communicate their general content without any overt or pronounced element that is responsible for expressing this content. For example, (1) communicates something general about candy, let's say a generalisation akin to *in general, candy is bad for your teeth*, but does not contain an explicit expression, like *in general*, which is responsible for expressing the general content. Similarly for each of (2)-(5).

Although generics lack a pronounced quantifier, the vast majority of theorists agree that the logical form of generics is nonetheless quantificational. The standard view is that generics have a logical form akin to sentences containing explicit quantifiers, like *in general, candy is bad for your teeth* — that is, they have a tripartite structure consisting of a *quantifier position*, a *restrictor* and a *scope*. Since the quantifier in the case of generics is not

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explicit, theorists posit a covert, unpronounced quantifier expression they call *Gen*, and it is *Gen* that is responsible for expressing the general content of generics.

Recently, some theorists have begun to question the standard view and advocate the competing proposal that generics are a species of kind-predication (i.e., that their logical forms do not contain covert structure).<sup>1</sup> On this view, generics like (1)-(5) are taken to express genuine kind-predications like those in (6) and (7):

- (6) Dinosaurs are extinct.
- (7) Mosquitoes are widespread

The arguments of these theorists are forceful and are receiving quite a bit of attention,<sup>2</sup> and hence, they cannot go unaddressed by those endorsing the standard view.

The goal of this paper is to provide the strongest possible case for the standard view in light of the considerations brought up by Liebesman and Cohen. The paper will provide a novel argument in favour of a quantificational analysis of generics — i.e., that their logical forms contain covert structure, outline reasons for rejecting the competing proposal that generics are kind-predications, and address recent objections to the standard view.

## 1 Generics, Gen and Quantificational Structure

Why think that the logical form of generics is quantificational in the first place? Why do we need to posit *Gen* as part of the logical form of generics?

First and foremost, the predicates (or verb-phrases) in generics express properties that are instantiated by individuals, not kinds. Generics seem to *generalise* over instances of kinds, and to attribute properties to kinds. It is often remarked that generics seem closest in meaning to sentences containing adverbs of quantification — e.g., (1) is close in meaning to *in general, candy is bad for your teeth* or *normally, candy is bad for your teeth*.<sup>3</sup> Moreover, there is good reason to think that the literal content of a kind-predicating logical form is unavailable to ordinary speakers, as dialogues like the following reveal:

- (8) A: Dogs have four legs.  
B: ?? That's absurd; the kind dog doesn't have four legs.
- (9) A: Dogs bark.  
B: ?? That's absurd; the kind dog doesn't bark.

The kind-predication analysis takes the literal (or semantic) content of generics like (8A)-(9A) to be predications of properties to kinds, but as the unacceptability of these types

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<sup>1</sup>Most notably, Liebesman (2011) and A. Cohen (2012). Recanati has also advocated such a view in personal communication.

<sup>2</sup>For instance, Liebesman's paper is amongst the *Philosopher's Annual* best papers of 2011.

<sup>3</sup>In Krifka et al. (1995, p. 9), for instance, it is used as a test for whether or not a given sentence (satisfying certain preconditions) is generic.

of dialogues indicate, this content is unavailable: The kind-predication analysis predicts that (8B)-(9B) should be fine since the literal content of the generic uttered by A should, by the lights of the kind-predication analysis, be an interpretation which is available to B.<sup>4,5</sup>

To make matters worse, there is quite a lot of linguistic evidence which supports quantificational structure.<sup>6</sup> The most influential such evidence is presented in Carlson's *multiple readings argument*. Carlson begins with the observation that some sentences appear to have more than one salient generic interpretation, and argues that the kind-predication theorist has little to no means to explain the ambiguity, whereas the quantificational theorist can merely appeal to the fact that quantified sentences often exhibit the same type of ambiguity. To illustrate, consider the highly discussed generic in (1oa), which is thought to be ambiguous between the two readings, paraphrased in (1ob) and (1oc):

- (1o) a. Typhoons arise in this part of the Pacific.
- b. Typhoons are such that they (generally) arise in this part of the Pacific.
- c. This part of the Pacific is (generally) such that typhoons arise in it.

(1oa) is ambiguous since there are contexts in which the two readings (1ob) and (1oc) are truth-conditionally distinct. The (1ob) reading says of typhoons that they generally have a common origin, namely the part of the Pacific under discussion. The truth of this reading requires that at least a majority of, or possibly even all, typhoons originate in the geographic area in question. (1oc), on the other hand, says something like characteristically or generally some typhoon or other arises in the part of the Pacific under discussion: This reading asserts a general property of the geographical area; the bare plural *typhoons* has more of an existential force. Unlike (1ob), the truth of (1oc) is compatible with there being several geographical areas where typhoons generally originate.

Carlson's famous argument in favour of *Gen* is that the quantification theorist has an easy time explaining the ambiguity present in sentences like (1oa), whereas the kind-predication theorist does not (if he can at all).<sup>7</sup> I will consider what I take to be the crucial

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<sup>4</sup>The fact that there are generics with indefinite singular subjects is also cited as a consideration against the kind-predication analysis since one cannot generally refer to kinds with the indefinite singular (see for example, Leslie (2013)).

<sup>5</sup>Note that a quantificational treatment does not preclude quantification over members of a kind. In this paper, I am not arguing that generics in no way involve appeal to kinds. Indeed, much of the work on generics in psychology makes appeal to kinds in some way. See, e.g., Cimpian, Brandone, and Gelman (2010), Leslie (2007a, 2008).

<sup>6</sup>A list of such evidence might include: (i) the fact that some ambiguous sentences appear to have more than one salient generic interpretation (this is Carlson's famous *multiple readings argument* (cf. Carlson (1989) and Krifka et al. (1995, p. 26)), (ii) generics can exhibit embedding behaviour (cf. Pelletier and Asher (1997, p. 1130)), scope ambiguities with negation, operators, quantifiers (cf. for example Schubert and Pelletier (1987) and Krifka et al. (1995, p. 24)) and weak cross over effects (cf. Liebesman (2011), Leslie (2013)), (iii) the fact that something appears to bind free variables in generic sentences (cf. Carlson (1977), Leslie (2013)) and (iv) that generics appear to be focus-sensitive like explicitly quantified sentences (cf. Krifka (1995), Rooth (1995) and Partee (1991) for example). A quantificational analysis of generics has an easy time explaining this type of data by analogy with explicitly quantified sentences.

<sup>7</sup>According to the quantification theorist, the ambiguity exhibited by (1oa) is a familiar sort of structural

evidence in detail in the next section.

One might think, at this point, that it is overwhelming clear that generics have quantificational structure, however recent arguments put forward by proponents of kind-predication claim that all this data can be explained without positing quantificational structure (cf. Liebesman (2011) and A. Cohen (2012)). This is a bold and ambitious claim, which I will address in what follows.

Further, as mentioned above, kind-predication theorists have some forceful objections to the quantificational analysis and at least *prima facie* compelling reasons for adopting a kind-predication analysis of generics. Firstly, they claim that *Gen* is not pronounced in any known language, and that this is strange given that generics play such an important role in our communication and thought. Secondly, they claim that providing a semantics for *Gen* has proved intractable (cf. Liebesman (2011) and Leslie (2007a, 2008)): A quantificational analysis of generics has the challenge of specifying a meaning for *Gen* in the face such varied generics as:

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ambiguity exhibited by sentences involving quantifier expressions. Such sentences are often times ambiguous between different readings which result from different material being mapped into the restrictor and scope of the tripartite structure. Consider, for example:

- (11) a. Typhoons typically arise in this part of the Pacific.  
b. Typhoons are such that they typically arise in this part of the Pacific.  
c. This part of the Pacific is typically such that typhoons arise in it.

