

Leslie on Generics

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Leslie (2007a, 2008) has recently offered a novel and innovative theory of generics which is already receiving much attention.¹ Theorists are compelled by Leslie's treatment of so-called *troublesome generics*, like:

- (1) Mosquitoes carry the West Nile virus.
- (2) Books are paperbacks.
- (3) Birds lay eggs.

(1) is intuitively true despite the fact that only very few mosquitoes (less than 1%) carry the West Nile virus, while (2) is false even though the vast majority of books have paper covers. Still further, (3) is true despite the fact that it is only non-sterile female birds of reproductive age that lay eggs.

These kinds of cases make it hard to specify truth-conditions for generics in terms of some stable quantificational criteria: On the one hand, if we take seriously the number of mosquitoes required to make (1) come out as true, then it seems like (1) is existentially quantified. (2), on the other hand, appears to be universally quantified: It seems like we need a quantity even greater than a majority to guarantee its falsity. At the same time, (3) doesn't pattern with either (1) or (2): (3) seems akin to a *most*-claim. These generics, then, give the appearance that it is very difficult to specify truth-conditions for generics in terms of some stable quantificational criteria.

According to Leslie, this is evidence that the generalisations expressed by generics are more cognitively primitive than those expressed by quantified sentences. The "quirky"

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¹ See, e.g., Haslanger (2011), Sorenson (2012) and Smith (2010).

truth-conditions of generics are due to the fact that they give voice to cognitively primitive generalisations, which are “quirky” because our primitive cognition is itself “quirky”.²

However, in my view, Leslie puts too much weight on these examples. The claim that generics, in general, express cognitively primitive generalisations is, I argue, incorrect.

The four key components of Leslie’s theory, as I understand it, are as follows: First, the mind possesses what Leslie calls a *primitive cognitive mechanism of generalisation*. Second, this primitive cognitive mechanism of generalisation has certain accuracy conditions,³ and these conditions correspond to what Leslie labels the *metaphysical truth-conditions* of generics. Third, the metaphysical truth-conditions of generics are importantly different from their *semantic truth-conditions*: The accuracy conditions of our primitive generalisations encode all the quirks and thus, are quite complex when spelled out in truth-conditional terms. But the semantic truth-conditions of generics, their semantic contents, cannot be complex, otherwise they would not be cognitively primitive. Indeed, if the semantic contents of generics were complex, then they would not be so ubiquitous in our speech and reasoning (especially children’s speech and reasoning). Fourth and finally, generics give voice to primitive generalisations even though their semantic truth-conditions do not encode the quirks, because the unpronounced generic quantifier, *Gen*, is treated as a primitive in the semantics (i.e., as simply disquoted).

In what follows, I will take issue with the claim that generics express cognitively primitive generalisations. It might be that our minds possess a primitive cognitive mechanism of generalisation, but there is little or no connection between this mechanism and the truth-conditions of generics. I will provide three arguments against the claim that generics express cognitively primitive generalisations, and hence against Leslie’s theory.

The paper is structured as follows. I begin by outlining the rudiments of Leslie’s theory. In section 1, I provide two broad classes of counterexample to Leslie’s proposed accuracy conditions (metaphysical truth-conditions). In section 2, I argue against Leslie’s proposal that the generic quantifier, *Gen*, is semantically primitive (i.e., that *Gen* has a disquotational semantics). If *Gen* is not primitive, then Leslie will have difficulty separating her complex metaphysical truth-conditions from the semantic truth-conditions of generics. Further, if they cannot be separated, then Leslie is committed to the claim that generics give voice to primitive generalisations with very complex contents; this is highly undesirable because they are meant to be cognitively primitive. In section 3, I question the evidence for the claim that generics express cognitively primitive generalisations: Do troublesome generics count as genuine evidence for a theory of generics? My answer is that some do and some don’t. Importantly, however, the troublesome generics that don’t count as evidence would be the best evidence for theories like Leslie’s. The gener-

²Our primitive cognition is understood as quirky because it involves cognitive heuristics and biases. In other words, the truth-conditions of cognitively primitive generalisations are dependent on the quirky sensitivities of these cognitive mechanisms.

³Just how to understand the connection between the mechanism and the accuracy conditions is a subtle matter. An anonymous referee suggests that a better interpretation is that certain conditions make the primitive mechanism activate. When the mechanism is triggered, the mind then, *ceteris paribus*, forms a corresponding generic belief.

ics which purportedly express the most quirky or cognitively primitive generalisations do not count as evidence for a theory of generics.

Leslie's Theory of Generics: Many generics seem true when a majority of the members of the kind in question satisfy the predicated property — as exemplified by:

- (4) Tigers have stripes.
- (5) Chairs have four legs.

However, many generics seem to tolerate exceptions in very puzzling ways, such that only very few instances need satisfy the predicated property in order for the generic to come out as intuitively true. Leslie terms such generics *troublesome generics*. She claims that they fall into two broad categories: *Type A* and *type B*. Examples of type A troublesome generics are:

- (6) a. Birds lay eggs.
- b. Bees reproduce.
- c. Peacocks have blue tails.

Examples of type B troublesome generics are:

- (7) a. Mosquitoes carry the West Nile virus.
- b. Sharks attack bathers.
- c. Rottweilers maul children.

