Abstract: in this paper I develop an account of the logical form of generics in terms of plural logic, and argue that it avoids the costs and preserves the virtues of the other main accounts on the market.

Consider so-called *bare plural generics* such as ‘Cats meow’, ‘Ducks lay eggs’ and ‘Sharks attack bathers’. Why do they strike us as true? There are cats that don’t meow, roughly half the ducks don’t lay eggs, and in fact most sharks don’t attack bathers, so exactly why they are supposed to be true is hard to tell. In order to be true, a plural generic can be neither a universal generalization, which would be too strong, nor an existential generalization, which would be too weak. So, if they are true generalizations of a kind at all, they must be of some kind in between a universal and an existential generalization, but nonetheless they must be a kind of generalization that allows instances that varies in its force of generalization: as we saw above, some are true of only a few instances, others are true of roughly half, and yet others are true of most instances. Can there be such a kind of generalization?

The standard kind of account of generics says yes, by postulating a special kind of operator in the “deeper”, hidden logical form of the generic sentences.¹

¹ See e.g. Cohen (1999) and Leslie (2007, 2008, 2012). For another interesting such account, which inspired the present paper, see Sterken (2013).
This special operator is called *Gen*. Simplifying their predicational structure, the three initial examples then have the following *tripartite* logical form:

1. \( \text{Gen}(x) \left[ \text{Cat}(x) \right] \left[ \text{Meow}(x) \right] \)
2. \( \text{Gen}(x) \left[ \text{Duck}(x) \right] \left[ \text{Lay-eggs}(x) \right] \)
3. \( \text{Gen}(x) \left[ \text{Shark}(x) \right] \left[ \text{Attack-bathers}(x) \right] \)

In general: \( \text{Gen}(x) \left[ R(x) \right] \left[ M(x) \right] \), where \( R \) is a restriction and \( M \) is what’s sometimes called the *matrix*, which is the property attributed to the things in \( R \) picked out by \( \text{Gen} \).\(^2\) \( \text{Gen} \) is thus supposed to represent a kind of generalization that allows the right kind of variation in the force of that generalization, making all three sentences true.

An alternative account of generics, called *The Theory of Simple Generics*,\(^3\) says *no*, by instead postulating that all such bare plural generics have the logical form of a *kind predication*. By again simplifying their predicational structure, the three initial examples then get the following *bipartite* logical form:

1. \( \text{Meow} \left( \text{CATS} \right) \)
2. \( \text{Lay eggs} \left( \text{DUCKS} \right) \)
3. \( \text{Attack bathers} \left( \text{SHARKS} \right) \)

In general: \( P(k) \), where \( P \) is a (possibly complex) predicate and \( k \) is a kind. As opposed to the above standard kind of account, this alternative account thus

\(^2\) The matrix is also sometimes called the *scope.*
denies that there is any kind of generalization involved at all. There is just a subject, namely a kind, and a predicate, holding of that kind.

Clearly, the alternative kind predication account is *logically simpler* than the standard account. But, equally clearly, logical simplicity is not always a virtue. For example, Aristotelian logic is logically simpler than Fregean logic, but what the former gains in simplicity, the latter gains in expressive powers. What we really want, of course, is an account that is both simple and sufficiently powerful.

In what follows, I propose such an account of bare plural generics based on resources from plural logic: arguably, in one sense (which we’ll briefly come back to), it is as simple as the kind predication account, and it has the same expressive powers as the standard account. In general, it seems to avoid the vices and preserve the virtues from each one of these two types of accounts.

Here is the plan: in section 1, I sketch my account; in section 2, I show how it preserves the main virtues and avoids the main vices of the other two accounts; and, finally, in section 3, I briefly compare my account to Koslicki (1999), reply to some anticipated objections, and point to some potential problems for purposes of future research.

**1. The Plural Predication Account**

Let me start by pointing out that it is with a great deal of humility that I propose my account of generics. I propose it not so much in virtue of a conviction that it is true as in virtue of puzzlement as to why it hasn’t been more discussed in the literature. As far as I know, apart from Koslicki (1999), Nickel (2010), a footnote in Liebesman (2011: fn.8), and a brief objection to Koslicki (1999) in
Kleinschmidt and Ross (2013), this kind of view is not very well discussed in the literature. I hope my general formulation and discussion of it in what follows will help generate more discussion of it. After all, it seems to have a lot of the virtues and few vices from the other accounts, so, clearly, it deserves more discussion than it has already gotten.

For what will soon become obvious reasons, I call the account I am about to propose, the *Plural Predication Account* (PPA). PPA rests on (what should be) the uncontroversial logical machinery of *generalized quantification, standard plural logic* and *plural lambda abstraction*. The resources of generalized quantification as well as plural logic has become mainstream, so, to save space, I here simply refer the reader to the great literature on this already out there. Plural lambda abstraction is simply a pluralized version of mainstream (singular) lambda abstraction, all wrapped up into the following axiom:

\[ \lambda xx[\Phi(xx)]aa \leftrightarrow \Phi(aa) \]

where ‘xx’ is a plural variable and ‘aa’ is a plural term. (*Read: aa have the property \( \Phi \) if and only if aa have the property of being xx such that \( \Phi(xx) \).*) Note, importantly, that \( \Phi \) can here be either a *collective* predication or a *distributive* predication.