(11a), a sentence involving the quantificational adverb *typically*, is thought to be structurally ambiguous between the two readings in (11b) and (11c) as a result of, in the former case, *typhoons* being mapped to the restrictor of the tripartite structure, and in the latter case, *typhoons* being mapped to the scope of the tripartite structure. The different mappings result in the following distinct logical forms being assigned to (11b) and (11c) respectively:

- (12) Typically  $x$  [Typhoon( $x$ )] [Arise-in-this-Part-of-the-Pacific( $x$ )]  
(13) Typically  $x$  [This-Part-of-the-Pacific( $x$ )]  $\exists y$  [(Typhoon( $y$ )  $\wedge$  Arise-in( $y, x$ ))]

With this observation in tow, the quantification theorist goes on to observe that (11a) is ambiguous between the two readings (11b) and (11c) in an analogous way as (10a) is ambiguous between the two readings in (10b) and (10c). In (11b), *typhoons* is given the force of *typically* and in (11c), *typhoons* is given what seems to be existential force: (11c), but not (11b), is compatible with there being several geographic areas where typhoons typically arise.

If this analogy withholds scrutiny, then there is good reason to think the ambiguity exhibited by (10a.) is the same sort of structural ambiguity; and hence, the quantification theorist has a readily available explanation of the two interpretations.

The kind-predication analysis, on the other hand, doesn't seem to fare as well. On the face of it, treating (10a) as a kind-predication cannot do the same explanatory work. After all, at least initially, it seems that the proponent of kind-predication can only provide (10a) with a single logical form (which results in a generic interpretation), the kind-predication glossed in (14), which corresponds to the (10b) interpretation:

- (14)  $\lambda x$ . Arise-in-this-Part-of-the-Pacific( $x$ ) (typhoons)

The challenge for the proponent of kind-predication, then, is to account for the second reading of (10a) — i.e., the (10c) reading. Liebesman (2011) offers one explanation on behalf of the kind-predication theorist and Koslilcki (1999) offers another.

- (15) Tigers are fierce.
- (16) Philosophers give the Locke lectures.
- (17) Dogs have four legs.

It has proved notoriously difficult to find a unique characterisation of the content of *Gen* across the full range of generics — consider how hard it is even just for the few generics (15)-(17). If (15)-(17) express generalisations, then they express very different generalisations. To get a sense of this, consider the paraphrases in (18)-(20) which reflect common judgments about what (15)-(17) communicate on their most salient interpretations:

- (18) In general, tigers are disposed to be fierce.
- (19) Traditionally, only philosophers give the Locke lectures.
- (20) All dogs without defects have four legs.

This makes it hard to see what sort of content *Gen* expresses which is invariant across all these seemingly different generics.

Both these issues seem devastating to the standard view. The kind-predication analysis, on the other hand, needn't worry about either of these issues since *Gen* doesn't exist!

What is more, there is linguistic evidence which supports a kind-predication analysis of generics (cf. Carlson (1977), Liebesman (2011)). Most notably, generics with subjects which directly refer to kinds, like (5) above, and complex conjunctions, like the following, which involve the co-occurrence of direct kind-predication and genericity:

- (21) Mosquitoes are widespread and irritating.

Such linguistic evidence indicates that generics should be given a kind-predication analysis.

These competing considerations suggest that it is far from settled just what view one should take about the logical form of generics. In what follows, I will attempt to outline how the dispute about *Gen* can be seen as an instance of a more general dispute about covert structure, and the division of labour between semantics and pragmatics. I begin by providing what I take to be the crucial argument in this regard. With this argument in hand, I will argue against the strategies proposed by Liebesman and Cohen in support of the kind-predication analysis. Ultimately, I think that even if one endorses the types of pragmatic strategies Liebesman and Cohen appeal to, then one should still endorse quantificational structure.

## 2 Binding: The Binder Argument

I now offer an argument in favour of the existence of *Gen* — I call it the *binder argument*. Carlson (1977, p.161), argued that an unpronounced predicate modifier *Gn* is needed

as a necessary semantic addition to simple kind-predication. A simple kind-predication analysis of generics is met by difficulties when faced with examples such as (22a) and (23a):

- (22) a. Cats clean themselves.  
 b.  $\lambda x.$  Clean( $x, x$ ) (cat)  
 c. Gn( $\lambda x.$  Clean( $x, x$ ))(cat)
- (23) a. Goldfish like everyone who likes them.  
 b.  $\lambda x.$  [ $x$  likes everyone who likes  $x$ ] (goldfish).  
 c. Gn( $\lambda x.$  [ $x$  likes everyone who likes  $x$ ])(goldfish)

(22a) and (23a) both have readings where individual coreference is required to yield the given interpretation: In (22a), the relevant reading is that each cat cleans itself, and in (23a), the relevant reading is that each individual goldfish has the property of liking everyone who likes that individual goldfish. A simple kind-predication logical form for (22a) like that given in (22b) does not capture the appropriate truth-conditions for the desired readings since it says that the kind cat cleans the kind cat, and not that each member of the kind cat cleans itself. To deal with this, Carlson introduces *Gn* to take the object-level predicate to a kind-level predicate. He formalises (22a) as (23c), which is to be understood as true if and only if the object-level predicate  $\lambda x.$  Clean( $x, x$ ) holds with sufficient regularity over the realisations of the kind. (23a) is handled in a similar manner, in this case *Gn* scopes over the lower quantifier.<sup>8</sup>

Carlson (1977) used such examples as evidence for the presence of a predicate modifier, *Gn*, in the logical form of generics. Note, however, that this type of data is equally good, perhaps even better, evidence for the presence of a quantifier expression, *Gen*, in the logical form of generics. In the rest of this section, I will argue that examples like (22a.) and (23a.) are evidence of binding and therefore, evidence for the existence of *Gen*. And, moreover, that if one believes in covert structure at all (e.g., domain variables), then one is committed to the existence of *Gen*.

One of the, by now, classic arguments for the existence of unpronounced syntactic structure is the so-called *binding argument* (cf. Stanley and Szabo (2000), von Fintel (1994), Partee (1989), among others). The binding argument proceeds from evidence of bindability to the existence of an unpronounced domain variable in the logical form of quantified sentences. There is a similar argument for the existence of a quantifier expression in the logical form of generics, except that this argument proceeds from evidence of bindability to the existence of an unpronounced quantifier expression — what I will call *the binder argument*. While the *binding argument* argues from bindability to the existence of an unpronounced variable which gets bound by an explicit quantifier, the *binder argument* argues from bindability to the existence of an unpronounced binder which does the binding.

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<sup>8</sup>Cf. Carlson (1977, pp.161-2) for three additional reasons for treating the pronouns in question as bound.

Some of the most telling evidence of bindability is given by generics like (22a)-(23a) and (24)-(25):

(24) Good students answer every question on their exam.

(25) Wine shops keep most bottles in the stockroom.

(24) expresses something close in meaning to *in general, if x is a good student, then x answers every question on x's exam*. Similarly, (25) expresses something like *in general, if x is a wine shop, then x keeps most bottles (in x) in the stockroom of x*. What is important to notice about examples (23a) and (24)-(25) is that there is a variable under the scope of the lower quantifier in each case, *everyone that likes them* in (23a), *every question on their exam* in (24) and *most bottles in the stockroom* in (25), as evidenced by the pronouns *them* and *their*; and crucially, the interpretation of this variable varies as a function of individuals introduced by the bare plurals *goldfish*, *good students* and *wine shops* respectively.

Similar examples, where variability is evidenced by variability in the interpretation of a lower quantifier, are used as evidence of bindability in the binding argument:

... quantifier domain restriction is due to the presence of domain variables in the actual syntactic structure of sentences containing quantified noun phrases. But syntactic structure cannot simply be postulated on semantic grounds. Rather, evidence of a syntactic sort must be available for the existence of domain variables. The main source of syntactic evidence comes from the fact that domain variables interact in binding relations with quantifiers. Here is the evidence from bindability. Consider the sentence:

(26) Everyone answered every question.

[(26)] can express the proposition that everyone *x* answered every question on *x*'s exam. What this indicates is that there is a variable accessible to binding somewhere in the quantified phrase *every student*.

...