Both type A and type B troublesome generics are intuitively true despite only a minority of the kind in question satisfying the predicated property. But their intuitive truth, according to Leslie, is explained in quite different ways: In the case of type A troublesome generics, their intuitive truth stems from our background assumptions and expectations about the *characteristics* of the kind in question along certain *dimensions*, whereas in the case of type B troublesome generics, their intuitive truth stems from the predicated property being some sort of *alarming*, *dangerous* or *striking* (henceforth, I will simply abbreviate using “striking”) property of the kind in question.

Further, whether or not the property in question is *striking* or relevant to fundamental assumptions and expectations about the kind, its *characteristic dimensions*, is according to Leslie derivative upon our *primitive cognitive mechanism of generalisation*. Thus, (1), for instance, is understood as a true generalisation about mosquitoes since carrying the West Nile virus is judged to be a striking property by our primitive mechanism of generalisation and some mosquitoes indeed carry the disease; and (3) is understood as a true generalisation since the property of egg laying is judged to lie along a characteristic dimension of the animal kind — namely, reproduction, and some birds do in fact lay eggs.

The story is somewhat more complicated though since some intuitively false generics such as:

- (8) a. Birds don't lay eggs.
 b. Birds are female.
 c. Books are paperbacks.

would come out true on the account given so far (not laying eggs and being female presumably lie on characteristic dimensions and the majority of books are paperbacks). In order to deal with these, Leslie introduces the distinction between positive and negative alternatives for a property F :

I propose a powerful factor here is whether the counterinstances are positive rather than negative. The distinction I have in mind is as follows: A positive counterinstance to $Ks\ are\ F$ occurs when an instance of the kind K has a concrete alternative property, that is, when it has a positive alternative to the property F , while negative counterinstances occur when an instance simply fails to be F . Whether a counterinstance counts as positive or negative is highly dependent on the property being predicated. (Leslie, 2007b, p.66)

The idea behind this distinction is that negative counterinstances are more likely to be tolerated as exceptions than the positive ones. So, (8a)-(8c) are false since their exceptions have a positive alternative property — namely, laying eggs, being male and being hardcover, respectively. It is important to note that Leslie takes this distinction to be a psychological one, as she does with striking properties and characteristic ones.

Bringing all these observations together, here is Leslie's proposal for the metaphysical truth-conditions for generics:

... the circumstances under which a generic of the form $Ks\ are\ F$ is true are as follows:

The counterinstances are negative, and:

If F lies along a characteristic dimension for the Ks , then some Ks are F , unless K is an artifact or social kind, in which case F is the function or purpose of the kind K ;

If F is striking, then some Ks are F and the others are disposed to be F ;

Otherwise, almost all Ks are F .

(2008, p. 43)

1 Counterexamples to Leslie's Truth-Conditions

In what follows, I argue that the metaphysical truth-conditions Leslie proposes are subject to systematic counterexamples. There are two types of systematic counterexample: One type corresponds to the requirement that the counterinstances are negative and the other type concerns the striking property clause. These correspond to the main places in Leslie's truth-conditions which appeal to (primitive) cognitive factors. I discuss each in turn.

COUNTEREXAMPLE 1 - *Not all counterinstances are negative*: I take (9a)-(9f) to be intuitively true generics.

- (g) a. Birds fly.
b. Mammals give birth to live young.
c. Reptiles lay eggs.
d. Dutch people are tall.
e. Swedes have blond hair.
f. Dobermans have floppy ears.

According to Leslie's truth-conditions, however, each of (ga)-(gf) is false since they each have a positive alternative property and some of the counterinstances satisfy this alternative property: As a matter of fact, some birds, most notably penguins and ostriches, don't fly but have alternative modes of locomotion, walking and swimming, and walking and running, respectively.⁴ Most species of mammal give birth to live young, but platypuses lay eggs. Similarly, some reptiles lay eggs (turtles, tortoises, crocodiles and some snakes and lizards) and others give birth to live offspring (some lizards, chameleons and snakes). Being short is an alternative to being tall and some Dutch people are short. Having brown hair is an alternative to having blond hair and some Swedes do have brown hair. Moreover, (gf) uttered in a context in which the speaker is discussing the biological properties of dobermans, is intuitively true despite the fact that most dobermans have the alternative property of possessing pointy ears.⁵ Thus, it seems, the requirement that all the counterinstances are negative is too strict.

One way to rescue the requirement is to say that the alternative properties that I've suggested are not in fact positive. After all, Leslie's account of positive and negative properties is psychological, and so, it might be that such properties are not psychologically active when considering the kinds in question. For instance, while it is true that penguins walk and swim, and ostriches walk and run, they both also have the property of not flying, so it could be that when one considers the bird kind, the alternative which is psychologically active is merely the property of not flying. Further, if it is the property of not flying which is psychologically active, then Leslie's requirement is fine since the counterinstances simply fail to have the property of flying. Whether or not the alternative properties I've suggested are the ones that are psychologically active, is of course not open to a priori investigation. It is, however, hard to understand what would count as a positive alternative property if the properties I've suggested do not. They are positive according to Leslie's own hypothesis of what psychological features determine what it is to positively lack a property:

I suggest the following hypothesis: in making a generic judgment that *Ks* are *F*, it matters how the non-*F Ks* fail to be *F*. If they fail to be *F* in virtue of having an equally salient, memorable, and striking feature, the generic is unlikely to be judged true. If, however, they fail to be *F* in a nonstriking, uninteresting way (such as merely lacking *F*), then we are far more likely to judge the generic to be true. (2008, p. 36)

⁴There are, in fact, at least forty species of flightless bird living today.