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4 We’ll get back to these mentionings of the view in section 3 below.
5 On generalized quantification, and for further references on the matter, see in particular Heim & Kratzer (1998), Portner (2005) and Westerståhl (2007). Generalized quantification grew out of Frege’s work (e.g. 1892). For plural logic, and further references on the matter, see in particular Yi (2005, 2006), McKay (2006), and Oliver and Smiley (2013). What I here call *standard* plural logic grew out of Boolos (1985, 1986). The modifier ‘standard’ is meant to indicate that the plural logic is committed to genuine plural quantification, reference and predication, i.e. quantification over, reference to and predication of pluralities, pluralities not to be reduced to sets, or some other kind of singular objects disguised as being something plural.
6 Roughly, \( \Phi(xx) \) is collective iff \( \Phi \) holds of xx, but not of each one of them; \( \Phi \) is distributive iff \( \Phi \) holds of xx and it holds of each one of them. So, for example, while ‘the police officers surround the prisoner’ is collective, since no one of the
With such standard machinery on board, and as before simplifying the predicational structure a bit, PPA gives the following analysis of the three sentences we started out with:

1. \( \lambda xx [Q(y) [y \text{ is one of } xx] [\text{Meows}(y)] ] \text{Cats} \)
2. \( \lambda xx [Q(y) [y \text{ is one of } xx] [\text{Lays eggs}(y)] ] \text{Ducks} \)
3. \( \lambda xx [Q(y) [y \text{ is one of } xx] [\text{Attacks bathers}(y)] ] \text{Sharks} \)

where \( Q \) is the appropriate generalized quantifier, i.e. the generalized quantifier providing the right amount of cats, ducks and sharks in question, for each respective sentence. In general, we have: \( \lambda xx [\Phi(xx)] aa \), where \( \Phi \) is any plural wff, collective or distributive, possibly including a generalized quantifier. Thus, bare plural generics are just bipartite plural predications.

The intuitive idea behind this analysis is that a bare plural generic is just a (possibly complex) one-place predication of a plurality of things. So, ‘Cats meow’ is just a plural predication of cats (of the cats themselves, not the kind CATS, if that kind is something else from the cats themselves), saying something like that they – all of them collectively – have the property such that most of them meow. Likewise, ‘Ducks lay eggs’ is on this account simply a plural predication of ducks saying of them all that a proper amount of them, namely the females, lay eggs; and ‘Sharks attack bathers’ is a plural predication of all sharks saying that some few of them attack bathers. The right amount of individuals in question is police officers surrounds the prisoner by herself, ‘the apples are on the table’ is distributive, since each one of the apples is on the table.
handled by ordinary generalized quantification built into the (possibly complex) plural predicate, not by some special operator \textit{Gen}.

Note that the quantifier \( Q \) in 1-3 is, unlike the operator \textit{Gen}, not one and the same (generalized) quantifier in all cases, but rather a different one from case to case.\(^7\)

Note also that, for example, the predicate ‘meow’ in the generic case ‘Cats meow’ and in the particular case ‘Possum meows’ have different semantic values, namely a complex lambda-property in the former and the ordinary meowing in the latter. Only the former is here claimed to contain quantificational structure, not the latter. (In sentence 1, the latter occurs inside the former.) Consider also the case ‘Possum and Magpie meow’. This latter is a case of ordinary plural predication, and there is here no claim as to such cases containing quantificational structure a la the generic case ‘Cats meow’. There are thus at least three different cases of predicating meowing: singular, ordinary plural and generic. PPA claims only that there is quantificational structure in the generic case, not in the singular or the ordinary plural cases.

It might also prove instructive to compare the cases of ‘Dinosaurs are extinct’ and ‘Mosquitos are widespread’. Both are often seen as kind predication because it is the kind that is extinct or widespread, not any individuals of that kind. According to PPA, both cases are just cases of \textit{plural collective predication}. They are both analyzed in the same way, namely the former as ‘\( \lambda xx[\text{Extinct}(xx)]\text{Dinosaurs}'\) and the latter as “\( \lambda xx[\text{Widespread}(xx)]\text{Mosquitos}'\), where ‘Extinct’ and ‘Widespread’ are collective predicates. PPA thus handles

\(^7\) Whence the difference from case to case? I say in virtue of context, but see section 3 below.
both cases without any appeal to kinds as something other than the individuals themselves.\(^8\)

In the next section, I will further explicate PPA by showing (in no particular order) how it preserves all the main virtues and avoids all the main vices of the other two kinds of accounts on the table; and if that’s right, at least PPA deserves to be on that very same table next to the other two.

2. Keeping the virtues and avoiding the vices

A first virtue of PPA is that it, like the kind predication account, unlike the standard account, only postulates a bipartite structure of subject and predicate, not a tripartite structure involving a special operator $\text{Gen}$.\(^9\) As such, its logical form is simpler than the standard account. For example, according to PPA, the bare plural generic ‘Cats meow’ is simply a one-place predication of a plurality of cats: the plurality of cats – all of them collectively – are such that $Q$-many-of-them meow, where $Q$ is the appropriate generalized quantifier. A corollary of this first virtue is that PPA, like the kind predication account, unlike the standard account,

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\(^8\) One might here worry about how ‘extinct’ can apply to a plurality that doesn’t exist (after all, there are no dinosaurs!). This worry is further discussed in section 3 below. One could of course try this as an analysis: ‘\(\lambda x[\sim \exists y (x=y)]\text{Dinosaurs}\)’ (and maybe even add a temporal modifier as per Koslicki, 1999). But I believe this is an instance of a much more general metaphysical worry faced by everyone, raising more general (even Meinongian) worries, not a specific worry faced only by our analysis of generics in particular. Let me here just add that semantics and metaphysics should ride independently of each other.