On the assumption that binding is fundamentally a syntactic phenomenon, such examples provide evidence for a variable somewhere in the syntactic structure of quantified noun phrases. (2002, p.369)

If examples like (26) are taken as evidence of domain variables in quantified sentences (cf. Stanley and Szabo (2000), von Fintel (1994), Partee (1989), among others), then examples like (23a), (24) and (25) should be taken as evidence of a binder. The analogy with the binder argument is strong: We have precisely analogous evidence of a binding relation (or variability) — i.e., of how the interpretation of a lower quantifier phrase varies as a function of the the expressions found in higher positions. In the case of the binding argument this is evidence for a hidden variable in the lower quantifier phrase, in the binder argument this is evidence for a hidden higher quantifier expression, a binder.

If we recognise the existence of a quantifier expression in the logical forms of (23a), (24) and (25), then we have an explanation for why the (23a) and (27), (24) and (28), and (25) and (29) have similar interpretations respectively:

- (27) Typically goldfish like everyone who likes them.
- (28) Generally good students answer every question on their exam.
- (29) Every wine shop keeps most bottles in the stockroom.

In a similar fashion, in (27)-(29) where there is an explicit higher quantifier, the interpretation of the variable varies as a function of the individuals introduced by the higher quantifier phrase, *typically gold fish* in (27), *generally good students* in (28) and *every wine shop* in (29). (23a), (24) and (25) have similar interpretations to (27)-(29) respectively, because they have similar logical forms, as exemplified by the following logical form schemas:

- (30) Gen  $x$  [Restrictor( $x$ )] [LQ  $y$  [Restrictor( $x, y$ )] [Scope( $x, y$ )]]
- (31) HQ  $x$  [Restrictor( $x$ )] [LQ  $y$  [Restrictor( $x, y$ )] [Scope( $x, y$ )]]

The natural explanation of the evidence of bindability exhibited by (23a), (24) and (25), thus, is that there is an unpronounced quantifier expression which acts as the higher quantifier. In order to account for the binding facts exhibited by (23a), (24) and (25), an unpronounced quantifier expression — i.e., a binder — is needed. *Gen* is part of the logical form of generics. Further, if one thinks that the binding argument entails that there exist domain variables in the logical forms of quantified sentences, then one is committed to the existence of *Gen*.

Related evidence of bindability comes from examples of generics containing gradable adjectives (cf. Nickel (2012)), like the following:

- (32) Europeans are tall.
- (33) Sports teams have members that are old.

On some views, the interpretation of gradable adjectives involves the provision of a *standard* or *comparison class*. In Kennedy (2007), Stanley (2002) and Ludlow (1989), examples like (34) and (35) below are used as evidence that gradable adjectives contain a variable which takes as its value a standard (or comparison class) in their logical form:

- (34) Everyone in my family is tall.
- (35) a. In general, my family members are tall.  
b. My family members are generally tall.

In order for (34) to be true, it needn't be the case that everyone in my family has to meet some single contextually given standard of tallness; rather in order for (34) to be true it must be that everyone in my family is tall for the standard of tallness relevant to each individual member. My father must be tall by the standard for older adult males, my niece tall for female teenagers, etc. What accounts for this in the case of quantified sentences containing gradable adjectives (roughly) is that the quantifier phrase is binding a comparison class variable in the gradable predicate.

Just like (34)-(35), in each of (32)-(33), the most salient reading is one in which the standard for the gradable adjectives can vary as a function of the individuals introduced by the bare plurals. For example, in order for (32) to be true, it needn't be the case that Europeans in general meet some single contextually supplied standard of tallness; rather (32) is true just in case (roughly) in general, if  $x$  is a European, then  $x$  is tall by the standard of tallness relevant to  $x$ . The adult male Europeans are tall by the standards for adult males, the female teenaged Europeans are tall by the standards for female teenagers, etc. Similarly, in the case of (33): Its truth in the envisioned scenario merely requires that in general, if  $y$  is a sports team, then there are members of  $y$  that are old by the standard for that sport.

If we recognise the existence of a quantifier expression in the logical forms of (32)-(33), then we have an explanation of why generics like (32)-(33) and quantified sentences containing gradable adjectives like (34)-(35) get analogous interpretations. They are analogous because they have similar logical forms, as exemplified by (36) and (37):

$$(36) \text{ Gen } x [\text{European}(x)] [\text{DegHeight}(x) \leq f_i(x)]$$

$$(37) \forall x [\text{Member-of-my-Family}(x)] [\text{DegHeight}(x) \leq f_i(x)]$$

Thus, a natural explanation of examples like (32)-(33) is that a comparison class variable in the logical form of generics containing gradable predicates is bound by some unpronounced quantifier expression — i.e., generics containing gradable adjectives are further evidence for the existence of a binder in the logical form of generics. If one thinks that there is covert structure like the implicit argument places of gradable adjectives, then one should think that *Gen* exists as well.

### 3 Binding, Kind-Predication and Truth-Conditional Pragmatics

Can the proponent of a kind-predication analysis deal with the relevant readings of (22a) and (24)? I contend that the kind-predication analysis almost certainly cannot be extended to account for the binding phenomena. Consider again some of the evidence of bindability presented with the binder argument above:

$$(22) \text{ a. Cats clean themselves.}$$

$$(24) \text{ Good students answer every question on their exam.}$$

On the reading under consideration, (22a) says something similar to *in general, if  $x$  is a cat, then  $x$  cleans  $x$* . Here, the evidence of bindability is that the denotation of *themselves* varies as a function of the individuals introduced by *cats*. On the relevant reading of (24), it says something like *in general, if  $x$  is a good student, then  $x$  answers every question on  $x$ 's exam*. In the case of (24), the evidence of bindability is that the variable present in the lower quantifier expression varies its interpretation as a function of individuals introduced by *good students*.

The question is whether the linguistic and/or metaphysical resources that the kind-predication theorist has at his disposal (kind predication, the existential reading of the bare plural and other semantic or pragmatic properties of the given utterance) can simultaneously account for bindability and the readings we are after for (22a) and (24).

We already saw why simple kind-predication on its own cannot account for the binding data, however, Liebesman (2011) and A. Cohen (2012) have introduced new strategies for dealing with the data. I will argue that their strategies fail.

### 3.1 The Indefinite, Pragmatics and Binding

Recognising that metaphysics won't get you everything, Liebesman (2011) responds to Carlson's multiple readings argument presented in section 1. Observing that the kind predication theorist only predicts one generic reading of (1oa.) where there are, at least seemingly, two, Liebesman must find a source for the second reading. His strategy to explain the multiple readings of (1oa) is to claim that the second reading of (1oa) is not a generic (i.e., not a kind predication) — he claims it is an existentially quantified sentence.

Having noted the possibility of existential readings for bare plurals, we can recognise the possibility of a second reading for [(1oa)]: the reading on which *typhoons* is bound by an indefinite determiner. This reading can be glossed as [(38)].

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

(2011, p.425)

This strategy, he says, is well-motivated because most theorists agree that bare plurals are ambiguous between a generic reading and an existential (or indefinite) reading — as in example (39) which has the existential reading glossed in (40).

(39) Tigers are on the front lawn.

(40) Some tigers are on the front lawn.

(39) is thought to have an existential reading since (39) seems true in contexts where only a few tigers are on the said front lawn, whereas the generic reading would be false. The existential reading is introduced to account for the intuition that there is a true reading of (39) in such contexts.

So, Liebesman claims that the second reading of (1oa), whose intuitive, communicated content is glossed in (1oc), actually expresses the much weaker content glossed in (38):<sup>9</sup>

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

<sup>9</sup>An anonymous referee for this journal suggested that a more natural gloss might be the progressive: *Typhoons are arising in this part of the Pacific*, and that this is somewhat problematic for Liebesman since it is hard to hear the progressive as a reading of (1oa).