⁵This example is adapted from Nickel (2008).

The experimental studies Leslie appeals to also characterise vividness and concreteness as measures of what counts as positively lacking a property.⁶ If any of these features are measures, then surely the alternative properties I've suggested count as positive: Swimming and running are salient, memorable, striking, vivid and concrete properties for birds to possess. The alternative methods of reproduction of mammals and reptiles that I've suggested are concrete, salient and memorable properties for mammals and reptiles to have. Similarly, the contrasting size and colour categories I've suggested would seem paradigm cases of alternative properties which are concrete and salient. Thus, I take it that the alternative properties in these examples do count as positive.

Perhaps though, Leslie can weaken the condition so that it is not *all* counterinstances, but merely most counterinstances or the typical counterinstances that do not have a positive alternative property. If the condition were weakened somehow, then generics like (9a)-(9f) might satisfy the weakened condition. This plausibly works for (9a), for instance: Baby, injured and many domesticated birds don't fly and arguably, do not have a positive alternative mode of locomotion. Moreover, it might very well be that there are more baby, injured and domesticated birds than there are penguins and ostriches. Thus, weakening the condition to merely most counterinstances not satisfying a positive alternative property might indeed work for cases like (9a). However, it won't work for all the examples: Additional weakening would be needed to account for cases like (9e), here it would perhaps need to be that merely some of the counterinstances are negative since most Swedes have a perceptually salient alternative hair colour.

Moreover, weakening the requirement to the condition that merely some counterinstances are negative is clearly too weak and will make many intuitively false generics come out as true. For example, any generic in which the following holds will come out as true: a majority of the kind satisfies the predicated property and some of the counterinstances are negative. Consider for example:

- (10) a. Humans have Asian citizenship.
- b. Books are paperbacks.

(10a) is intuitively false, but would come out as true since a majority of humans are in fact Asian and there are some negative counterinstances (humans with no citizenship whatsoever); and (10b) is intuitively false and yet would come out as true since a majority of books have paperback covers and there are some books without covers. Thus, it appears that no weakened gloss will work in general. The variability in how many counterinstances have a positive alternative property seems just as bad as the variability Leslie is intending to account for.

Still further evidence that Leslie's requirement is not adequate comes from examples of generics embedded under particles such as *too*, *even* and *only*. For my purposes here, the crucial feature of such expressions is that they express or at least presuppose the truth of their prejacent.⁷ As a simple illustration, consider:

⁶See, e.g., Nisbett and Ross (1980).

⁷Focus-sensitive particles look to alternatives to the focused constituent of the sentence for their interpre-

(11) Tweety lays eggs. [Daisy]_f lays eggs, too.

In the second sentence of (11), the contribution of *too* is to introduce the strong existential presupposition that some specific, salient alternative to Daisy, some salient individual other than Daisy, lays eggs. The sentence also says or at least presupposes that Daisy lays eggs. Similar observations hold for *even* and *only*.

Now consider (12)-(16) below where the prejacent is generics:

- (12) a. [Mammals]_f lay eggs.
b. Birds lay eggs. [Mammals]_f lay eggs, too.
- (13) a. [Philosophers]_f live in America.
b. Lots of intellectuals live in America. Even [philosophers]_f live in America.
- (14) a. [Crime novels]_f are written in Chinese.
b. China is developing a lively literary and publishing scene. Even [crime novels]_f are written in Chinese.
- (15) a. [Bees]_f are sterile.
b. Many insects face reproductive challenges. However, only [bees]_f are sterile.
- (16) a. [Novels]_f are paperbacks.
b. Manuscripts are always paperbacks. [Novels]_f are paperbacks, too.

The interesting thing about these examples is this: First note that (12a)-(16a) are all false — in many of the cases, despite a majority of the kind in question having the predicated property (as a matter of fact, the majority of philosophers live in America, most crime novels are written in Chinese, only the queen bee and a few male bees are capable of reproducing, and only a small percentage of novels are hardcover). Leslie's account correctly predicts this: Each of the predicated properties has a positive alternative property, in Leslie's sense of the term, which some of the counterinstances satisfy. However, when the very same generics are embedded under focus-sensitive particles such as *too*, *even* and *only*, as in (12b)-(16b),⁸ surprisingly, they come out as true since the sentences in question express or presuppose the truth of the prejacent. Leslie's requirement that all counterinstances are negative is not met in (12b)-(16b), in just the way it is not met in (12a)-(16a). Thus, Leslie has no explanation of a difference in truth-value: Whether a generic is embedded or unembedded has no bearing on the determination of its positive

tation. See, e.g., Rooth (1985) and Beaver and Clark (2008). The alternatives appealed to in the semantics of focus-sensitive particles are not the same as the psychologically based alternatives in Leslie's theory — they are distinct notions which are attempting to explain distinct phenomena. The fact that *too*, *even* and *only* are focus-sensitive is not crucial to the counterexamples.

⁸The most notable discussions of the interaction of focus-sensitive particles with generics can be found in von Stechow (1997) and Cohen (2003). In the latter, Cohen uses examples such as these to argue that generics and habituais can have what he calls *quasi-existential* readings. As Cohen's explanation of such cases appeals crucially to quantifier domain restriction, Cohen's explanation is not available to Leslie: Leslie (2007a, 2008) denies that generics contextually restrict their domains, as quantified sentences do.

alternative properties. The psychological factors Leslie considers, such as the perceptual strikingness of properties or how memorable a property is, do not change and hence, the embedded generic is still false on Leslie's account. I conclude that these cases pose an additional challenge to Leslie.