\(^9\) Though, of course, maybe that simplicity is counterbalanced by the complicated structure of the lambda-abstract involved.
has a nice explanation of why no known language actually pronounces *Gen*: it doesn’t exist.\textsuperscript{10}

A second virtue of PPA is that it, like the standard account, unlike the kind predication account, keeps the strong intuition that generics involve some kind of generalization. But, unlike the standard account, this kind of generalization is not a special kind of generalization with respect to generics in particular. It is just a good old-fashioned generalization best handled by good old-fashioned generalized quantification, which differs from case to case.

A third virtue of PPA is that it, like kind predication, easily handles conjunctive cases like the following:

4. Mosquitos are widespread
5. Mosquitos are irritating
6. So, Mosquitos are widespread and irritating

Sentence 4 says that mosquitos – all of them collectively – are widespread, while sentence 5 says that mosquitos – but not necessarily all of them collectively – are irritating. Sentence 6 follows from 4 and 5, but while 4 is a kind predication (it’s the kind that is widespread), 5 is a bare plural generic, so, unless something like the kind predication account is true, 6 is a mixture of a kind predication and a generic. That seems less than ideally clean-cut. That the kind predication account

\textsuperscript{10} Though see Leslie (2007, 2008, 2012, 2013) for an interesting explanation of why, according to her version of the standard account, no known language pronounces *Gen*. See section 3 below for the worry that Q is not pronounced either.
is more clean-cut with respect to such conjunctive cases is taken to be one of its main virtues (cf. Liebesman, 2011; Leslie, 2013).

But PPA is equally clean-cut with respect to such cases, so it serves as a main virtue of PPA as well: both 4 and 5 are plural predications of a plurality, and so is 6. The only difference between 4 and 5 is that the force of the generality involved differs, but that is precisely as it should be; after all, mosquitos are collectively widespread, but not equally collectively irritating; after all, some mosquitos are not irritating at all. PPA thus gives something like the following analysis of 4-6:

7. \[ \lambda xx [ \text{Widespread}(xx)] \text{Mosquitos} \]
8. \[ \lambda xx [ Qy[y \text{ is one of xx}][y \text{ is irritating}]] \text{Mosquitos} \]
9. \[ \lambda xx [ \text{Widespread}(xx) \& Qy[y \text{ is one of xx}][y \text{ is irritating}]] \text{Mosquitos} \]

Where ‘Widespread’ is a collective predicate, and Q is the right kind of generalized quantifier; i.e. giving the right amount of mosquitos being irritating. As far as I can tell, this is a very plausible analysis of what is going on in 4-6 above, at least as plausible as that of the other two accounts.

Now, the standard account can also handle such conjunctive cases by postulating a standard kind of type-shift between 4 and 5 (Leslie, 2013). While 4 involves the kind mosquitos, 5 involves the mosquitos themselves, and hence 6 can simply involve a mixture of the two, with the first conjunct being a kind predication and the second conjunct analyzed in terms of Gen. So, as Leslie (2013:19) puts it, such a case “does not pose an especially daunting problem for those who would posit a Gen operator.” I agree; but nonetheless, all else being
equal, it seems to me better not to propose a type-shift than to propose one. PPA, like the kind predication account, does not need to propose one.

A fourth kind of virtue of PPA is that it, unlike the kind predication account, like the standard account, need not postulate kinds as anything other than their instances. Consider ‘Cats meow’ again. According to PPA, there is no kind CATS over and above the cats themselves. Likewise with 4 and 5: there is no kind MOSQUITOS over and above the mosquitos themselves; that’s partly why PPA has such a nice explanation of 4-6, and why there need be no type-shifting. Hence, PPA, unlike the kind predication account, like the standard account, thus needs provide no awkward explanation of how a kind can inherit properties from its instances. Cats – that is, most of the cats themselves – meow; the kind CATS (if there is such a thing), does not meow (as far as we know). As Liebesman (2011) points out, talk about kinds, and how kinds inherit properties from their instances should be left to metaphysicians. I agree; but, all else being equal, it also seems to me that it is better for a theory of generics, or any semantic theory for that matter, to not be committed to such kinds at all, not to mention to be committed to the fact that the kinds need to inherit properties from their instances. PPA, unlike the kind predication account, is free of all such metaphysical commitments.¹¹ That is of course not to say that there are no kinds, period; there might be for independent metaphysical reasons. It’s only to say that generics as such don’t give us a good reason to postulate them.