The logical form of the second reading, thus, is not generic, but akin to (41):

- (41)  $\exists x(\text{Typhoon}(x) \wedge \text{Arise-in-this-Part-of-the-Pacific}(x))$

One thing to be wary of from the get-go about this proposal, is that speakers surely wouldn't take the relevant reading of (10a) to be true if, in that part of the Pacific, only one typhoon has ever arisen. Thus, the proposal leaves out the generality of the relevant reading of (10a). The relevant reading of (10a.) is about more than one typhoon. The semantic interpretation Liebesman assigns is, thus, too weak. Liebesman recognises this and claims that we can rely on pragmatics to somehow supplement the content of (38) to yield a stronger interpretation, that at least resembles the generic force in (10c). In particular, he appeals to dialogues of the following sort and the Gricean maxim of relevance in discussing the issue:

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. [(10a)] as uttered by Speaker 2, then, is not plausibly interpreted as a generalisation about typhoons, as in [(10b)]. The question is whether speaker 2's utterance can plausibly be interpreted as [(38)].

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Importantly speaker 2's utterance of [(10a)] also has pragmatic properties that may explain why the utterance feels generic or law-like. Specifically, speaker 2's utterance of [(10a)] 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 typhoons. (2011, pp.427-8)

This same strategy is meant to be extended to all other data in support of quantificational structure. His strategy to account for the binding data, thus, would be to treat (22a) and (24) as, loosely speaking, existentially quantified sentences since the bare plurals in each are assigned their indefinite interpretations on this proposal. This strategy is *prima facie* appealing since it provides a binder in the logical forms of (22a.) and (24) that binds the pronouns. On this interpretation of the bare plural, *themselves* in (22a) and *them* in (24) are bound by means of existential closure, and (22a) and (24) receive the logical forms in (42) and (43) respectively:

- (42)  $\exists x(\text{Cat}(x) \wedge \text{Clean}(x, x))$

- (43)  $\exists x(\text{GoodStudent}(x) \wedge \forall y(\text{Question-on-Exam-of}(y, x) \rightarrow \text{Answer}(y, x)))$

Again, note that (22a) and (24) assert something much weaker than they appear to — they say something like:

(44) Some cats clean themselves.

(45) Some good students answer every question on their exam.

With such a weak semantic interpretation of (22a) and (24), the kind-predication theorist must rely on pragmatics to somehow supplement the content of (22a) and (24) to yield a stronger interpretation. Liebesman at this point could try to appeal to dialogues analogous to that in the above quote:

**Speaker 1:** Good students at this university are so conscientious. Tell me, should I be worried I made the exam too short?

**Speaker 2:** Well, good students answer every question on their exam.

The question is whether speaker 2's utterance can plausibly be interpreted as (45).

An important thing to note about these dialogues which are meant to 'force the reading that *Gen* theorists have in mind' and nonetheless, receive a seemingly weak interpretation, do no such thing. Speaker 2's utterance contains the expression *well*. *Well* is an intensive, a type of focus-sensitive particle.<sup>10</sup> When generics are embedded under these types of expressions their semantic properties are well-known to behave in strange ways<sup>11</sup> In particular, conveniently for Liebesman, generics often receive a quasi-existential interpretation when embedded under such particles. Speaker 2's utterance is what is known as an *existential generic*, and is, thus, not in any way the reading the *Gen* theorist has in mind in discussing the relevant reading of (1oa).

If we reconstruct the dialogue without any focus-sensitive particles present, then we can begin to test Liebesman's claim that speaker 2's utterance is in fact an existentially interpreted utterance whose weak content is strengthened by pragmatics:

(49) **Speaker 1:** The water in this area is beautiful! Tell me, should I have packed my raincoat when traveling here?

**Speaker 2:** Typhoons arise in this part of the Pacific.

(50) **Speaker 1:** Good students at this university are so conscientious. Tell me, should I be worried I made the exam too short?

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<sup>10</sup>I refer my reader to Beaver and Clark (2008).

<sup>11</sup>See for example A. Cohen (2003), von Fintel (1997), Sterken (2013). The most discussed examples involve *only*, *even* and *too*:

(46) Even [mammals]<sub>F</sub> lay eggs.

(47) Only [mammals]<sub>F</sub> give birth to live young.

(48) Birds lay eggs. Mammals lay eggs too.

It seems that the mere existence of some platypuses is sufficient for the truth of (46). But this is puzzling since *even* in (46) requires that its generic prejacent is true and it's not the case that mammals, in general, lay eggs. The generic is getting what A. Cohen (2003) calls a *quasi-existential* reading. Similarly, in (47) the mere existence of some reptiles and fish that give birth to live young is sufficient to falsify (47). Despite the fact that *only* requires the falsity of all the generic alternatives to its prejacent (e.g., the falsity of *birds give birth to live young* and *fish give birth to live young*). As with (46) and (47), it's sufficient for the truth of (48) that some mammals lay eggs.

**Speaker 2:** Good students answer every question on their exam.

It is significantly harder to hear speaker 2's utterance as existentially interpreted without the presence of the particle *well*. Moreover, it is harder to understand why relevance would play any role in the apparent force of the utterance.

Moreover, even if we grant that the pragmatic strategy Liebesman proposes might work for these particular cases, it is very hard to see how it will work in general. Why should we expect utterances of this semantic type to always express their existential interpretation and communicate something 'interestingly non-accidental' about their subjects? This seems implausible and *ad hoc*.<sup>12</sup>

A further argument of Liebesman that is meant to provide evidence that the second reading of (1oa) is in fact existentially interpreted is that it passes a standard test used to identify existentially interpreted noun phrases (cf. Krifka et al. (1995, pp.13-4)). The test concerns whether we can replace the noun phrase in question, in a truth-preserving manner, with any noun phrase whose extension is more inclusive than the original noun phrase. Linguistic contexts in which such replacements are permitted are called *upward-entailing contexts*. Existentially interpreted noun phrases are upward-entailing. In (39), for example, we can replace *tigers* with more inclusive bare plurals like *animals* or *things*, and the corresponding sentences are still true. By contrast, generically interpreted noun phrases are not generally upward entailing. Consider the generic (1) for example, we cannot replace *candy* with *food* or *things* and at the same time preserve truth. Applying this test to (1oa), Liebesman claims that (1oa) is existentially interpreted since it is upward-entailing — as evidenced by the fact that (51) and (52) are both true:

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<sup>12</sup>To further support his claim that the apparent generality of speaker 2's utterance is due to pragmatic effects, Liebesman claims that we can cancel the general content as in the following dialogue:

**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.

Again, we must reconstruct the dialogue so that the relevant utterance is not an existential generic:

**Speaker 1:** Tell me something interesting about this part of the forest.

**Speaker 2:** 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.

I must admit that I don't see how this is a cancellation of the general content expressed by speaker 2. The purported cancellation is merely a qualification or correction of the relevant domain of quantification. Such dialogues are possible with explicit quantifiers as well:

**Speaker 1:** Tell me something interesting about this part of the forest.

**Speaker 2:** Werewolves mostly 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.

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

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

The main issue with Liebesman's proposed account of cases like (1oa) is that there are cases just like (1oa), that exhibit the same ambiguity, which are not upward-entailing on the relevant reading (i.e., the analogue of (1oc)). Consider for example:

- (53) a. Murderers roam the streets in this part of town.
  - b. Murderers are such that they (generally) roam the streets in this part of town.
  - c. This part of the town is (generally) such that murderers roam the streets.
  - d. People roam the streets in this part of town.
  - e. Mammals roam the streets in this part of town.
- (54) a. Vicious dogs protect Ft. Knox gold.
  - b. Vicious dogs are such that they (generally) protect Ft. Knox gold.
  - c. Ft. Knox gold is (generally) such that vicious dogs protect it.
  - d. Mammals protect Ft. Knox gold.
  - e. Animals protect Ft. Knox gold.

(53a) and (54a) both exhibit the same ambiguity that is present in (1oa) — i.e., they are ambiguous between the two readings in (53b) and (53c), and (54b) and (54c) respectively. But (53a) and (54a) are not upward entailing on either reading: All the relevant readings of (53d) and (53e), and (54d) and (54e) are intuitively false despite the bare plurals in question being more inclusive substitutions.<sup>13</sup>

Note that the fact that one might, in addition, hear intuitively true readings of (53d), (53e), (54d) and (54e) is not what is at issue here. What I am pointing out is that there at least two intuitively false ones: The quantificational theorist is equally committed to the lexical ambiguity of bare plurals that Liebesman appeals to (i.e., the existence of an existential interpretation of (1oa), (53a) and (54a)). It is common ground that there is an existential reading available.