COUNTEREXAMPLE 2 - *Striking property generics*: According to Leslie, the truth-conditions for generics like (7a)-(7c), the type B troublesome generics, are as follows:

Ks are F is true if:

- (i) the counterinstances (if any) are negative and;
- (ii) if *F* is striking, then some *Ks* are *F* and the others are (typically) disposed to be *F*.

The most pressing problem for Leslie is that there are cases in which all the conditions specified are satisfied and yet the generic comes out as false. Consider, the following cases which satisfy the conditions outlined above and yet we judge them as false in normal contexts:

(17) Humans kill themselves.

(18) Homeowners start fires at night.

I take it when (17) and (18) are uttered on their own, they are not intuitively true.⁹ Yet killing themselves and starting fires at night are quite striking properties for human beings and homeowners to possess, respectively. Moreover, the counterinstances — i.e., the humans and homeowners who don't satisfy the predicated property — are appropriately negative. That is, there is no perceptually salient or striking alternative property which the non-suicidal humans and non-pyro homeowners satisfy. Thus, it seems, at least at first blush, that Leslie's conditions are satisfied, making (17) and (18) true even though they are intuitively false.

Perhaps, though, the falsity of (17) and (18) stems from the disposition clause of her conditions. Leslie suggests that our primitive cognitive mechanism of generalisation:

... looks for a good predictor of the property in question; it avoids generalising to overly broad kinds, or to irrelevant kinds. In particular, for a kind to be the locus of a striking property generalisation, it seems that the members of the kind that lack the property must at least be disposed to have it. It is important, for example, that the virus-free mosquitoes be capable of carrying the virus. If there is no such shared disposition, the generalisation is not made. (2007a, p.385)

⁹Given the right context, they can come out as intuitively true — for example, consider:

- (19) A: What surprising things do humans do?
B: Humans kill themselves.

However, these are not the right sort of contexts for Leslie since the inquiry masks the strikingness. Any context-sensitivity arising must be accounted for by Leslie by appeal the contextual aspects of the psychological features she appeals to.

In sum, Leslie says that the kind should be a good predictor of the property in question and that members of the kind that don't have the property should be disposed to have it. Are humans and homeowners good predictors of the property? Are the relevant disposition attributions true? Amongst living creatures, humans are the best predictor of the property killing themselves — in fact, other animals rarely, if ever, do so.

Perhaps amongst humans, there is a subclass which serves as a better predictor — for example, depressed people or deeply troubled people. However, the corresponding generics are also not intuitively true in normal contexts:

(20) Depressed people kill themselves.

(21) Deeply troubled people kill themselves.

Similar arguments hold for (18). Thus, I take it that these examples satisfy the requirement of being a good predictor. What about the disposition requirement?

In what sense are mosquitoes disposed to carry the West Nile virus or sharks disposed to attack bathers? Leslie must construe the disposition condition in an extremely weak way: In no substantive way are all mosquitoes disposed to carry the West Nile virus or all sharks disposed to attack bathers. There are conditions under which they will (e.g., when they are hungry, scared, confused and mistake a swimmer for something fish-like), but there are also such weak conditions under which humans will kill themselves and homeowners will start fires at night.

To get a sense of just how weak the disposition clause must be, consider the following intuitively true striking property generics:

(22) Insects carry disease.

(23) Chemicals are dangerous.

The striking properties in (22) and (23) are predicated of a broad kind (a superkind). On the most salient readings of (22) and (23), the generalisations are over individual insects and individual chemicals, irrespective of subkind, predicating that they have the striking property of carrying disease and being dangerous respectively. (22) and (23) are intuitively true and yet on a strict reading of Leslie's disposition clause they are false since not all insects share the relevant disposition of carrying disease and not all chemicals share the relevant disposition to be dangerous.

Perhaps, though, (22) and (23) could come as true if the disposition clause is construed as so weak that even lady-bugs turn out to be disposed to carry disease, and the chemical structure of orange juice is disposed to be dangerous. But if Leslie does go this route, then it becomes impossible for her to account for the falsity of cases like (17) and (18) on the basis of the disposition clause. There are weak conditions under which deeply depressed people will kill themselves and homeowners will start fires at night. Moreover, if there weren't such conditions, then it would be impossible for cases like (17) and (18) to be striking or dangerous properties for the kind to possess. Thus, I take it that the

disposition clause is not doing the work Leslie wants it to be doing. Examples (17) and (18) are counterexamples to her proposed sufficiency conditions.

A further class of examples questions the connection between the requirement that all counterinstances be negative and the striking property clause. In these cases, the striking property is a negative property and yet it is still possible for them to come out as intuitively true — consider:

(24) Doctors don't wash their hands.

(25) Heroin users don't sterilise their needles.

In discussions of hospital practices, (24) is a common and alarming generic claim:

Every year, two million Americans pick up infections while they are in hospitals being treated for something else. Those infections kill more than 80,000 people every year. That's more than will die of breast cancer, AIDS and car accidents. Most of those deaths can be prevented — by simple hand washing. An investigation found that doctors often walk past sanitising stations even while going from patient to patient. Dr. John Smith — the infection control expert at the University Health Network — says **doctors don't wash their hands, they are even less likely than nurses and surgeons to do so, risking the health of patients — many clean their hands only 10-20 percent of the time.**

In such contexts, (24) is intuitively true. Similarly, (25) is an alarming claim in discussions of disease and fatality resulting from drug abuse. Cases like (24) and (25) pose difficulties for the requirement that the counterinstances are negative for striking property generics. It is also hard to see how the disposition clause applies — are doctors disposed to not wash their hands? Is being a doctor a good predictor of non-hand washing?