¹¹ Liebesman (2011:fn8) claims that his kind predication account is fine with treating the kinds as pluralities, but in section 3 of his paper, he nonetheless puts forth a pretty loaded notion of kinds. He also (fn.8) provides what he takes to be two worries with a plural account, which we’ll come back to in section 3 below.
A fifth kind of virtue of PPA is that it, like the standard account, unlike the kind predication account, can handle complex cases of pronouns and variable bindings (Carlson, 1977; Sterken, 2012; Leslie, 2013). Consider the sentence:

10. Cats lick themselves

According to the standard account, 10 has the logical form:

11. \( \text{Gen}(x)[\text{Cat}(x)][x \text{ licks } x] \)

By postulating \( \text{Gen} \), the standard account thus has no problems with accounting for such cases of pronouns and variable bindings. But how is the kind predication account supposed to handle 10? It seems the best it can do is this (Leslie, 2013):

12. \( \lambda x[x \text{ licks } x] \text{Cats} \)

But that is a very awkward analysis, if not just wrong. It would in any case need to be supplemented with a story about how the kind \text{CATS} inherit the property of licking itself from how most of the cats themselves lick themselves (though, for the most part, not each other!). The kind predication account can here either appeal to a metaphysical story about how that is (though I have no idea how such a story could go), or, perhaps, appeal to some kind of type-shifting, like the
standard account does with respect to conjunctive cases such as 4-6 above, but supplemented with the logical resources that PPA relies on.\footnote{12 Leslie (2013) puts forth this criticism of Liebesman’s (2011) kind predication account, but seems to not recognize that Liebesman can appeal to type-shifting, just like she does with respect to conjunctive cases such as 4-6 above, provided he adds more logical resources than what he actually does.}

According to PPA on the other hand, 10 has the logical form:

\[
\lambda x y \in Q y \quad [y \text{ is one of } x] \quad [y \text{ licks } y] \text{Cats}
\]

Hence, like the standard account, there is no problem. The structure generalizes. Consider the following slightly more complicated case from Leslie (2013:9), which the standard account can easily handle, but the kind predication account can not easily handle:

14. Politicians_i think they_i can outsmart their_i opponents

According to PPA, simplifying the predicational structure a bit, 14 has the logical form:

\[
\lambda x y \in Q y \quad [y \text{ is one of } x] \quad [y \text{ thinks } y \text{ can outsmart } y\text{'s opponents}] \text{Politicians}
\]

where Q is the right kind of generalized quantifier.

A sixth kind of virtue of PPA is that it, like the standard account, unlike the kind predication account, can easily handle cases of so-called “donkey anaphora”

13. \[
\lambda x y \in Q y \quad [y \text{ is one of } x] \quad [y \text{ licks } y] \text{Cats}
\]
(Leslie, 2013:9-12). But since such cases are similar to the above cases of pronouns and variable bindings, and it should be pretty obvious how PPA handles them in a similar way, I'll for purposes of space leave this case as an exercise. (*Hint: all the relevant structure is built into the quantificational structure of the plural lambda abstract.)*

A seventh kind of virtue of PPA is that it, like the standard account, unlike the kind predication account, can handle *weak crossover effects.* Consider the following test to reveal whether there is a variable-binding operator in the logical form of a sentence (adopted from Leslie, 2013:12-14):

16. John is loved by his mother

17. His mother loves John

Sentence 17 can be understood as a paraphrase of 16, but this kind of paraphrase is only acceptable when the noun phrase that binds the possessive pronoun does not involve a variable binding operator. This can be seen by considering the contrasting case:

18. Every boy is loved by his mother

19. *His mother loves every boy

Clearly 19 is an unacceptable paraphrase of 18. While 18 is (hopefully) true, 19 is bad. But then, as Leslie (2013:13-14) nicely points out, we have a test by which we can use the kind predication account to make a *prediction,* and thus see whether it holds up against the evidence. Consider the following two sentences:
20. Mostly, boys\textsubscript{i} are loved by their\textsubscript{i} mothers

21. *Mostly, their\textsubscript{i} mothers love boys\textsubscript{i}

Like in the case of 18-19, sentence 21 is clearly not an acceptable paraphrase of 20 (indicating that there is a variable-binding operator involved in the logical form). While 20 is (hopefully) true, 21 is bad. But by simply removing the adverb of quantification in 20, we have a bare plural generic:

22. Boys\textsubscript{i} are loved by their\textsubscript{i} mothers

So, by the kind predication account, there is no quantifier (or variable-binding operator) involved in 22, and hence it predicts that there should be a paraphrase of it in the same kind of way 17 is a paraphrase of 16. But this is not borne out, as can be seen by the following (bad) paraphrase of 22:

23. *Their\textsubscript{i} mothers love boys\textsubscript{i}

So, we have a reason to think that the kind predication account is false, by virtue of it making false predictions. The above test indicates that there is a variable-binding operator involved in 22, but the kind predication account predicts that there is not.

PPA on the other hand, like the standard account, is free of this problem. According to PPA, there are variable-binding operators involved in 22, it’s just
that they are built into the plural predicate ‘loved by their\textsubscript{1} mothers’. According to PPA, simplifying the predicational structure a bit, the logical form of 22 is this:

\[
24. \lambda xx[Q(y)[y \text{ is one of } xx][y \text{ is loved by } y\text{'s mother}]]\text{Boys}
\]

So, PPA, like the standard account, unlike the kind predication account, is in compliance with the above test, and faces no problems with the above weak crossover effects.