Since (53a) and (54a) have at least two readings on which they are false, they are not upward-entailing on the relevant readings. Moreover, since all existentially interpreted sentences must be upward-entailing, such an analysis (i.e., treating the (c) readings of the sentences in question as existentially interpreted) is not open to the kind-predication theorist in general. Treating the cases as generically interpreted, on the other hand, does not preclude the appearance of upward-entailingness in particular cases — generic readings can have the appearance of being upward-entailing: In such cases the facts just happen to be that way. As such, the quantificational theorist can claim that the apparent upward-entailingness of (1oa) is a mere accident of the example chosen: The relevant

<sup>13</sup>I am following the form of Liebesman's argument for upward-entailingness. One might think the issue is actually to do with the upward-entailingness of *this part of the Pacific* since what is at issue is the (1oc) reading. Either way, there is a problem for Liebesman. As an anonymous referee for this journal points out: *Typhoons arise in salt water* is not a true generic.

generic readings of (51) and (52) just happen to be intuitively true. Thus, the (1oc.) reading of (1oa) in question should not be treated as existentially interpreted since this analysis cannot be extended to provide a fully general explanation of the ambiguity data at issue.<sup>14</sup>

The same point applies to the binding cases: The view is that (22a) and (24) should be upward-entailing in their subject position since they are existentially quantified sentences, but they are not. To see this, consider again (22a) and (24), which are not upward-entailing in subject-position:

- (55) a. Mammals clean themselves.
- b. Animals clean themselves.

- (56) a. Students answer every question on their exam.
- b. People who are good at something answer every question on their exam.

(22a) clearly does not entail (55a), nor (55b); and similarly, (24) does not entail (56a), nor (56b). Thus, any approach on which the bare plurals in (22a) and (24) are interpreted existentially fails to account for the data.<sup>15</sup>

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<sup>14</sup>Still further, there is other evidence that the (1oc) reading of (1oa) should be treated as generically interpreted. Accompanying his original multiple readings argument, Carlson considers additional evidence for the generic interpretation:

But is this reading in fact a generic reading of [(1oa)]? By all tests, it appears to be. Consider whether it expresses a regularity (it does); whether it is epistemologically determinate with regard to the present moment (it is not); whether it is stative (it is); whether it is based on a nongeneric (it is; there is an eventive reading, more salient in the past tense — *Typhoons arose in that part of the Pacific* (so all boats avoided the area)). It is also intensional; consider substituting the phrase *where I am pointing my finger* for the phrase *this part of the Pacific*. The intersubstitution is not automatically licensed even if where I am pointing is the part of the Pacific I am talking about. (1989, p.171)

Thus, Carlson provides at least five additional reasons for treating (1oc) as a generic.

<sup>15</sup>Another objection to the Liebesman strategy is that (1oa), (22a) and (24) pass a different test which is used to preclude existentially interpreted noun phrases (Leslie, 2007b):

The second test concerns interactions with adverbs of quantification: We cannot insert an adverb of quantification into a sentence receiving the existential interpretation without inducing a significant change in meaning. If a sentence receives the generic interpretation, however, then we can. *Usually* is a good candidate to be inserted into the first of the pairs above: *tigers are striped* and *tigers are usually striped* are very close in meaning. Some “troublesome” generics become false with the insertion of *usually*. However, in those cases we can insert *sometimes* with a minimal change of meaning. *Tigers are sometimes on the front lawn*, however, has a distinctly different meaning from [39]. If we cannot insert any adverb of quantification into the sentence without changing the meaning significantly, this suggests the statement is not a generic. (2007b, p.7)

Applying the test and inserting *sometimes* into (1oa), we have:<sup>16</sup>

- (59) a. Typhoons sometimes arise in this part of the Pacific.
  - b. Sometimes typhoons arise in this part of the Pacific.
- (38) Some typhoons arise in this part of the Pacific.

I conclude that, despite Liebesman's contention, Carlson's multiple readings data, as well as the binding data cannot, in general, be given readings on which their bare plural is interpreted existentially. The proponent of kind-predication will have to appeal to something more radical to account for the linguistic evidence of quantificational structure.

### 3.2 Kind Predication and Truth-Conditional Pragmatics

The other option the kind-predication theorist has at this stage is to appeal to truth-conditional pragmatics. Advocates of truth-conditional pragmatics do not think that binding data of the sort presented above suffices to establish covert structure in the logical form of the sentence in question. Though not a dominant view, there are a whole slew of theorists that are not convinced that binding data warrants positing covert semantic structure (cf. Recanati (2004, 2010, 2002), Sperber and Wilson (1995), Carston (2000, 2002), Bach (2003), among others).

The existence of a bound variable interpretation for an utterance is not, therefore, a sufficient condition for the presence of a variable in the logical form of the linguistic expression uttered. Nor is it a necessary condition... (Carston, 2000, p.30)

Advocates of truth-conditional pragmatics will not be convinced that *Gen* is part of the logical form of generics. They will argue that the linguistic data in question only indicates that relevant generalisation can enter into the interpretation of generics at some stage; no more, no less — and that this stage might be semantic, but it might also be pragmatic.

A. Cohen (2012) has recently advocated just such a position. According to Cohen, generics share a logical form with kind-predictions, and the quantificational form of generics involving the communication of a generalisation is only conveyed via characteristically pragmatic means:

The generic quantifier is not “there” in the input sentence: it is introduced by reinterpretation... the quantifier in the logical form of generics is introduced by Predicate Transfer, which is clearly a pragmatic process. Hence, the current work can be seen as evidence for views that logical form is not determined by semantics alone. Rather, semantics interacts with some pragmatic processes (what Recanati (2004) calls *modulation*), and they both join forces in establishing logical form. (2012, p. 35<sup>1</sup>)

In particular, Cohen thinks generics are analogous to examples like the following:

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- (60)    a. Cats sometimes clean themselves.  
          b. Sometimes cats clean themselves.
  - (44)    Some cats clean themselves.
  - (61)    a. Good students sometimes answer every question on their exam.  
          b. Sometimes good students answer every question on their exam.
  - (45)    Some good students answer every question on their exam.

It is clear that both insertions of *sometimes* yield distinctly different meanings from (38), (44) and (45). This suggests that the relevant reading of (10a), (22a) and (24) are generic interpretations after all.

(62) I am parked out back.

(63) Noam is in today's newspaper.

In these examples, it is obviously not the literal meaning which is communicated, but rather some reinterpreted meaning. According to Cohen (following Nunberg (1995)), acceptable logical forms for (62) and (63) are pragmatically derived via a process called *predicate transfer*. In (62) for example, ‘the predicate *parked out back* contributes a property of persons, the property they possess in virtue of the locations of their cars’ (1995, p.111), but this cannot be the semantically derived contribution of *parked out back* and so a pragmatic alteration of its contribution to the truth-conditions of what is said is needed — the alteration in these cases is yielded by predicate transfer. Similarly, the predicate *is in today's newspaper* in (63) contributes a property of objects, the property they possess in virtue of there being stories about those objects in today's newspaper.

On Cohen's proposal, generics, like (64) and (65), are cases of predicate transfer.

(64) Tigers are striped.

(65) Mosquitoes are irritating.

(64) and (65) are initially treated as kind-predications, but since the relevant kind-predications don't make sense, predicate transfer applies to make sense of the speaker's utterance.

According to Cohen, the predicates, *striped* and *irritating* in our examples (64) and (65), change their meanings so as to apply to instances of the kind rather than the kind itself, and this is what allows and yields the generic interpretation.

There are at least two big worries in applying the mechanisms of truth-conditional pragmatics to generics.