A final class of examples shows that it is very hard for Leslie to specify how the disposition clause will draw the line between (7a)-(7c) and outwardly false prejudicial generalisations like (26)-(27) below:

(26) Muslims are terrorists.

(27) Homosexuals carry the HIV virus.

Contrasting (7a) and (27) is particularly telling: If virus-carrying is dispositional for mosquitoes or insects, then why not for homosexuals or humans?

As Leslie (2013b) points out, understanding dispositional mechanisms is very hard, and requires a great deal of empirical knowledge that is not obvious or immediately available. Leslie might bite the bullet and claim that (7a)-(7c) are false in the same way (26)-(27) are, but then she loses a great deal of the evidence for her psychologically based theory — plausibly the best evidence for a psychologically based theory. In section 3, I will argue for just this — what would be the best evidence that generics express cognitively primitive generalisations is not evidence at all. Type B troublesome generics are simply mistaken generalisations — they are mistaken in a similar manner to how prejudicial generalisations are mistaken. Before doing this however, I will provide objections to Leslie's disquotational treatment of generics.

2 Gen as Primitive

Asher (2006) notes the following problem with treating *Gen* disquotationally:

The *Gen* operator isn't doing any work at all. This is the problem with this disquotational approach as it stands. Without an analysis of the *Gen* operator, no valid inferences or validities follow from the accounts, unless the generic operator receives some sort of analysis in the metalanguage. This is not satisfactory... for the analysis of the generic binding operator... (Asher, 2006)

Leslie (2007a) is unmoved by Asher's objection, dismissing the idea that there are any genuinely valid inferences or validities involving generics. This might be so, but there are other consequences of not giving *Gen* an analysis in the metalanguage. Without an analysis of *Gen*, no linguistic context-sensitivity associated with *Gen* can be predicted. A disquotational analysis can predict linguistic context-sensitivity associated with the noun-phrase or predicate, but it cannot predict any linguistically encoded context-sensitivity which is attributable to *Gen*. The trouble is that generics do display context-sensitivity which is attributable to *Gen*, or so I will argue. To this end, consider the following cases:

CASE 1: An excellent case arguing for the context-sensitivity of *Gen* is from Nickel (2008):¹⁰

Consider [(28)].

(28) Dobermans have floppy ears.

The important fact about dobermans is that they are born with floppy ears that breeders then cut to given them the pointy shape we are familiar with. In the context of evolutionary biology, [(28)] is true. The text [(29)] certainly sounds acceptable.

(29) Some breeds of dogs have evolved to focus on their hearing. These breeds have pointy ears. Dobermans, however, mostly rely on their sense of smell, which is why Dobermans have floppy ears.

However, in the context of a discussion of dog breeding, [(28)] seems clearly false, as the text [(30)] illustrates.

(30) While Labradors and golden retrievers have floppy ears, dobermans don't. Dobermans have pointy ears.

(2008, p.644)

Nickel's argument is familiar from other places in which the context-sensitivity of a given expression is argued for. The same sentence is uttered in different contexts and it is claimed that the truth-conditions differ. Nickel describes the two contexts as "the context of evolutionary biology" and "the context of a discussion of dog breeding". The truth-conditions of (28) vary between these contexts, and thus, (28) is context-sensitive.

CASE 2: As a second case, consider (31):

¹⁰Cavedon and Glasbey (1994, 1996) provide a few additional good cases.

(31) Frenchmen eat horse meat.

It is often noted that when the distinctive properties¹¹ of the French population are salient, (31) sounds intuitively true.¹² In such a context, (31) seems to express a generalisation along the lines of:

(32) It is a distinctive of many traditional French people that they eat horse meat.

Whereas, in a context where a group of nutritionists is querying the unhealthy eating patterns of the French population, (31) seems intuitively false:

(33) Frenchmen eat croissants and baguettes. They don't eat traditional food, like horse meat and grains.

In such a context, the negation of (31) seems to express something along the lines of (34):

(34) Generally, Frenchmen don't eat horse meat.

Again, the generic (31) seems to vary its truth-conditions across contexts of utterance.

These are just two cases, but it is not hard to come up with more.

The two cases indicate that generic sentences are plausibly context-sensitive. But context-sensitivity is only incompatible with disquotation if the source of the context-sensitivity is *Gen*. There is good reason to think that the context-sensitivity at issue is attributable to *Gen*: There doesn't seem to be any readily available Gricean explanation of the context-sensitivity and moreover, it is possible to eliminate alternative expressions in the logical form of generics (e.g., quantifier domain restriction, the noun phrase or predicate) as responsible for the differences in truth-value. What I call the *A-Quantifier Test* provides evidence of this:

A-QUANTIFIER TEST: Check whether sentences involving explicit adverbs of quantifications (A-quantifiers) vary their truth-value across the given contexts. If there is no difference in truth-value, then the alternative sources are not responsible for the contextual variability.