Finally, an eighth kind of virtue of PPA is that it can handle certain ambiguously read bare plural generics (Liebesman, 2011; Sterken, 2012:3.2.1-3.2.1.1) better than the kind predication account, and perhaps as well as the standard account (though I’m not sure it fares better than the standard account on this one). The classic example is the following sentence 25, with its two possible generic paraphrases 26 and 27:

\[
25. \text{Typhoons arise in this part of the pacific}
\]

\[
26. \text{Typhoons are such that they arise in this part of the pacific}
\]

\[
27. \text{This part of the pacific is such that typhoons arise in it}
\]

Sentence 25 is ambiguous between (at least) the two different generic readings 26 and 27. In 26, something general is said about typhoons, but in 27 something general is supposedly said about this part of the pacific. According to the standard account, 26-27 then have the following logical forms, respectively:

\[
28. \text{Gen}(x)[\text{Typhoon}(x)][(\text{Arise in this part of the pacific}(x))]
\]
29. Gen(x)[This part of the pacific(x)][Typhoons arise in(x)]

Can PPA do as well? According to PPA, 26-27 might have something like the following logical forms, respectively:

30. λxx[Qy[y is one of xx][Arise in this part of the pacific(y)]]Typhoons
31. λx[∃xx(Typhoons(x) & xx arise in x)]This part of the pacific.

with Q being the right kind of generalized quantifier. (There are also other minor variations on 31 possible.) But it might be objected that 31 does not capture the desired reading of 27 as well as 29 does because whereas 29 says something general about this part of the pacific, 31 seems not to. Sentence 31, as opposed to 27 and 29, just says that this part of the pacific has the property of having some typhoons arise in it; it doesn’t say that it’s a general feature of this part of the pacific that typhoons arise in it. But then again, I’m not sure how big of a problem this is for PPA, or whether it is a problem at all. First, just having the property of having some typhoons arise in it is by itself a general feature of this part of the pacific, as long as we’re talking about several typhoons; and that sense is captured by 31. Second, the supposed missing generality might be a generality due to several typhoons arising in this part of the pacific over time; and that generality over time can easily be added into the plural predicate of 31. Third,  

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13 For example (31*): λx[∃zz(Typhoons(zz) & Qy[y is one of zz][y arise in x])]This part of the pacific; or perhaps (31**): λx[λxx[Qy[y is one of xx][y arise in x]]Typhoons]This part of the pacific. Note that (31**) is interesting to the extent that 27 (also) indicates a generality with respect to typhoons (in the predicate) rather than (just) this part of the pacific (which is its subject).
I’m not sure I hear a generality of this part of the pacific beyond whatever is captured by my first and second points just mentioned. Fourth, to the extent there still is a missing generality to this part of the pacific, and not just due to the above generality over time, but rather some non-accidental kind of generality to this part of the pacific, it might be captured by adding an independent modal operator into the plural predicate in 31 (though presumably not Gen!). This third route takes us over to the sixth problem discussed in section 3 below.

So, though I’m not sure PPA does better than the standard account with respect to 27, it is also not clear to me that it does worse. In any case, PPA seems to handle 27 better than the kind predication account. Liebesman (2011:section 4) contains an extensive discussion of how the kind predication account is to handle 25-27. His solution basically comes down to a defense of the following existential reading of 27:

32. $\exists x (\text{Typhoon}(x) \& \text{Arise in this part of the pacific}(x))$

Apart from Sterken’s (2012:3.2.1.1) convincing critical discussion of Liebesman’s existential reading, I only have two things to add in response to 32. First, if one insists on keeping 32, it seems much better to formulate it in terms of a plural existential reading: $\exists xx (\text{Typhoon}(xx) \& \text{Arise in this part of the pacific}(xx))$ (Read: there are some typhoons arising in this part of the pacific.)$^{14}$ Second, all else being equal, it seems to me that accepting 31 (or something sufficiently close

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$^{14}$ Liebesman’s (2011:427) informal formulation of my 32 sometimes occurs in a plural form, but his formal formulation (his sentence (37)) is in terms of a singular existential quantifier; so is Sterken’s (2013:3.2.1.1) discussion of it.
to it; or even accepting 29) is better than accepting 32, even given the plural existential reading of it just mentioned.

So, with respect to 27, whether or not PPA does better or worse compared to the standard account, PPA does seem to handle it better than the kind predication account. So, it might then in the end be a judgment as to which theory does better overall, not just with respect to 27 in particular.

Summing up, it seems PPA pretty clearly deserves being on the table as a viable candidate analysis of bare plural generics, next to the standard kind of account and the kind predication account. After all, it has most of the main virtue and few of the main vices of the other two accounts; at least so it seems so far.

But, of course, I anticipate some objections, which is the topic of the next and last section.

3. Some objections, replies, and problems

We have so far focused on how PPA avoids the main vices and preserves the main virtues of the standard kind of account and the kind predication account. But, of course, nothing’s perfect, so in this section, I anticipate some objections, and point to some potentially serious problems for purposes of future research. I proceed in what I take to be a roughly increasing order of importance.

But first, let me briefly compare PPA to another (the only?) place in the literature where a fully general analysis of generics in terms of plural logic has been suggested, namely that of Koslicki (1999). The two accounts are of a kind, but
they also differ in some important ways. Unlike Koslicki’s account, PPA is not motivated by nominalism; in fact, I don’t see any good reason to motivate semantics in terms of nominalism, or any other metaphysical worldview for that matter. Arguably, semantics and metaphysics should ride independently of each other. Also, due to recent developments of plural logic, PPA, unlike Koslicki’s account, is freed from any connections to higher-order quantification. But more importantly, Koslicki never suggests the presence of ordinary generalized quantification inside the plural predicates in the way PPA does, and as such lacks the needed resources for empirical adequacy (though it seems her account is compatible with it). Also importantly, Koslicki’s account appeals to Davidsonian paraphrases in terms of events, and to two different levels of analysis, one dealing with logical form and another dealing with lexical knowledge/meaning. PPA stays neutral on both these points.