The first worry is that it is hard to understand why our use of generics would be so ubiquitous in everyday communication, thought, defeasible reasoning, not to mention parental speech and scientific discourse, given that interpreting them is so inefficient or costly. One way to get a sense of just how inefficient interpreting generics on this account could be, consider the following not totally implausible description of the Nunberg cases: One not totally implausible description of the Nunberg cases is that they are instances of category mistakes. A person is the wrong kind of thing to be parked or to be in a newspaper — just as in classic cases of category mistakes, rocks are the wrong kind of thing to predicate sleep of.<sup>17</sup>

But this is to claim that all generic statements/thoughts involve making a category mistake, and given that generics are ubiquitous in our thought and talk, that our thought and talk is rife with mistakes. Further, making mistakes all the time arguably makes for rather inefficient communication and reasoning. This is a very radical view. My characterisation here is obviously not a conclusive consideration against treating generics as category mistakes — it might be that we are making this type of mistake all the time, but it seems nonetheless unlikely.

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<sup>17</sup>Cf. Magidor (2009) for why category mistakes are meaningful.

The point stands even if we don't understand generics as mistakes, but as reinterpretations as Cohen proposes. Mistakes are inefficient and so is having to reinterpret our thoughts and utterances.<sup>18,19</sup>

The second worry for such pragmatically based proposals is that they fail, as far as I can judge, the test put forward by Recanati (2002) for the applicability of such pragmatic processes (what he calls the *optionality criterion*). Recanati's test can be understood from the following quote:

... what characterises genuine [enriched] constituents is the fact that their contextual provision is not mandatory — it is not required in virtue of a linguistic convention governing the use of a particular construction (or class of constructions). In context, it may be that the [enriched] constituent is “required”; but then it is required in virtue of features of the context, not in virtue of linguistic properties of the expression type. A constituent is mandatory in the relevant sense only if in every context such a constituent has to be provided (precisely because the need for completion is not a contextual matter, but a context independent property of the expression type). This, then, is the criterion we must use when testing for (genuine) [enrichment]: Can we imagine a context in which the same words are used normally, and a truth-evaluable statement is made, yet no such constituent is provided? If we can imagine such a context, then the relevant constituent is indeed [enriched]; if we cannot, it is articulated, at some [semantic] level of linguistic analysis. (2002, p.316)

According to the optionality criterion, in order for genericity to be genuinely yielded via the processes of free-enrichment, for any given generic, we must be able to imagine a context in which ‘the same words are used normally, and a truth-evaluable statement is made, yet no such constituent is provided’. For a given generic (choose your favourite one), the test is not easy to implement. All I can do is try to imagine such contexts and report that I fail. I know of no context where these sentences are used ‘normally’, and there is no generic claim made. Any such context will require using the terms in a non-normal way (e.g., metaphorically, ironically or enriched with some other quantifier expression). So I conclude: Generics fail Recanati's test — or there is at least no evidence that they pass it — since free-enrichment is fairly controversial in the first place, the fact that generics fail one of its lead proponent's tests is a serious problem. A generic interpretation is the normal interpretation of the sentences under consideration. Moreover, a generic interpretation is obligatory for these sentences, in all normal circumstances.

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<sup>18</sup>Note that it is the fact that Cohen commits himself to kind-predication and reinterpretation into a quantificational logical form that commits himself to the costly process. There are more plausible stories along truth-conditional pragmatic lines, but these stories I claim would endorse quantificational structure — albeit incomplete quantificational structure.

<sup>19</sup>A further issue is that predicate transfer cases typically give rise to felicitous dialogues like the following:  
(66) A: I'm parked out back.  
B: That's ridiculous; you aren't parked out back, your car is.

But (8) and (9) are infelicitous. This represents a disanalogy between generics as predicate transferred kind predictions and the standard Nunberg cases.

This is just to say that generics as a class just aren't like cases of predicate transfer (i.e., like (62) and (63)). The distribution of cases is very different. A generic interpretation is yielded with a huge variety of sentences and in a huge variety of contexts — for example, all (or nearly all) bare plurals when combined with an individual-level predicate yield a generic interpretation in all (or nearly all) contexts (cf. Chierchia (1995), Kratzer (1995) and Diesing (1992)). By contrast, the interpretations of (62) and (63) are only available with particular sentences under special and localised circumstances. It is the particular context that licenses the use of the sentences (62) and (63). But this is not so with generics.

Both these considerations lead me to the conclusion that even using the resources of truth-conditional pragmatics, a kind-predication logical form for generics is not adequate.

## 4 Defending Gen

What of the forceful objections to a quantificational analysis of generics? How is the *Gen* theorist to respond to these objections? In this section, I'll respond to the three objections in turn.

### 4.1 Objection 1: Linguistic Arguments for Kind-Predication

A number of influential arguments have been adduced with the conclusion that generics are kind-predications. These arguments use linguistic evidence that kind-predications and generics share a logical form, and that the subject-terms of generics directly refer to kinds to argue that generics are a species of kind-predication. Such arguments have been offered most notably by Carlson (1977) and more recently by Liebesman (2011). As a corollary, they claim that the logical form of generics is not quantificational — i.e., that there is no *Gen* in the logical form of generics.

In what follows, I will briefly present the two main arguments of Carlson and Liebesman — the *argument from uniformity* and the *argument from direct reference*. I will then go on to present my replies.

*The Argument from Uniformity:* The primary argument of Carlson and Liebesman<sup>20</sup> is the argument from uniformity. The argument goes roughly like this, according to Liebesman:

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<sup>20</sup>It is worth noting that Liebesman weakens Carlson's original position of uniformity in a way that directly undermines the argument from uniformity. Liebesman endorses an ambiguity view of bare nominals (this is evident from commitments he goes in for on p.425) so that he has a quantificational semantics of existential readings. The problem is that the argument from uniformity applies equally well to the existential readings as it does to the generic readings of the relevant sentences: We have all the same co-occurrence, joint inference and direct reference data with existential readings (cf. Krifka et al. (1995, p.116)). Carlson, on the other hand, was motivated by providing a unambiguous semantics for bare nominals, and provided a non-quantificational semantics to the existential and generic readings of the relevant sentences.

Kind-predications, such as [(6)] and [(7)], 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. [Since] kind-predications have a simple bipartite structure [and given] considerations from uniformity, we can conclude that generics have the same structure. (2011, p.412)

The ‘pressure to give a uniform semantics’ that Liebesman alludes to in the quote, comes from two related linguistic phenomena: the co-occurrence of kind predication and genericity, and the inferences patterns in which kind-predications and generics jointly participate. To illustrate the former phenomenon,<sup>21</sup> consider the following examples involving complex predication (as in (21)) and non-restrictive relative clauses (as in (68)):

- (21) Mosquitoes are widespread and irritating.
- (68) Mosquitoes, who are irritating, are widespread.

The property of being widespread is a property of kinds. As such, the predicate that denotes this property, *widespread*, is said to be kind-selecting. At least *prima facie*, generics do not contain predicates which are kind-selecting, but rather predicates which select for individuals (members of kinds) — for example, the property of being irritating is a property of individual mosquitoes and the predicate *irritating* combines with the bare-plural *mosquitoes* to yield a generic interpretation, as in the generic:

- (67) Mosquitoes are irritating.

What is interesting about (21) and (68) is that they have a co-occurrence of kind-predication and genericity. The problem for the *Gen*-theorist, according to Carlson and Liebesman, is that, on a non-uniform account, the single occurrence of *mosquitoes* must perform two distinct semantic functions: It must contribute a referent for the kind-predication and a domain to restrict the generic generalisation. Since the *Gen*-theorist has to go non-uniform (all theorists agree that widespread is kind-selecting and therefore, generates a kind-predication), then she must give a story about how the single subject, *mosquitoes*, can perform both semantic functions. On the other hand, a uniform account, which the

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<sup>21</sup>To illustrate the latter phenomena, the existence of inference patterns in which kind-predications and generics jointly participate, consider the inference from the kind-predication in (7) and the generic in (67) to (21):

- (7) Mosquitoes are widespread.
- (67) Mosquitoes are irritating.
- (21) Mosquitoes are widespread and irritating.