Here is why the test is a good indicator: Leslie takes the logical form of generics to be that of A-quantified sentences. Thus, if some expression, aside from *Gen*, in the logical form of the generics in CASES 1-2 were responsible for the difference in truth-value, then we would expect the truth-value of explicitly quantified sentences involving the same expressions to

¹¹Perhaps distinctive properties is not strictly speaking correct. Norwegians and other cultures eat horse meat. As such, we might be better off with characteristic properties.

¹²See Krifka et al. (1995, pp.81-3)

vary in truth-value across the given contexts. It is important of course to pick A-quantifiers which are as close as possible in meaning to *Gen* — e.g., *typically*, *generally* and *normally*.¹³

I grant, that this test is not full-proof: there could, of course, be lexical reasons for differences in truth-value across contexts. Moreover, robust intuitions are hard for A-quantified utterances, in part because their interpretations are quite flexible. Nonetheless, the test is useful and does provide at least some objective means for testing the claim that generics exhibit additional variability over and above explicitly A-quantified sentences — context-sensitivity which is plausibly attributable to *Gen*. I apply the test to CASE 1 and CASE 2 in turn:

CASE 1: Let's try the texts from CASE 1 with several different explicit A-quantifiers, using the same two contexts given in the case:

- (35) a. Typically dobermans have floppy ears.
b. Generally, dobermans have floppy ears.
c. Normally dobermans have floppy ears.
- (36) Some breeds of dogs have evolved to focus on their hearing. These breeds have pointy ears. Dobermans, however, mostly rely on their sense of smell, which is why typically / generally / normally dobermans have floppy ears.
- (37) While Labradors and golden retrievers have floppy ears, typically / generally / normally dobermans don't have floppy ears. Typically / Generally / Normally dobermans have pointy ears.

There is no difference in intuitive truth-value for each of the A-quantified sentences in (35) in the two contexts given by (36) and (37): In both contexts, my informants hear (35a)-(35c) as false. This is evidence that the difference in truth-value for the generic, (28), between the two contexts is not a result other features of the context or the preceding text in (36) and (37). If any of these were causing the contextual variability at issue, then they would, presumably, be causing contextual variability for (35a)-(35c), but they do not, thus we can conclude that there is a distinctive type of contextual variability which is exhibited by (28).

CASE 2: Again, the test provides the result we want: Consider *typically* / *normally* / *generally*, *Frenchmen eat horse meat*, utterances of this sentence are arguably false in both contexts.

In both cases, the A-QUANTIFIER TEST is passed and so there is evidence that context-sensitivity is attributable to *Gen*.

Leslie's disquotational account provides no explanation of the context-sensitivity of *Gen*. Disquotation is Leslie's tool for separating her complex metaphysical truth-conditions from the semantic truth-conditions of generics. Without disquotation, it is unclear how

¹³Krifka et al. (1995, p. 9), for example, take such A-quantifiers to be close in meaning to *Gen*.

Leslie can achieve her goal of providing simple truth-conditional content for generics while claiming that they express primitive generalisations with complex accuracy conditions.

There are two proposals I can offer on behalf of Leslie, as alternatives to disquotation: The first proposal is that she might abandon *Gen* altogether, and the second is that she might treat *Gen* as a context-sensitive expression. Both, I will argue, are undesirable from the point of view of Leslie's theory.

First, she could abandon *Gen*. There are two ways to abandon *Gen*. One could follow Carlson (1977) and Liebesman (2011), and claim that generics are kind-predications. Alternatively, one could claim that generics have an incomplete tripartite logical form, consisting simply of a restrictor and a scope. On the latter proposal, generics would not express generalisations, but merely communicate them by pragmatic means.¹⁴ Neither option is good for Leslie. One primary reason Leslie would not want to claim that generics are kind-predications or incomplete tripartite structure is because she needs them to give voice to primitive generalisations, but kind-predications do not give voice to generalisations at all, and incomplete tripartite structures merely communicate, but do not express, generalisations. Another reason is that Leslie (2013a) explicitly argues against the kind-predication view and in so doing provides an argument against treating generics as incomplete tripartite structures. Leslie (2013a) argues that variables that are free in the restrictor and scope of generics are bound. Such an argument tells against an incomplete tripartite structure view since binding is a linguistic relation which involves an expression which does the binding, *Gen*.¹⁵ A further worry about the sort of pragmatic approach which accompanies the incomplete tripartite structure view is that, as it stands, generics give voice to a relatively restricted set of generalisations according to Leslie — striking property (type B) generalisations, characteristic property (type A) generalisations, and majority based generalisations. However, it is far from clear how to motivate a pragmatic account which is suitably restricted, such accounts are characteristically unconstrained.

The second type of proposal takes it that *Gen* exists, but that *Gen* is a context-sensitive expression. Leslie might abandon disquotation in favour of a view on which *Gen* is akin to an indexical, for instance.¹⁶ Indexicals can have complex Kaplanian characters, but importantly, the character is not part of the truth-conditional content, it only determines truth-conditional content. Leslie, then, might take her metaphysical truth-conditions and somehow covert them into a Kaplanian character for *Gen*. In other words, Leslie could treat *Gen* as having a Kaplanian character which mimics as closely as possible her metaphysical truth-conditions, only relativized to contexts. On this proposal, *Gen* would express one of the primitive generalisations in Leslie's accuracy conditions, a striking property or type B generalisation, say, in some contexts, a characteristic or type A gen-

¹⁴One theory of generics along these lines can be found in Declerck (1986). There are various authors who promote pragmatic mechanisms which Leslie might exploit — see, e.g., Recanati (2002), Carston (2000) and Sperber and Wilson (1995). According to such views, the generalisations communicated might be unarticulated constituents or freely enriched as part of the content of the generic utterance.