For purposes of comparison, it is worth noting that Kleinschmidt and Ross’ (2013) objection to Koslicki (1999) is not a problem for PPA. Consider the following kind of sentences (from Kleinschmidt and Ross, 2013):

33. The polar bear has four paws, and so does Chompy

34. The Moonlight Sonata is roughly fifteen minutes long, and so is the time-out I just received

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15 Koslicki’s (1999) paper is original and very interesting; I find it odd that it has not gotten the attention it deserves in the literature. Is it because it was too early for its time? By 1999, plural logic was still new, and had not yet fully matured.

16 There are also terminological differences between the two accounts, also due to recent developments of plural logic.
The problem for Koslicki (1999), according to Kleinschmidt and Ross (2013), is that (in both 33 and 34) she considers the predicate in the first conjunct, but not in the second conjunct, to be higher-order, and the predicate in the second conjunct, but not in the first conjunct, to be first-order. And as such, according to Kleinschmidt and Ross (2013): “it is very hard to make sense of the anaphoric predication in (33). And the same applies to (34)”.

They might be right about Koslicki (1999) (though I’m not sure about that), but it is not a problem for PPA, partly because PPA is not committed to there being a difference between first-order and higher-order predicates here. Here is one suggestion for the correct logical form of 33 (a reading Kleinschmidt & Ross (2013) should accept):

\[ \lambda \mathbf{x}(Q \mathbf{y} \mid \mathbf{y} \text{ is one of } \mathbf{x} \mid \text{Four paws}(\mathbf{y})) \] The polar bears & Four paws(Chompy)

Sentence 35 says simply that (most of) the polar bears have four paws and so does Chompy (i.e. have four paws). That is, the first conjunct says something about the polar bears, while the second conjunct attributes the same to Chompy. Having four paws is not something attributed to the polar bears collectively here, but rather to most of them individually, as well as to Chompy. What is predicated to the polar bears collectively, i.e. of all and only the polar bears, is the plural property of being such that Q-many of them have four paws. So, one and the same property of having four paws occurs in both conjuncts, but the generic predication is a plural predication of a different collective property. So, as far as I can see, sentence 33 is not a problem for PPA as such, and certainly not because
of some difference in first-order and higher-order predicates. And the same applies to 34.

It is perhaps worth noting that there is an alternative to 35, also compatible with PPA. In 33, the clause ‘and so does’ changes the focus from the polar bears being the subject to the property of having four paws, a property which it then in turn ascribes to Chompy. So, if we focus on the property of having four paws as the subject, perhaps we can think of 33 as follows:

36. \( \lambda X[\lambda xx[Qy[y \text{ is one of } xx][X(y)]] \) The polar bears & \( X(\text{Chompy}) \) Four paws

where ‘\( X \)’ ranges over properties. Recall, PPA, unlike Koslicki (1999), is not motivated by nominalism.\(^\text{17}\) And the same applies to 34. So, as far as I can see, whether or not 33 and 34 are problematic for Koslicki (1999), they are not so for PPA, at least not in a way that merits rejecting it as a generally viable account of generics.\(^\text{18}\)

A more detailed comparison of the two accounts must be left for another time; let it suffice to here only point out that they are two accounts of a kind, but with some important differences; perhaps, PPA can be seen as a further


\(^{18}\) Note also that Kleinschmidt & Ross (2013) seems to think of plural predication, or at least the way they interpret Koslicki’s (1999) use of it, differently from my understanding in the present paper (and what I take to be a standard understanding of it today). They say of a plural predicate, what they call a higher-order predicate, that it is “a predicate that applies plurally: it is the sort of thing that can be true not, e.g. of some particular polar bear, but rather of polar bears.” But, according to standard plural logic, a plural predicate is a first-order predicate, and can be predicated of a single individual too. See again Yi (2005, 2006) or Oliver & Smiley (2013).
development, or updating of Koslicki’s account. We now move on to some objections and problems with respect to PPA in particular.¹⁹

First, like Gen, the generalized quantifier Q is unpronounced and hidden in a “deeper” logical form of the sentences in question (cf. sentences 1-3 from section 1). So, what makes Q so importantly different from Gen? Reply: there are at least two important differences. First, while Gen is the name for one and the same variable-binding operator in all cases, Q is just a placeholder for what’s often a different (generalized) quantifier from case to case. As such, all problems of the correct semantic story of Gen disappear, in particular the problem (or mystery) of how it is supposed to be the same kind of generalization in cases with such different force of generality as our initial sentences 1-3 from section 1. Second, while Gen is as far as we know unpronounced in all known languages, Q is in fact often pronounced; in cases where it is not pronounced, it’s just a generalization of a kind of quantifier that is. As such, Q seems less of a radical postulate; it’s just a generalized quantifier that we all already know and love.