The inference pattern encompassed by (7), (67) and (21) seems valid: It seems that in general, we can infer from truth of a kind predication and the truth of a generic to the truth of the co-occurrence sentence. The same issue as with co-occurrence arises for the *Gen*-theorist, but perhaps slightly more acutely: The *Gen*-theorist, who is committed to a non-uniform account, needs a story to tell about how to ground the inference without a common semantic element to do so. By contrast, a uniform account needn't provide any such story.

advocate of kind-predication can provide, has a much easier explanation of the phenomena of co-occurrence, since *mosquitoes* only performs the single semantic function. Thus, examples of co-occurrence like (21) and (68), according to Carlson and Liebesman, are evidence that kind-predictions and generics share a semantics and hence, a basic logical form (that of kind-predictions).

The argument from uniformity and the corresponding phenomena of co-occurrence and joint inferences seems to be a genuine challenge for the *Gen*-theorist. But not one that cannot be overcome: I will present a general reply to this sort of data. But first, I will put the *Gen*-theorist in an even worse position by considering Carlson and Liebesman's second argument, the argument from direct reference, and the seemingly problematic linguistic evidence brought out by it.

*The Argument from Direct Reference:* Recall from my introductory remarks that generics come in a variety of syntactic forms. The primary insight of the argument from direct reference exploits this fact by appealing to sentences which appear to express generic contents and nonetheless contain paradigmatically directly referential expressions in subject position. The argument can be motivated by reasons of unity and it goes something like this:

1. Assume for reductio that generics are given a quantificational analysis.
2. Assume further, that we are seeking a unified treatment of the logical form of generics (i.e., the general content expressed by generics comes from a single source).
3. Some generics have paradigmatically directly referential expressions (that refer to kinds) in subject position.
4. Such expressions should not be given a quantificational analysis (they are paradigmatically directly referential after all).
5. Therefore, the *Gen*-theorist must concede that some generics express kind-predictions.
6. But this is a contradiction, since we are seeking a unified treatment of the logical form of generics.

As evidence for premise 3., the advocate of kind-predication invites us to consider sentences like the following which have paradigmatically directly referential expressions in subject position:

(69) This kind of animal is a mammal.

(70) This kind of animal barks.

Examples like (69) and (70) are generic since their predicates typically give rise to generic interpretations when combined with bare plurals — as in, for example:

(71) Dogs are mammals.

(72) Dogs bark.

Moreover, (69) and (70) seem to share the same or relevantly similar truth-conditions of their counterparts (71) and (72) — in the sense that (69) and (71), and (70) and (72) seem to tolerate the same exceptions and require that the same prevalence of dogs possess the predicated property. Thus, (69) and (70) are generics. But the complex demonstrative *this kind of F* is thought by most theorists to be paradigmatically directly referential. And if it refers to anything, it refers to a kind — after all it says so. Thus, since a unified analysis of the logical form of generics is desirable, the subject terms of generics must refer directly to kinds, which leaves no room for quantification, and no room *Gen*.<sup>22,23,24</sup>

*Reply to Objection 1:* How is the *Gen*-theorist — i.e., those that endorse the quantificational analysis — to deal with the argument from uniformity and the argument from direct reference? My reply is that this data is not evidence for the non-presence of quantificational

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<sup>22</sup>Liebesman (2011, pp.417–18) points out that the data also works for simple demonstratives — consider:

(73) This barks. [Demonstrating the kind dog.]

<sup>23</sup>Further evidence for co-occurrence and direct reference comes from examples involving anaphora and the *so-called* construction. Consider the following examples, from Liebesman (2011) and Carlson (1977) respectively:

(74) Mosquitoes are widespread. They're also irritating.

(75) Cardinals are so-called because they are red.

The first sentence in (74) is a genuine case of kind predication by most accounts: The property of being widespread is something that applies to the kind as a whole and not individual mosquitoes. The second sentence is generic for analogous reasons as (21) and (68) are; and the occurrence of *they* is anaphoric on the kind referring subject. Since anaphoric reference is thought to directly pick out the referent of its antecedent (i.e., the kind-denoting bare plural *mosquitoes*, this is evidence that the subject of the second sentence in (74) is kind denoting as well. But (74) is generic, thus we have evidence that the subjects of generics directly refer to kinds, which again leaves no room for quantification and *Gen*.

In the case of (75), the *so-called* construction signals that the bare plural *cardinals* names a kind. As in the case of (74), *they* is thought to be anaphoric on a kind-referring subject. Thus, the kind-predication theorist maintains, the subjects of generics directly refer to kinds, which based on considerations of uniformity precludes a quantificational treatment of their logical form involving *Gen*.

<sup>24</sup>Cf. Wilkinson (1995) for an impressive quantificational semantic implementation of *this kind of F*.

structure — provided it is construed as A-quantificational structure.<sup>25,26</sup> The main insight of the reply is that overt A-quantifiers can occur in all the co-occurrence and direct reference examples put forward by Carlson and Liebesman — observe:

- (77) a. Mosquitoes are widespread and irritating.
- b. Mosquitoes are widespread and generally irritating.
- (78) a. Mosquitoes, who are irritating, are widespread.
- b. Mosquitoes, who are normally irritating, are widespread.
- (79) a. This kind of animal is a mammal.
- b. In general, this kind of animal is a mammal.
- (80) a. This kind of animal barks.
- b. This kind of animal normally barks.

With this data in tow, my argument in reply to the argument from uniformity, the argument from direct reference and this type of linguistic data more generally is as follows:

1. The overt adverbs of quantification as they appear in (77b)-(80b) are not semantically redundant.
2. Overt adverbs of quantification uncontroversially give rise to quantificational structure.
3. The presence of a kind referring expression in (77b)-(80b) is compatible with the presence of an overt adverb of quantification.

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<sup>25</sup>My response is a general reply. But it is worth noting that there are several straightforward solutions that the *Gen*-theorist could appeal to in order to deal with the linguistic data in favour of kind-predication. To consider just one such solution for the co-occurrence data, let us again look at (21) and (68):

- (21) Mosquitoes are widespread and irritating.
- (68) Mosquitoes, who are irritating, are widespread.

One solution for the *Gen*-theorist is claim that there is not a single occurrence of mosquitoes in the logical forms of (21) and (68) since they are both elliptical — i.e., (21) and (68) are, for example, in fact elliptical for (76):

- (76) Mosquitoes are widespread and mosquitoes are irritating.

This seems plausible enough given the intuitive truth-conditions of (21) and (68). But a defence of such solution is not needed given the more general reply I give in this section.

<sup>26</sup>Chierchia (1998) has provided a very elegant and independently motivated account of how expressions, which can act as the subjects of generics, can be given a directly referential semantics, while generics themselves are analysed as quantificational. His account demonstrates that the issue of direct reference to kinds is independent of whether or not generics are quantificational. The account uses the sophisticated machinery of semantic type-shifting (cf. Partee (1991)) to empirically motivate the mechanism Chierchia calls *derived kind-predication*. This mechanism allows a semantics for bare nominals that directly refers to kinds, and also allows generics to contain a quantifier expression *Gen*. I won't elaborate here, I simply note that the argument from direct reference and the corresponding linguistic data needn't pose any dire consequences for the *Gen*-theorist provided she accepts Chierchia's theory (and it turns out to be empirically correct).

4. If an overt adverb of quantification can occur non-redundantly with kind referring expressions, then non-overt ones can too.
5. The presence of a kind referring expression in (77a)-(80a) is compatible with the presence of a non-overt quantifier in the structure of (77a)-(80a). (I.e., a generic reading of (77a)-(80a) does not show the absence of a non-overt adverb of quantification in (77a)-(80a).)

Since the adverbs of quantification in (77b)-(80b) are non-redundant, they have to interact in some way with the corresponding kind referring expression. Call the correct account of that interaction *T* (since the A-quantifiers are non-redundant, we know there is some such *T*, even prior to fully spelling it out). We can assume that whatever *T* is, it will also account for the interaction between the non-overt *Gen* in (77a)-(80a) and the occurrence of the corresponding kind referring expressions in (77a)-(80a).