¹⁵For an analogous argument, see Stanley and Szabo (2000).

¹⁶Sterken (ms.) provides independent arguments that *Gen* is an indexical.

eralisation in some contexts, and a majority based generalisation in other contexts. The complex bits of the metaphysical truth-conditions, then, would only *determine* the semantic truth-conditions of generics, but would not be part of the semantic truth-conditions.

Of course, a trouble with this proposal is that the metaphysical truth-conditions are subject to numerous systematic counterexamples (as I argued in section 1). It is not hard to see that these counterexamples will carry forward to the foregoing proposal.

Even granted that Leslie could clean up the metaphysical truth-conditions, there are still at least two troubles with this sort of view.

The first trouble is that it is unclear that Leslie would want to allow that a single generic can express different primitive generalisations in different contexts. One driving force of Leslie's theory is that generics express our most basic, default generalisations about a kind, that we are hesitant to give up in light of new and conflicting evidence. Thus, in a substantive sense, the primitive generalisations expressed by generics on Leslie's account are quite coarse and stable over time, and across different contexts. However, on a view which treats *Gen* as an indexical, a single generic, say *Mosquitoes carry the West Nile virus* or *Birds lay eggs*, would be able to express a striking property generalisation in one context and a characteristic property generalisation in another.¹⁷

A further trouble, of a more general sort with a Leslie style view of the character of *Gen*, as I see it, is that given the types of primitive cognitive features Leslie appeals to, there is nothing stopping these primitive cognitive features from having content-determining roles across the board — for a range of indexicals in natural language (e.g., all or most covert or context-sensitive vocabulary). Semanticists and even radical contextualists don't generally think that cognitive biases of the sort Leslie appeals to play a role in content-determination (or metasemantics). It is quite a controversial thesis. Without arguments and evidence to substantiate or block this apparent theoretical consequence of treating *Gen* as an indexical with a cognitively primitive character, I don't see how Leslie can use this alternative to disquotation.¹⁸

3 Generics and Cognitively Primitive Generalisations

Leslie takes type B generics like the following as evidence that generics express cognitively primitive generalisations:

- (38) a. Mosquitoes carry the West Nile virus.
b. Sharks attack bathers.
c. Rottweilers maul children.

¹⁷Thanks to an anonymous referee for this journal for help with this point.

¹⁸Further, one could add that given that Leslie is committed to cognitive biases playing a content-determining role, why think there is anything domain-specific going on — that is, why think there is a dedicated mechanism, the primitive cognitive mechanism of generalisation — which is specifically responsible for playing the content-determining role for generics? It seems more plausible given the foregoing that if cognitive heuristics and biases play a content-determining role, then they do so domain-generally — drawing on a variety of cognitive mechanisms.

I disagree: (38a)-(38c) do not express primitive generalisations. Rather when we intuit generics like (38a)-(38c) as true, we are making a mistake. Our primitive cognition (e.g., the cognitive heuristics and biases Leslie appeals to) are causing us to make mistakes. This means that intuitions about the truth and falsity of cases like (38a)-(38c) should not be taken at face value. It should not be a condition on a theory of genericity that it makes generics like (38a)-(38c) come out as true. We might have intuitions to the effect that they are, but these intuitions are mistaken.

Below I present two arguments in favour of the view that generics like (38a)-(38c) are in fact false — i.e., they do not express primitive generalisations as Leslie claims. An error-theory for type B troublesome generics serves as a vindication of the cognitive features Leslie appeals to, while at the same time not forcing any drastic claims about the truth-conditions of generics or the nature of genericity. It allows the type B troublesome generics to be set aside: They are not genuine data for a theory of generics. Further, an error-theory for generics like (38a)-(38c) takes seriously one key property which sets them apart from other generics. When one comes across (38a)-(38c), one has the initial reaction that they are somehow *unfair* or *unreasonable* generalisations. This reaction should not be ignored.

3.1 Evidence 1: Contradictory Conjunctions

Consider the following paradoxical sounding sentences:

- (39) a. Mosquitoes carry the West Nile virus, but typically they don't.
b. Typically mosquitoes don't carry the West Nile virus, but mosquitoes carry the West Nile virus.
- (40) a. Sharks attack bathers, but generally they don't.
b. Generally sharks don't attack bathers, but sharks attack bathers.
- (41) a. Rottweilers maul children, but normally they don't.
b. Normally rottweilers don't maul children, but rottweilers maul children.

(39)-(41) sound contradictory or at least bad, but according to Leslie, (39)-(41) could turn out as true since she is committed to both conjuncts in each case being true.

How can we explain the apparent falsity of (39)-(41)? The most obvious explanation is simply to say that the first conjunct of (39a) is close in meaning to that of the negation of the second conjunct, and so their conjunction is false in the relevant contexts. Our initial reaction is that the first conjunct of (39a) is true, but this initial reaction is a mistake. Cases like (39)-(41) make the falsity of (38a)-(38c) clear to us.