Second, what’s the compositional story behind PPA? Reply: the compositional story one gets from unpacking the (possibly) complex lambda-abstract. For example, the simple (non-generic) case of ‘Mosquitos are widespread’ is true iff

¹⁹ Nickel (2010) also suggests an analysis in terms of plural predications, but only with respect to so-called comparative generics (e.g. ‘Girls do better than boys in elementary school’). It’s unclear to what extent the analysis is supposed to generalize beyond such comparatives. Nickel (ms) extends the analysis to conjunctive cases a la 4-6 above, but still, from what I have seen, it’s unclear how general the analysis is supposed to be. I am not at present in a position to give the account in Nickel (ms) full justice, but, in any case, my account is intended to be fully general.
the plurality of all and only the mosquitos have the plural (collective) property of
being widespread. But, for a more complex (generic) case, ‘Cats meow’ is true iff
the plurality of all and only the cats have the property of being such that most of
them meow, where the latter property is expressed by the lambda-abstract
\( \lambda xx[Q(y)\text{y is one of } xx][\text{Meows(y)}] \), whose semantic value is computed from the
semantic values of \( Q \) (i.e. whichever generalized quantifier takes its place in this
case) and ‘meows’ (i.e. the meowing of a singular cat). That’s admittedly a fairly
complex story, and the gain in bipartite simplicity over the tripartite standard
kind of account is perhaps counterbalanced by this added internal complexity;
but, on the other hand, nothing novel or surprising is involved. Overall, the
complexity internal to the plural lambda-abstract is worth the trade.\(^{20}\)

Third, why use lambda-abstraction at all? Why not just drop it, and analyze the
bare plural generics directly in terms of generalized quantification? \textit{Reply}: the
plural lambda-abstraction represents what’s common among all bare plural
generics, what makes them all be of a kind. Bare plural generics say of some kind
of things (i.e. all and only the things themselves!) that they have a certain
distinctive property. That logical and semantic commonality is lost if the plural
lambda-abstraction is dropped. (Consider also dropping the lambda-abstraction
in sentence 9; it’s better not to.)

Fourth, consider what’s usually taken to be kind predications, such as ‘Mosquitos
are widespread’ and ‘Dinosaurs are extinct’. The former can easily be seen as an

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\(^{20}\text{See Nickel (2010) for a suggestion of a compositional story, though with respect to comparative generics.}\)
ordinary collective plural predication of all and only the mosquitos, but the latter cannot as easily be seen as a collective plural predication of all and only the dinosaurs because if it is true, there are no dinosaurs. It is therefore usually taken to be a kind predication; it’s said of the kind DINOSAUR that it is extinct; which is best understood as saying that it has no instances anymore. For want of a uniform account, one might think this poses a problem for PPA: it can handle ‘Mosquitos are widespread’, but not ‘Dinosaurs are extinct’. Reply: there are at least two possible directions in which to look for a solution. First, as said in footnote 8 above, one could try this: ‘∀xx[¬∃yy(xx=yy)]Dinosaurs’ (and maybe add a temporal modifier as per Koslicki, 1999), and then wait and hope for the best solution to the more general problem of empty terms to work out in this case too (appeal to free plural logic?). Second, one might appeal to standard type-shifting as discussed in section 2 above. In the case of ‘Dinosaurs are extinct’, one might then have a type-shift up to the level of the concept of a dinosaur, and hence analyze the sentence as saying that the concept of a dinosaur has no instances. This is in the spirit of the generalized quantification already in play, and it avoids postulating kinds as anything beyond pluralities and concepts (which we arguably are committed to on independent grounds in any case). Note that an appeal to type-shifting in the case of empty terms is not a move away from PPA, towards to the standard account, which also appeals to type-shifting (and in more cases than just in the case of empty terms). The case of truths involving empty terms is a general problem, and type-shifting is a standard move, so I don’t see this as a special problem for PPA.
Fifth, Liebesman (2011:fn.8) proposes two worries with transforming his kind predication account into something like PPA. First, there are generics involving mass nouns (e.g. ‘Water drenches thirst’), which are, according to Liebesman, not easily analyzed as plural predication. Second, consider this case: ‘Dogs aren’t extinct, and they might have been more numerous than they are’. In such cases, the noun ‘Dogs’ cannot be a plural term referring to all the dogs because that plurality cannot have been more numerous than it is. Reply to first worry: the topic of mass nouns, in both metaphysics and semantics, is a thriving research area these days, so only the future can tell whether there will be a fully uniform understanding of generics incorporating both those with plural terms as well as those with mass nouns. But note that there is also a companions in guilt reply in the vicinity here: to the extent that PPA has problems with generics involving mass nouns, a standard account involving Gen has those very same problems too. The fact that the kind predication account seems to have an easier way with it is of no help: it is empirically inadequate on other grounds. So, overall, PPA is no worse off than the others. But with all that said, PPA and the standard account might have a way of handling generics involving mass nouns, though we cannot go into much detail here. They can both treat cases such as ‘Water drenches thirst’ as saying of portions of water that a right amount of those portions drench thirst. For PPA, this gets the form: \( \lambda x x [Qx \mid x \text{ is one of } xx][\text{Drenches-thirst}(x)] \text{Portions-of-water} \), where Q is the generalized quantifier giving the right amount of such portions. Reply to second worry: such cases have nothing to do with bare plural generics in particular. PPA (or even the standard account) is not making the claim that no sentence is better construed as a kind predication.