Thus, the linguistic evidence for kind-predication is compatible with the presence of A-quantificational structure and hence, *Gen* in the logical form of generics.<sup>27</sup> But the kind-predication theorist might insist that his account of the data is still simpler — why think we need *Gen*? The positive arguments in favour of the existence of *Gen* — like the binder argument — tell us why we need it.

#### 4.2 Objection 2: Unpronounced

Perhaps the strongest reason to doubt the existence of *Gen* is that it is never pronounced. Not only is it unpronounced in English, but according to a handful of theorists (cf. Krifka et al. (1995)), it is not pronounced in any natural language. Liebesman (2011) claims that ‘this flies in the face’ of a general principle he calls PRONOUNCED:

PRONOUNCED: If English contains an unpronounced, semantically significant adverb of quantification,<sup>28</sup> then we would expect that some other natural language contains a synonymous adverb of quantification that is, or at least can be, pronounced. (2011, p.415)

Indeed, if this empirical fact about natural languages is true (though I know of no extensive investigation on the issue), then the universal absence of an articulated A-quantifier in generic sentences across languages is striking. It could be a merely accidental feature

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<sup>27</sup>Note that the data in the previous footnotes is also accounted for:

- (81) Normally, this barks. [Demonstrating the kind dog.]
- (82) Mosquitoes are widespread. Generally, they’re also irritating.
- (83) Cardinals are so-called because they are normally red.

Carlson (1977, pp.123-4) was aware of data of this sort and argued for a non-quantificational semantics for A-quantification. Such a view is not generally accepted.

<sup>28</sup>In Liebesman’s original formulation, ‘adverb of quantification’ is ‘operator’. Since the evidence indicates that *Gen* belongs to the category of adverb of quantification, this is a more suitable statement of PRONOUNCED.

of natural languages or it might warrant explanation. However, no more explanation than the universal absence of other expressions which occur in logical form, or so I will argue.

*Reply to Objection 2:* First, note that the principle PRONOUNCED is surely more general: It would be blatantly *ad hoc* to limit its applicability to A-quantifiers or some limited group of expressions. In order to qualify as a principle at all it needs to apply to expressions in general. In other words, PRONOUNCED is merely an instance of the more general principle PRONOUNCED\*:

PRONOUNCED\*: If English contains an unpronounced, semantically significant expression, then we would expect that some other natural language contains a synonymous expression (or phrase) that is, or at least can be, pronounced.

PRONOUNCED\* is false for the simple reason that it has counterexamples. There are notable expressions that are universally absent from surface structure, and are no less ‘semantically significant’ for being so. Some examples are as follows: quantifier domain variables, implicit argument places, *PRO* and existential closure. Further, the fact that there are no synonymous expressions (or phrases) substantiating their existence doesn’t make them any less real.

Domain variables, implicit argument places, *PRO* and existential closure all have the features which are purported to warrant doubting the existence of *Gen*: In each of the languages in which these expressions occur, they are not pronounced. Further, there is no more evidence for an overt expression or phrase which is synonymous with these expressions (which is invariant across contexts of utterance), than there is for *Gen*. Since theorists don’t doubt the existence of such expressions, we have no reason to doubt the existence of *Gen*. PRONOUNCED\* is false.<sup>29</sup>

More generally, many things we find in a fully fleshed out logical form are unpronounced, but they are no less syntactically and semantically significant — for example, they have compositional roles and language wouldn’t work without them. We don’t have any ready explanation for why such bits of logical form are unpronounced — no one really knows, at least at this stage, why they are not.

The proponent of PRONOUNCED\* might respond that expressions like domain variables, *PRO* and existential closure are disanalogous to *Gen* because such expressions are not ‘semantically significant’ in the right way. These expressions differ from *Gen* in some important way. This presents a challenge to the proponent of PRONOUNCED\* to find a way *w* of being semantically significant such that *Gen* is semantically significant in way *w* and domain variables, implicit argument places, *PRO* and existential closure are not. In other words, the proponent of PRONOUNCED\* needs to articulate:

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<sup>29</sup>Indeed, some theorists think that *Gen* and existential closure are tied together as defaults. The former is the default binder in categorical predications and the latter in thetic contexts. See, e.g., Ladusaw (1994).

**PRONOUNCED<sup>\*</sup>**: If English contains an unpronounced expression which is semantically significant in way *w*, then we would expect that some other natural language contains a synonymous expression (or phrase) that is, or at least can be, pronounced.

There might be ways the proponent of PRONOUNCED<sup>\*</sup> can go in spelling out *w*, but these won't be explored here. I will only remark that domain variables, implicit argument places, *PRO* and existential closure are very important to the syntax and semantics of natural language, and no one has a good story about why they are not pronounced.

It is also worth noting that there might be some potential independently motivated explanations of why *Gen* is never pronounced. Leslie (2008, 2007a) offers one such explanation; she proposes a theory of generics on which *Gen* expresses our default mode of generalisation which is invoked in the absence of other modes, and as a result our language does not need a pronounced expression *Gen*.<sup>30</sup>

### 4.3 Objection 3: Intractability

According to Liebesman (2011), our inability to find an adequate semantics for *Gen* gives us reason to think that *Gen* doesn't exist.

I've already mentioned the third reason to believe that *Gen* doesn't exist: it has proven intractable to theorisation. 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 theorising is good grounds for disbelieving in its existence....

*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. 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. (2011, p.416)

Indeed, theorists have been blatantly unsuccessful at finding a semantics for *Gen* that is not subject to systematic counterexamples and is not unreservedly baroque. But this, I claim, is not because *Gen* doesn't exist, but rather because they've taken *Gen* to be the wrong type of expression.

*Reply to Objection 3*: It is hard to find a semantics for *tall*, if you believe that *tall* is a simple predicate that doesn't have an implicit argument place for a standard of tallness and that

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<sup>30</sup>As a final note which I will not discuss in detail, the evidence offered in favour of *Gen* is at least as substantial as the evidence offered in favour of the existence of domain variables, implicit argument places, *PRO* and existential closure, and thus, either we are sceptical of the existence of all such expressions, or we allow that such evidence is enough to establish quantificational structure.

*tall* has a contextually invariant semantics. Similarly, for *knows*: Theorists have been arguing about the proper semantics for *knows*, it seems forever. Some think problems arise because the semantics of *knows* is not invariant across contexts (cf. S. Cohen (1999), DeRose (1992), among others). Another recent examination takes the inadequacies of finding a semantics for *knows* to be a result of incorrectly classing the expression: *Knows* doesn't D-quantifier over possible worlds, but rather A-quantifies over possible worlds (cf. Schaffer and Szabo (2014)). I think analogous assumptions about invariantism and what type of expression *Gen* is, have generated the apparent intractability of generics. The difficulties in finding an adequate theory of generics is a result of trying to find an invariantist semantics for *Gen*, when in fact *Gen* is highly context-sensitive. *Gen* is not like an explicit A-quantifier (e.g., *generally*, *normally*): We can assign (at least in large part) a distinctive and stable meaning to explicit A-quantifiers across contexts of utterance, but I claim, we cannot do that for *Gen* because *Gen* is an indexical. To argue this goes beyond the scope of this paper; in other work I argue that *Gen* is an indexical which expresses different generalisations in different contexts of utterance (cf. Sterken (ms.)). The upshot though is that *Gen* has been intractable to theorisation because theorists have been trying to find an invariantist semantics where there isn't one to be had.

## 5 Conclusion

In sum, this paper has defended the claim that on balance, the data favours a quantificational analysis (with the postulation of *Gen*) over a kind-predication analysis. Moreover, if one endorses covert structure on the basis of the binding argument, then one is committed to endorsing *Gen* as well. That said, there are challenges facing any such account and many of those are not addressed here:

- What is the correct account of the interaction between adverbs of quantification and directly referring expressions?
- What decisive considerations will tell against a kind-predication approach which makes use of the resources of truth-conditional pragmatics?
- Why is *Gen* never pronounced?
- Can we give an adequate indexical semantics for *Gen*?
- What are decisive arguments against a loose talk conception of generics where generics express generalisations, but *Gen* doesn't exist?

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