The point above can be made more precise in several ways — and I won't choose between the possible elaborations here. I will simply note, first, that what I say is compatible with treating the first conjunct of (39)-(41) as close in meaning to *It's not the case that generally sharks don't attack bathers*, and also close in meaning to *Generally sharks attack bathers*. Either way would predict the paradoxical feeling (though, note that the former

might be consistent with *It's not the case that generally sharks attack bathers*). Second, I should note that I have used the vague expression “close in meaning” but there are alternatives. A more radical option is to say that the first conjunct entails the negation of the second. The first conjunct could be stronger, and so not close in meaning to the first conjunct. The paradoxical feeling is still explained.

One might worry that the conjunction test I rely on above shows too much. Consider for instance:

- (42) a. Ravens are black, but some aren't.
 b. Some ravens are white, but ravens are black.
 c. Ravens are black, but sometimes they're not.
- (43) a. Mosquitoes carry the West Nile virus. Rarely, but they do.
 b. Mosquitoes carry the West Nile virus, even though most don't.

(42) and (43) bring up different issues, so I will discuss each in turn. Some of my informants claim that (42a)-(42c) sound bad, maybe in a way analogous to how (39)-(41) do. But I do not think that they sound equally bad or even bad in a similar way (i.e., a contradictory way). It is, for example, fine to say:

- (44) Ravens are black, but there are a few exceptions.

If we are fine with (44), then we should be fine with (42a)-(42c) as well. Further, if one insists on hearing some infelicity in (42a)-(42c), then I claim that this is due to a tension in the relevance of the *some*-claim or the domains being talked about.

Still further, in the event that one accepts that the (42) sentences are not fine, there is a response for those advocating a strong interpretation: Recall that we noted above that it could be that *Sharks attack bathers* is stronger than *It's not the case that generally sharks don't attack bathers*. If one makes this move, then the corresponding argument in the case of (42) would conclude that *Ravens are black* entails *It's not the case that some ravens aren't black* — i.e., *All ravens are black*. Paired with a domain-restriction on *all* (and *some*), this is better than concluding that *Ravens are black* is as weak as an existential, as would be the case on the wide-scope reading of the second conjuncts in (42).¹⁹ Thus, I contend, the conjunctions in (42) do not entail that generics are close in meaning to existentially-quantified sentences.

Other troubles for the conjunction test arise with (43a) and (43b): (43a) and (43b) sound relatively fine, but this makes it seem like the existentially-quantified readings of (38a)-(38c) are legitimate (and perhaps also, that a wide-scope reading of the negations of the second conjuncts in (42) and the bad readings of (42) are indeed possible). Though, (43a) and (43b) are compatible with an existentially-quantified reading

¹⁹A further explanation of the contradictory feeling associated with (42c) is that (42c) is indeed contradictory on a strong interpretation. If (42c) is read such that *they* is anaphoric on the kind *ravens* and *sometimes* quantifies over situations or events in which the first conjunct is true, then one should hear a contradiction on the strong interpretation.

of *Mosquitoes carry the West Nile virus*, they are also compatible with a strong reading as well: (43a), I contend, is what Cohen (2003) calls a *quasi-existential* reading which he argues is consistent with a strong interpretation. I can hear (43b) acceptable is if the generic is given a capacity reading²⁰ which is consistent with a strong interpretation, though due to the presence of the expression *even though*, it may plausibly be taken as a quasi-existential reading as well.

3.2 Evidence 2: Disagreement and Retraction

Some further evidence that we should not trust our initial reaction to generics like (38a)-(38c) comes from examples involving disagreement and retraction. Consider:

- (45) A: Let's stay inside. Mosquitoes are out there and they carry the West Nile.
B: That's ridiculous. Almost none of them do.
- (46) A: Sharks attack bathers.
B: No, they almost never do.
- (47) A: Rottweilers maul children.
B: Don't be silly. There have only been a few isolated incidences.

The dialogues in (45)-(47) sound like genuine disagreements. In (45), for example, speaker B believes that the fact that almost no mosquitoes carry the West Nile is good reason for her to disagree with A's assertion of *Mosquitoes carry the West Nile virus*. If (45)-(47) are indeed genuine disagreements, then we have evidence that the generics (38a)-(38c) cannot be true when speaker B's assertions — that almost no mosquitoes carry the West Nile, that sharks almost never attack bathers and that there have only been a few isolated incidents of rottweilers mauling children — are true. Since B's assertions are true, we have evidence that (38a)-(38c) are false.

These observations are further strengthened by the way one would expect speaker A to retract. In examples like (45)-(47), speaker A would naturally retreat to something like: *Well, at least some of them do*. A natural explanation of this retraction is that A's initial statement — i.e., the generic claim — is false. These kinds of dialogues I suggest should be taken as evidence that (38a)-(38c) are not true in general — when we think they are true we are making a mistake.

In conclusion, Leslie's theory attempts to locate the perplexing variability of the truth-conditions of generics in certain basic and primitive aspects of our psychology. Generics, according to Leslie, give voice to our mind's primitive cognitive mechanism of generalisation — they express primitive generalisations. I have provided three arguments against this view. As an alternative, I would suggest that the role, if there is one, for these primitive generalisations, is to explain errors in interpretation and truth-evaluation. Explicitly

²⁰That is, if it is read as *Mosquitoes can carry the West Nile virus, even though most don't*. See, e.g., Nickel (ms.), Asher and Pelletier (2012) and Sterken (forthcoming).

quantified generalisations are sometimes affected by these primitive mechanisms in the same way. It may be that generics are more easily influenced by our primitive cognition, but if so, that is only because *Gen* is unpronounced and likely semantically underdetermined.

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