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21 This is also briefly suggested in Koslicki (1999:455).
than a plural predication. Rather it is making the claim that bare plural generics are best construed as being plural predications. But it is worth noting that even in the case at hand, namely ‘Dogs aren’t extinct, and they could have been more numerous than they are’, it is not obvious that ‘Dogs’ cannot function as a plural term referring to all the actual dogs. On a context-sensitive counterpart-theoretic interpretation of ‘could’ (cf. Lewis, 1986), there are contexts in which it is true that all and only the dogs could have been more numerous than they are; i.e. there are contexts in which the counterpart of all and only the actual dogs include more dogs.

Sixth, how does PPA fare with respect to various issues involving intensionality and modality? While pluralities are extensionally individuated (i.e. two pluralities are identical iff they have all and only the same members), kinds are not. So, as opposed to a kind predication account, PPA seems to face the following problem: suppose it turns out that all and only cats are animals; then from ‘Cats meow’ it follows that ‘Animals meow’, which seems false. The source of the problem is mixed with the fact that generics are non-accidental generalizations; i.e. there is a modal aspect to them. For example, ‘Mosquitos are widespread’ is not a generic like ‘Cats meow’ (at least partly) because the latter is much less accidental (more essential?) than the former. As long as pluralities are purely extensionally individuated it seems PPA cannot handle such intensional and modal aspects of generics. Reply: there are at least two directions in which to look for a solution to this problem. First, one might build in a modal operator into the lambda-abstract. So, for example, ‘Cats meow’ might then be analyzed as: \(\lambda xx[Q(y)[y \text{ is one of } xx][\text{Non-Accidentally-Meows}(y)]]\)Cats, where
‘Non-Accidentally’ is the appropriate modal operator, whatever it is. Second, one might insist on the plural term in a (bare plural) generic referring to all and only some possible things. So, for example, in ‘Cats meow’, the plural term ‘Cats’ refers to all and only possible cats (including the actual ones, of course). In other words, we might insist on individuating the pluralities in generics in terms of possibilia (as well as actuality). Then we have a plausible story as to why it does not follow from the supposed accidental truth ‘All and only cats are animals’ and the generic ‘Cats meow’ that ‘Animals meow’. This solution goes well with (though not committed to) counterpart theory, as also mentioned in a solution to the fifth objection above.

Seventh, unlike Gen (who stays constant, but might differ in its force from case to case), the quantifier Q itself differs from case to case. But that immediately raises what might be the hardest question faced by PPA: whence the difference from case to case? That is, what selects a generalized quantifier from one case to another? Reply: I put my money on some kind of context-sensitivity, but I also say that this is one of the soft spots of PPA in need of more research before PPA is to be trusted.22 Let it here suffice to say that Q deals with the force of generality involved in a (bare plural) generic sentence, and, intuitively, there is some degree of context sensitivity in that respect. Consider ‘Sharks attack bathers’ (3). In a scientific context, the sentence is false due to the weak force of the generality,

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22 Sterken (2013) suggests that Gen is context-sensitive (in fact, even indexical), but still, on her account, there is the one and only Gen in all cases, it’s just that its semantic interpretation is context-sensitive. (See also Sterken, ms.) According to PPA, there is no one and only Q in all cases, only differing in its semantic interpretation. Rather, there are different Q’s across different cases, having nothing more in common than any two arbitrary generalized quantifiers do, if there is a Q at all.
but in the context of seeing a shark on the beach the sentence is true due to the property of attacking batters being a salient property of sharks due to some few of them actually attacking batters. Now, there is of course also a noticeable stability in the force of the generalization of many generics across contexts (that’s partly what makes them seem to be of a kind), but it is also not insensitive to contexts. Whether there is a satisfactory contextual story here to be told, especially whether it can handle potential problems of overgeneration, I must leave for future research to settle. But note that PPA does not necessarily stand or fall with some such contextual story being told; it might be that some other non-contextual story fits better. For example, it would be interesting to consider a possible connection between the selection mechanism for Q and data from cognitive science (cf. Leslie, 2007, 2008, 2012). In any case, I consider this an avenue open for future research.

Eighth, so far only bare plural generics have been discussed, but can PPA handle other kinds of generics, e.g. indefinite and definite generics such as ‘A tiger is striped’ and ‘The cat meows’ (respectively)? Reply: I must here leave this point to future work, but note that, at least on the face of it, it seems the answer is yes. Consider ‘A tiger is striped’. It seems to be saying something like that typically an arbitrary tiger is striped. As such, we can perhaps think of ‘A tiger is striped’ as having the logical form of all tigers having the plural property of being such that typically an arbitrary one of them is striped. But exactly how to cash this out, and how to extend it to the case of the definite generics, I must here leave as another open avenue for future research.
All in all, I conclude: if we take plural logic for granted (which we should on independent grounds anyway), it seems we can use it to provide a straightforward and general interpretation of generics, namely PPA; an interpretation that fares pretty well compared to others. Of course, much more work on PPA needs to be done. For example, a more sophisticated consideration of PPA should separate at least four issues that were not clearly separated above: First: what, if any, is the quantificational force in various generic sentences? Second: is there a special generic operator Gen in the logical form of generics? Third: what is the semantic value of a bare plural in generic sentences? Fourth: what is the compositional semantics of various generic sentences? Logically speaking, these four questions raise four separate issues, and as such they might (though not necessarily) demand separate treatment. The correct account might therefore be much more of a mixture than what I have given the impression of in this paper. But I hope at least that what I have said suffice to show that PPA is a viable candidate for providing the logical form of generics, and quite generally so, worthy of further considerations and discussions, next to, or better, in between the standard account and the kind predication account.23

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